Lesson Study, a Means for Fostering Collaborative Reflection:

Effects on the Self-Efficacy and Teaching Practices

of Developmental Education College Success Course Instructors

by

Miguel Lucas

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Graduate Supervisory Committee:

David Carlson, Chair
Wendy Barnard
Eric Haas

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ABSTRACT

Counselors at a public community college who teach a first-year college success course to developmental education students do not have effective opportunities or a systematic method to develop their teaching practice. Moreover, like a majority of community college and university instructors, many counselors do not have formal training in instruction. Since the retention and persistence rates of developmental education students are low when compared to non-developmental education students, and the purpose of the college success course is to increase developmental education student success, it is imperative that instructors of the college success course are well-trained to provide high quality learning experiences. The researcher implemented the Lesson Study (LS) professional learning experience in order to increase the collaboration amongst counselors in their efforts to improve their teaching practice as well as improve the quality of the learning experience for developmental education students, consequently potentially improving their retention and persistence. The researcher facilitated a mixed-method study to explore how instructors made meaning of their teaching practice as well as what changes they made to their instructional practice while engaging in LS. The researcher utilized qualitative means to analyze the following data: (1) instructors' weekly reflective journals, (2) semi-structured interviews with instructors after each cycle of LS, (3) video recordings of LS debrief meetings, and (4) video recordings of LS planning meetings. The researcher utilized quantitative means to analyze the following data: (1) pre/post instructor surveys on self-efficacy, and (2) 1,235 student questionnaires regarding LS lessons and non-LS lessons. Analysis of the qualitative data demonstrated that how counselors made meaning of their LS experience seemed to correlate with

positive features attributed to the practice of LS in the research literature such as increased collaboration and in-depth reflection as well as positive changes in instructional practices and an increased focus on learning from practice. In addition, analysis of the qualitative and quantitative data showed that lessons created through LS produced a higher quality learning experience for students than lessons that were not created through LS. Moreover, the analysis of the data showed an increase in instructors' efficacy for teaching.

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TABLE OF CONTENTS

Page

CHAPTER Page

CHAPTER Page

CHAPTER Page

LIST OF TABLES

Table Page

Table Page

LIST OF FIGURES

Figure Page

Figure Page

Chapter 1: Introduction and Context

Introduction

Could you imagine being responsible for teaching and improving the success of students in college but never receiving any formal training in education and not having a sufficient amount of time to collaborate with other instructors in order to improve your teaching practice? Could you imagine how challenging this same situation would be if you were a community college instructor attempting to improve the success of students who are the most underprepared and in the greatest need? Would you place your son's or daughter's health and well-being in the care of physicians who have limited formal training in the practice of medicine and who do not have time to collaborate with other medical experts to improve their practice? Similarly, if you were wrongly accused of a serious crime, would you place your life in the hands of a lawyer who has limited formal training in the practice of law or who does not collaborate with other legal experts to improve his or her practice? Our society seems to expect that professionals that practice law or medicine will not only partake in a substantial amount of training and education before entering their profession, but will also continue to develop this expertise by working with other experts in their field in order to constantly improve their practice. Why would we expect anything less from university and college faculty who have the enormous responsibility of teaching our young adults to acquire the necessary skills and knowledge to become successful professionals that will positively contribute to our society and to our world? Moreover, should we not provide these university and college instructors that teach our most disadvantaged and underprepared college students the highest quality as well as the greatest amount of professional development and training

possible to successfully remediate these students? Successfully educating our adolescents and young adults will provide them with the means to have a good quality of life and contribute to our society which is just as important as providing our society with quality medical and legal services.

Situated Context

First-Year College Success Community College Faculty

The researcher is employed as a faculty member in Counseling Services at a community college located in a suburb to a major metropolitan city in the southwest part of the United States, and all counseling faculty at this college serve in the roles of counselors as well as instructors. This community college is a two-year public college that serves approximately 21,000 students each year and offers both academic and occupational programs. For the purposes of this study, this community college will be referred to as Achieve Community College (ACC). In the role of a counselor, the researcher provides individual personal, career, and educational counseling to students. The researcher assists students in the following areas: (a) overcoming personal issues, (b) identifying, exploring and evaluating career options, and (c) learning study strategies to become more successful in school. The researcher is able to positively influence students in these areas through individual counseling as well as instruction of Counseling and Personal Development courses such as the Strategies for College Success and Career Exploration courses. These courses transfer to the state universities as elective credit. The college success course is a three credit hour course that is predominately focused on assisting students to learn effective study strategies and self-management skills as well as facilitating students' assimilation to college. The college success course also provides

students with career development instruction and covers personal development topics. For the purposes of this study, the college success course will be provided the abbreviation of CSC100. The researcher is one of the instructors of the college success course that is predominantly composed of developmental education students because currently all students testing into one or more developmental education courses (below the 100 level English, reading, and mathematics courses) are mandated to also enroll in the college success course.

First-Year College Success Course and Students' Success

The policy of mandating the enrollment of first-time college developmental education students in the college success course has substantially changed the group dynamics within the classroom. The students enrolled in the SCS100 course are some of the most challenged students as well as some of the students most in need of additional services within the college. A majority of counselors who teach the college success course have identified many of the developmental education students in the new student success cohort as having very low writing and reading skills and some lacking a sense of motivation and commitment to learning. In the past, the college success course was composed of a more balanced sampling of the ACC student population, and many students self-selected the course versus being mandated to enroll in the course. In teaching the college success course, the researcher has also noticed the under-preparedness and lack of engagement and motivation of some developmental education students.

According to the SCC Office of Institutional Research, Planning, and Development within the past four years since mandating the college success course, the

successful completion rate of students in the college success course is 73%. There have been positive gains in the retention and persistence of students in development education courses since the time the college success course was mandated in the Fall of 2009. According to the SCC Office of Institutional Research, Planning, and Development (2012), the average successful completion rate of developmental education students from the fall semesters in 2005-2008 to the fall semesters in 2009-2012 increased by 5% points from 60% to 65% in reading, increased by 4.5% points from 55.25% to 59.75% in English, and increased by 8.25% points from 52.50% to 60.75% in mathematics. Although these gains in completion rates cannot solely be attributed to the mandating of the college success course, the researcher nonetheless was inspired to continue to improve the retention and engagement of these college success course developmental education students, who have the most substantial academic and personal needs at the college. In order to improve the academic achievement and engagement of these students, the researcher planned to improve the one thing that he and his colleagues have some control over which may positively impact student achievement and engagement--their instructional practice. Many distinguished researchers and educators such as Darling-Hammond (2010) believe that the best way to positively impact student learning is to invest in and improve teacher learning. According to Stigler and Hiebert (2009), "teacher learning is the key to improving teaching" and "improving student learning will require substantial teacher learning" (p. 36-37).

Community College Counseling Faculty Preparation

Counselors hired as faculty at this Community College District have a substantial amount of education and training for their roles in providing personal, career, and

educational counseling to students. All counselors have over six hundred hours of internship and/or practicum experience providing counseling and have obtained at a minimum a Master's Degree in Counseling from an accredited university program. Moreover, a majority of accredited master's degrees in counseling require sixty credit hours of graduate work. Counselors receive a theoretical foundation in their discipline as well as practical supervised experience providing counseling. In addition to this Community College District requiring all counselors to possess a Master's of Counseling degree, all counselors must have completed the following courses within their graduate study: 1) Counseling Theories and Techniques, 2) Group Counseling, 3) Career Counseling, 4) Testing and Measurements, 5) Personality Theories or Human Development, and 6) Individual Analysis. Courses such as these found within Master of Counseling programs, in addition to the training received by counselors, seem to be most beneficial and appropriate for teaching college success courses. One of the most important skills needed to teach a strategies for college success course is the ability of the instructor to assess students as well as successfully utilize strategies to motivate students and change their behavior. Counselor training and courses such as Individual Analysis, Human Development as well as Counseling Theories and Techniques provide counselors the professional skills to effectively evaluate students, assist students to gain a better understanding of themselves, and positively change student behaviors. The college success course also has students complete inventories in order to gain a better understanding of their academic habits, personality, strengths, and interests. Counselor training and courses such as Testing and Measurement provide counselors with the professional skills to select, administer, and interpret assessments for students in order to

enable them to learn about themselves and make positive changes in their academic and personal lives. In addition, counselor training and course work in Group Counseling allow counselors to gain professional skills in conducting effective small group counseling work with students. Furthermore, the college success course has a substantial career component, and the counselor training and course work in Career Counseling provide counselors with the necessary skills to assist students in identifying and evaluating viable career options. In summary, counselors in this Community College District are very prepared to provide individual personal, career, and educational counseling as well as have the necessary and most adequate course work and training to teach the first-year college success curriculum. However, like most higher education instructors, a majority of counselors do not have much training in one of their key roles--instruction.

As a new faculty member in Counseling Services at ACC, I was very comfortable with the role of counseling as a result of my education and training in counseling. However, I quickly realized that I was not as comfortable and prepared for my role of teaching students in the first-year college success course. Even though I was able to observe and assist a college success course instructor during the semester before I began to teach the college success course, I soon realized that being an effective instructor would require a substantial amount of learning regarding how to teach. I wanted to learn about the most effective teaching practices and strategies. I also wanted to work with others to learn how to most effectively convey information to my students and positively impact their learning. Although I was very comfortable with the first-year college success course curriculum because it was aligned with the learning in my Master of Counseling

program, similar to many community college instructors new to teaching who are comfortable with their subject, I was less confident in regards to my instruction and how to assist students to learn the curriculum. I greatly improved my practice of teaching mostly through individual reflection and trial and error. I attended some one-time workshops and conferences, but these did not seem to have a profound impact on my quality of instruction. The most valuable professional development opportunity that I experienced was when I participated in Achieve Community College's Instructional Skills Workshop. This workshop was a one week learning experience where a group of five to ten instructors were taught how to prepare effective lesson plans; instructors would teach their lessons to their instructional colleagues, their colleagues would observe and critique the lesson, and instructors would receive feedback from their instructional colleagues regarding their instruction as well as receive a video of the instruction to further discuss with other colleagues. I thought this was an outstanding learning experience because it was applied learning and allowed me to more fully reflect on my practice of teaching. I remember inquiring about further learning experiences such as this, but unfortunately there were no such experiences that I was able to identify. As I became a more senior counselor and instructor, I witnessed other community college instructors, new to teaching in my division, struggle with their practice of instruction. It made me realize that there was a need for some kind of professional learning experience to be in place in order to assist counselors to utilize their expertise in improving their instructional practice, thus having a more substantial effect on the learning experience of our developmental education students.

Strategies and Challenges to Dev. Ed. Student Achievement at ACC

Similar to many community colleges, students testing into developmental education reading, mathematics, and writing courses at ACC have lower rates of retention than desired in these courses and low rates of persistence into subsequent courses. According to the Office of SCC Institutional Research, Planning, and Development (2012) during the fall 2012 semester, 51% of the developmental education students successfully completed their mathematics courses, 60% successfully completed their writing courses, and 65% successfully completed their reading courses. The persistence rate of developmental education students at SCC from fall of 2009 to fall of 2010 was 42% in reading, 50% in mathematics, and 54% in writing. In 2006, faculty from reading, mathematics, counseling, and English who teach courses composed of students testing into developmental education courses fostered a community of practice by creating the Developmental Education Committee (DEC) in order to increase the retention and persistence of these students in completing their remedial courses and a college education. The Developmental Education Committee has made many strides in improving the success of developmental education students as seen by the increase in percentage points for the average rates of successful completion from the fall semesters in 2005-2008 to the fall semesters of 2009-2012. The DEC created an early alert program for student athletes so that faculty could make the athletic department aware of student athletes in developmental education courses who are not successful. The DEC began offering learning communities by linking developmental education courses with college success courses in order to better contextualize success strategies in developmental education courses. The DEC began offering developmental education courses through

accelerated and alternative formats in order to address students' different learning styles and accelerate the amount of time students spend in developmental education courses. Furthermore, the mathematics department began offering a tutored mathematics course that provides supplemental instruction to developmental education students.

In addition, there have been changes in policies that have had a positive impact on all first semester college students such as the requirement that students testing into developmental reading must take a reading course during their first semester, and students testing into one or more developmental education courses must take a college success course. Now, students are also not permitted to enter a developmental education course once the developmental education course has met for the first time. Furthermore, developmental English students are permitted to retest after completing their first developmental education English course in order to provide students who have mastered specific writing skills the ability to skip a developmental education writing course. Although the DEC has made some strides in implementing new innovations and changing procedures to assist these students to be successful in all developmental education areas, there continue to be many challenges.

There seem to be many reasons for the lack of success of developmental education students. According to interviews with developmental education reading, mathematics, and English faculty, many developmental education students entering ACC are not prepared for college and lack basic study skills as well as self-management skills to be successful. Similarly, many developmental education faculty believe these students have developed habits and behaviors that are not beneficial to their academic success and are unfamiliar with the high expectations of college. Some developmental education

instructors believe that developmental education students have low self-esteem and self-efficacy for learning because they have become accustomed to failing. Furthermore, some developmental education instructors believe that family obligations and financial concerns also impact the success of college students since many developmental education students work part-time or full-time while attending college in order to support their families or educational expenses. Moreover, some developmental education faculty believe many of these students also seem to have unclear career goals and for this reason lack motivation and the persistence to continue in their academics. As the curriculum of the mathematics, English, and reading courses appear to address student deficiencies in these subject areas, the curriculum of the college success course also appears to address many of the developmental education students' challenges and needs in order to facilitate their academic success. However, the success of students in a course is not only dependent on the course curriculum and instructor's expertise in the subject area, but also very much reliant on the instructor's ability to teach. Even with the necessary counselor training and appropriate curriculum, it would be very difficult for any instructor to effectively teach students the first-year college success course curriculum or any other developmental education course for that matter without adequate instructor training and self-efficacy regarding instruction.

Innovation

In order to improve the teaching practice and self-efficacy of instructors teaching the first-year college success course, the researcher implemented the Lesson Study professional learning experience with a group of counselors teaching the Strategies for College Success (SCS100) course. Darling-Hammond (2010) describes Lesson Study as

a collaborative approach to inquiry about practice "which involves teachers jointly crafting a lesson, observing while a colleague teaches it, then studying student responses and learning evidence to refine the lesson further" (p. 200). Similarly, Fernandez and Chokshi (2002) describe Lesson Study as a "Japanese professional development process that enables teachers to systematically examine their practice in order to become more effective instructors" (p. 128). Although there may be a variety of iterations of Lesson Study, it appears to have some basic shared features where three to six instructors collaborate to: (1) identify a student learning goal or focus for the lesson, (2) devise a detailed lesson plan focused on the students' experience and their learning as well as a plan for gathering evidence on student learning, (3) teach the lesson, observe, and gather evidence: one instructor teaches the lesson while the other instructors observe the lesson while focusing on student learning, (4) debrief, analyze, and discuss the lesson as well as their findings from the observations and student work, (5) revise the lesson, and (6) repeat the lesson study research cycle: reteach and observe the revised lesson as well as debrief and discuss the revised lesson (Audette, 2004; Cerbin, 2011; Fernandez, 2002; Fernandez & Chokshi, 2002; Puchner & Taylor, 2006; Lewis & Tsuchida, 1999).

Purpose of Study and Research Questions

The primary focus of this study was to explore the effect that the Lesson Study innovation had on the college success course instructors' collaborative knowledge building and reflection as well as on their thoughts, feelings, and actions in regards to their teaching practice. In essence, the researcher was attempting to explore how counseling faculty experienced their teaching practice and their work environment as a result of participating in Lesson Study. A secondary focus of this study was to explore if

the Lesson Study innovation impacted the college success course instructors' self-efficacy for teaching. A tertiary focus of this study was to explore teaching strategies and practices that instructors may have learned or developed from participating in Lesson Study. In order to assess the effectiveness of the intervention in the college success course, this study addressed the following research questions:

1) How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?
2) How, and to what extent, will Lesson Study impact the self-efficacy of the college success course instructors?
3) What changes in their instructional practices did the college success course instructors make as a result of participating in Lesson Study?

Chapter 2: Literature Review

Developmental Education in Higher Education

Importance of Developmental Education

Many professionals in our society agree that a top educational priority for our nation is improving the rates of success among community college students (Goldrick-Rab, 2010). Moreover, the improvement of the effectiveness of developmental education is one of the most important issues confronting community colleges today (Bailey & Alfonso, 2005). "One of the greatest challenges that community colleges face in their efforts to increase graduation rates is improving the success of students in their developmental, or remedial, education programs" (Rutschow & Schneider, 2011, p. 1). The success of developmental education college students in regards to their retention as well as persistence to degree completion are of great importance not only to our educational institutions but also to our society as a whole. According to Oudenhoven (2002), there have been several significant studies on the remediation of college students that emphasize this issue as being of the highest importance to our society. "Many educators and researchers have reached the conclusion that remediation is one of the most important and most pressing educational, social, and economic issues in the United States today" (Oudenhoven, 2002, p. 36). The outcomes of developmental education not only impact the field of education, but it also has a significant impact on the social and economic well-being of our society.

Substantial Amount of Students Need Remediation

One reason that developmental education is such a pressing issue is that there are many students entering higher education in need of remediation. McCabe (2000)

reported that there were over one million students, approximately one in four first-year university/college students, who were not prepared for college level study entering higher education every year. Moreover, community colleges serve a greater proportion of these students who are in need of remediation. McCabe (2001) stated that nearly half of first-year community college students have at least some basic skill deficiency, and he also predicted that this number would continue to grow. Recent studies have shown that as a result of community college open admission policies, 61% of students enrolled at community colleges take at least one remedial course while in college and 25% take two or more remedial courses (Goldrick-Rab, 2010). Likewise according to Rutschow and Schneider (2011), recent research has shown that over half of entering community college students are underprepared for college-level work and need to enroll in at least one remedial reading, writing, or mathematics course. These findings are even more startling when one considers that according to Rutschow and Schneider (2011), community colleges enroll over one-third of all post-secondary students. At Achieve Community College (ACC), where the researcher serves as a counselor and instructor, the percentage of students testing into remedial courses is substantially higher. According the SCC Office of Institutional Research, Planning, and Development 2011-2012 Fact Book (2012), 73% of students entering ACC tested into at least one developmental education course during the Fall 2011 semester. Undoubtedly, as a result of the substantial amount of students entering higher education underprepared for college level work, the success of developmental education students has become a pressing issue in higher education.

Developmental Education Students Have Low Rates of Retention and Persistence

A second reason the issue of developmental education is of great importance in education as well as in our society is that many developmental education students are not successfully remediated and have low rates of retention and persistence. According to Brothen and Wambach (2004), there has been great dissatisfaction with the lack of success of developmental education students which has caused a crisis in developmental education. This crisis of student success is also experienced by many of the developmental education students that the researcher works with at ACC as well as those professionals serving these students. The retention rate of developmental education students at ACC during the Fall 2011 semester ranged from 58% to 66% (English 58%, mathematics 65%, and reading 66%), and this low retention rate is very similar to the findings from other United State colleges and universities (SCC, 2012). According to the National Community College Benchmark Project (n.d.), successful retention of United States college students in developmental education courses in the Fall of 2009 ranged from 57% to 67% in the three remedial areas of writing, mathematics, and reading. In addition, the persistence rates of United States developmental education community college students are much worse. According to the National Community College Benchmark Project, the persistence rate of developmental education students at ACC from the Fall 2009 semester to Fall 2010 semester ranges from 42% to 54%. Similarly, according to McCabe (2001), approximately half of academically deficient students successfully complete remediation. Furthermore, according to Bailey, Leinback, and Jenkins (2006), many community college students with the intention of earning a credential do not earn a degree or certificate. Radford, Berkner, Wheeless, and

Shepherd's (2010) study demonstrated that just over 30% of community college students who enrolled in 2003-2004 earned a degree or credential within six years of first enrolling. According to Goldrick-Rab (2010), even when provided a longer time to allow for successful completion, close to 50% of community college students do not complete a degree or credential. Moreover, community college students who require remedial education are less likely to complete any type of credential (Bailey, Calcagno, Jenkins, Leinbach, & Kienzl, 2006). Likewise, very few of developmental education students complete their required sequence of remedial courses, let alone graduate from college with a degree or certificate (Jenkins, Jaggars, & Roksa, 2009; Bailey, Jeong, & Cho, 2010). These findings demonstrate that many of our developmental education college students are not succeeding in completing their developmental education course as well as academic credentials. Improving the retention and persistence of developmental education students is of upmost importance to our society because there is a great financial cost as well as a waste of resources and energy when college students are not successful in achieving their academic pursuits.

Our Society Needs Educated Workers

A third reason that we must make community college developmental education a priority in the United States is that our society will be in need of an increased amount of educated workers. Mitra Toossi, an economist in the Office of Occupational Statistics and Employment Projections in the Bureau of Labor Statistics, claims that since the 1970s the growth rate of the United States labor force has been decreasing with the passage of each decade, and the U.S. labor force growth rate is expected to continue to decline in the future (Toossi, 2006). Toossi emphasizes that the baby-boom generation

have been the major contributors to the U.S. labor force growth, yet as this generation begins to retire, they will greatly lower the U.S. labor force growth rate. Similarly, according to McCabe (2000), a vast number of Americans born between 1945 and 1964, known as the baby-boom generation, will leave the workforce in the coming decades. According to the United States Department of Labor's Bureau of Labor and Statistics (2012) as the baby boomer generation reaches the 55 years and older age group in 2020, they will encompass an astonishing 25.2% share of the American labor force. It is estimated that 76 million American workers of the baby-boom generation will prepare to retire, and in 2030 the number of Americans over 65 will increase from 33.5 million to 69.3 million (McCabe, 2001). The retiring of these older age workers in the labor force will result in a loss of much needed skills and knowledge (Toossi, 2006). McCabe (2000) argues that these massive amounts of retirements will result in the United States having a great need for Americans who possess the necessary education and skills to replace these workers. Moreover, according to McCabe (2001), there will be a need for a highly skilled American workforce to support the growing elderly population. In addition, according to the Georgetown University Center on Education and the Workforce, by 2018 the U.S. economy will need 22 million new college graduates to fill the needs of employers but will fall short of this number by at least 3 million postsecondary degrees (Carnevale, Smith & Strohl, 2010). Furthermore, since labor force growth is one of the major determinants of long-term economic growth and the economy's ability to create goods as well as provide services (Toossi, 2006), failing to replace the labor force declines related to the baby-boom generation could result in a decline of the U.S. economy. As a result, if we do not successfully remediate the

enormous amount of developmental education students in the U.S., our society may not have a sufficient amount of qualified workers to fill the positions vacated by retirees, producing a negative effect on the economic well-being of our nation.

Similarly, remediation of developmental education students is such an important issue because our society will be in great need of educated individuals with the knowledge and skills to compete in a much more global and highly skilled economy. According to McCabe (2000, 2001), today's society and the society of the future will demand highly skilled and educated workers. McCabe (2001) forecasts that in the 21st century, 80% of new jobs will require a post-secondary education. There were plenty of jobs for unskilled workers in the 1950s with 60% of American jobs being filled by unskilled laborers, but today there are much fewer jobs accommodating unskilled workers and only 15% of jobs are filled with unskilled workers (McCabe, 2000). Likewise, according to the Georgetown University Center on Education and the Workforce, from 1973 to 2008 the percentage of jobs in the U.S. economy that required postsecondary education increased from 28% to 59% and is expected to increase to 63% over the next decade (Carnevale et al., 2010). There is a great demand by U.S. employers for workers with high levels of education and training since computer technology has automated repetitive tasks reducing the need for unskilled workers and greatly increasing the value of non-repetitive functions in all jobs (Carnevale et al., 2010). According to Carnevale et al. (2010), United State businesses have reported shortages of competent job applicants, and they have pressured Congress to allow for the hiring of 300,000 highly skilled foreign workers to fill jobs that Americans are not prepared with the necessary skills to successfully undertake. Similarly, Darling-Hammond (2010) stresses that as a

result of the lack of skilled workers, the United States currently must fill many of its high-tech jobs with professionals educated overseas. Since community colleges enroll over one-third of all postsecondary students, community colleges have become critical to the efforts of improving the quality of the workforce in the United States and maintaining its competitiveness in a global economy (Rutschow & Schneider, 2011).

Health of Our Society Depends on Educated Citizens

According to the Georgetown University Center on Education and the Workforce, nine out of ten workers with a high school education or less are limited to occupational areas that either pay low wages or are in decline (Carnevale et al., 2010). A greater amount of unskilled workers in an overwhelmingly high skilled economy could lead to unfortunate negative consequences such as increased poverty and crime in our society. Darling-Hammond (2010) highlights that an increasing amount of U.S. citizens are becoming unemployable as a result of insufficient education which creates a drain on the economy and social well-being of our nation as more and more citizens are served by the welfare or prison system. Since the U.S. economy can no longer provide unskilled workers with decent wages, a lack of education is increasingly linked to crime and welfare dependency (Darling-Hammond, 2010). McCabe (2001) reports that successfully remediated students commit less than one-third the number of felonies than other Americans with similar characteristics. The lack of educational attainment combined with the devastating effects of unskilled workers could produce countless socioeconomic problems within our society. In addition, a study conducted by the Organization for Economic Cooperation (2005) found that for every year the average educational level of the population is raised, there is a corresponding increase of 3.7% in

long-term economic growth. Furthermore, student dropouts (low educational attainment) produces losses in wages and taxes, greater costs for health and social services, low productivity in the workforce, and increased incarceration which costs the U.S. an estimated amount of nearly 300 billion dollars annually (Darling-Hammond, 2010; Levin, 2007). It is imperative that we improve the retention and persistence rates of students testing into developmental education because many of these students will be lacking the basic skills to be productive members of our society, thus negatively impacting the economic and social well-being of our society.

Successfully Remediated Students Positively Contribute to Our Society

A fourth reason for improving the success of developmental education students is that students who successfully complete remedial education seem to be very successful in contributing to the economic and social well-being of our society. According to McCabe (2001), ten years after beginning developmental courses, 98% of students receiving remediation are employed and 90% are in above-minimal-level jobs. McCabe (2001) also states that nearly two-thirds of students receiving remedial education are employed in areas of greatest job growth such as in new technical and office careers. Likewise, according to the United States Department of Labor's Bureau of Labor and Statistics Department (2012), a higher degree attainment is associated with higher earnings and lower unemployment. In 2009, the median earnings ranged from about $18,000 for workers with less than a high school degree to about $27,000 for those with a high school diploma compared to about $48,000 for those with a bachelor's degree and over $60,000 for those with an advanced graduate degree (Ryan & Siebens, 2012). Higher earnings provide Americans with greater purchasing power which in turn produces increased

economic growth. According to the Georgetown University Center on Education and the Workforce, a postsecondary education has become a requirement for access to the middle socioeconomic class (Carnevale et al., 2010). In 1970 only 26% of the middle class had a postsecondary education, but by 2007, 61% of middle class workers had a postsecondary education (Carnevale et al., 2010). According to the United States Department of Labor's Bureau of Labor and Statistics Department (2012), in 2011, workers with a high school diploma had an unemployment rate of 9.4% while those with an associate degree had a 6.8% unemployment rate and those with a bachelor's degree had a 4.9% unemployment rate. These findings suggest that successfully remediated students who complete their academic goals are more likely to be employed than those developmental education students who are not remediated and thus do not complete their academic goals. If we do not successfully assist developmental education students, we will lose the positive contributions that these students can potentially make to our economy. It appears that increasing the persistence and retention rates of developmental education students is of great importance to the financial health of our economy and society.

Successfully Remediated Students Achieve in College Level Courses

A fifth reason for improving the success of developmental education students is that those who succeed in their developmental education courses do as well in standard college classes as those who began without deficiencies (McCabe, 2001). In a study at Henry Community College, researchers found that developmental students were retained at a level higher than non-developmental students (Overby, 2004). In addition, there was no statistical difference between the graduation rates of students who placed into developmental courses and that of non-developmental students. Similarly, there was no

statistical difference between the success rates of students enrolled in college-level courses who successfully completed the required developmental prerequisites and that of non-developmental students (Overby, 2004). In addition, some recent rigorous studies of developmental education students in community colleges have revealed short-term positive effects on student persistence (Attewell, Lavin, Domina, & Levey, 2006; Bettinger & Long, 2005; Calcagno & Long, 2008; Moss & Yeaton, 2006). According to Attewell et al. (2006), there has been little evidence that developmental education in higher education improves students' chances of completing a degree or credential because many studies fail to control for important selection biases. Attewell et al. (2006) used data from the National Educational Longitudinal Study to assess the impact of remedial education courses on a representative sample of 6,879 students who were scheduled to graduate from high school in the spring of 1992. By using logistic regression and propensity models that control for variables such as academic performance in high school and family background, Attewell et al. (2006) demonstrated that there is no statistical significance between degree completion of those students who took remedial courses and those who did not take remedial courses. In fact even for students who took three or more developmental education courses, there was no significant difference in degree completion or academic success when compared to those who did not take remedial courses. More importantly, Attewell et al. (2006) found that community college students who successfully completed their developmental education courses were more likely to graduate than equivalent students who never took remedial courses. This research is very encouraging because it demonstrates that students testing into developmental education who complete their remedial courses are successful. Such

research supports the importance and benefits of effective developmental education. In addition, McCabe (2001) believes that the cost benefit of providing developmental education is exceptionally positive because developmental education successfully remediates half of its students with an expenditure of only 1% of the national higher education budget. Nevertheless, we must also consider the other half of all developmental education students who do not complete their remedial courses successfully. Many researcher and educational leaders are strongly advocating for a revamping of developmental education in order to reach those students not currently succeeding in their remedial courses, thus increasing their persistence and retention as well as consequently positively impacting their future success in addition to the success of our society and our educational institutions.

Developmental Education Best Practices

Much of the best evidence regarding what policies and practices are most promising for improving the rates of success of community college students is new and scarce (Goldrick-Rab, 2010). Furthermore, there is very little rigorous research analyzing the effectiveness of remediation programs (Goldrick-Rab, 2010; Levin & Calcagno, 2008; Rutschow & Schneider, 2011; Schwartz & Jenkins, 2007), and a majority of the research on remedial education have serious methodological flaws (Bailey & Alfonso, 2005; Levin & Calcagno, 2008). However, Rutschow and Schneider (2011), by emphasizing results from high quality research using experimental and quasi-experimental studies, identify the most promising approaches and programs for improving the achievement of developmental education students. Their analysis focused on four different types of interventions for improving students' progress through remedial

education and into college-level courses, including (1) strategies that help students avoid developmental education by improving their skills before they enter college (avoidance approach) such as dual enrollment, summer bridge, early assessment; (2) interventions that accelerate students' progress through developmental education by shortening the timing or content of their courses (acceleration approach) such as fast-track modularization, mainstreaming; (3) programs that provide contextualized basic skills together with occupational or academic courses (contextualization approach) such as learning communities, linked courses; and (4) programs that enhance the supports for developmental education students (student supports approach) such as intensive advising, supplemental instruction, college success courses. Programs that showed the greatest benefits for students with relatively rigorous research either mainstreamed developmental students into college level courses with additional supports for students (tutoring, supplemental instruction, college success course), provided modularized or compressed courses to allow developmental education students to more quickly complete their remedial work, or offered contextualized remedial education within occupational programs (Rutschow & Schneider, 2011). The three practices that were shown to provide the greatest benefits to students through rigorous research all seem to attempt to accelerate students into college level courses and decrease the time students spend in remedial education. Although there are a variety recommended strategies for potentially improving the success of developmental education students that are in need of further rigorous research, it appears that many researcher and educators are advocating for strategies that accelerate students into college level courses.

Researchers stress the importance and benefits of developmental education courses while also advocating that one size does not fit all and that there could be alternative approaches that could benefit certain developmental education students. Boylan (1999), one of the leading researchers and advocates of developmental education, stresses that for students with very low academic skills, developmental education courses may be essential to their academic success; yet for developmental students who may possess higher academic skills, alternative approaches could be utilized to reduce the amount of time required for the remediation of their academic skill deficiencies. Boylan (1999) identifies student support interventions such as freshman seminars (college success courses) and supplemental instruction as well as contextualized learning such as learning communities and paired (linked) courses as a means to accelerate the remediation of students. Brothen and Wambach (2004) allude to the importance of developmental education courses by citing research that suggests it would not be beneficial or possible to replace all developmental education courses with alternatives, as well as calling attention to research demonstrating the negative effects of completely removing developmental education courses since it would force instructors to modify college level courses in order to accommodate developmental education students. Nevertheless, Brothen and Wamback suggest alternatives to developmental education courses in the form of acceleration approaches such as mainstreaming students with linked courses as supports and integrating developmental skills into college level courses, student support approaches such as supplemental instruction, and contextualization approaches such as linked courses. The practices representing the most promising areas of developmental education reform highlighted by Goldrick-Rab (2010) include

contextualized learning approaches in the form of learning communities, student support approaches in the form of student life skill courses (college success courses), and avoidance approaches such as dual enrollment and early assessment programs. Bailey and Alfonso's (2005) analysis of research on program effectiveness at community colleges identify effective programs such as contextualization in the form of learning communities and student support approaches while providing research highlighting first-year freshman seminars (college success courses) as being the most effective. Schwartz and Jenkins (2007) also emphasize a holistic approach to developmental education that integrates practices such as student supports in the forms of college success courses and supplemental instruction, contextualization in the form of linked courses and learning communities. Similarly, Levin and Calcagno (2008) identify practices that have shown some successes using contextualized approaches including linked courses and learning communities as well as student support approaches such as college success courses and tutoring. The organization Complete College America (2012) also recommends acceleration approaches such as mainstreaming students into college level courses with supplemental supports. Although many researchers and educators support developmental education, many are also advocating making changes to developmental education so that students can more quickly enter college level courses.

First-Year College Success Course

Characteristics of the College Success Course

The first-year college success course can be a means used to support the reshaping of developmental education in its effort to more quickly move developmental education students into college level courses. At ACC the college success course is

designed to support students to be successful in college and covers three primary areas: (a) personal development: time management, goal setting, learning styles, communication, relationships, critical thinking, decision-making, and diversity; (b) study skills development: memorization, note-taking, reading, and test-taking; and (c) career development: exploration, research, evaluation, and career/educational planning. These topics are very similar to the topics identified as being fairly consistent since 1988 in college success courses: study skills, time management, campus resources, academic planning, career exploration, critical thinking, college policies, relationship issues, diversity issues, writing skills, and others (Duggan & Williams, 2011). The purpose of the student success course is to introduce students to the various support services offered at the college, assist them to transition to the college environment, and provide study skills and strategies to be successful in higher education (O'Gara, Mechur Karp & Hughes, 2009). Derby and Smith (2004) additionally also note that college success courses seek to foster relationships with students, faculty, and staff that will help provide a sense of belonging and facilitate their success.

Integrates Into Most Promising Developmental Education Approaches

The first-year college success course is a versatile strategy that can be integrated into the most promising developmental education approaches of acceleration, contextualization, and avoidance. For example, according to Rutschow and Schneider (2011), the avoidance approach in the form of summer-bridge programs sometimes incorporates a first-year college success course to assist students to be successful in college. In addition, the acceleration approach of mainstreaming students into college level courses usually offers supplemental supports such as a first-year college success

course, and the acceleration approach of fast-tracking students may require students to enroll in a college success course in order to provide students with study skills that support their learning in fast track developmental education courses (Rutschow & Schneider, 2011). Furthermore, a popular strategy in the contextualized learning approach is for students to enroll as a cohort in a developmental education course and a college level course as well as a college success course in order to provide additional supports to the developmental education students (Rutschow & Schneider, 2011). The college success course can be a great strategy used to support the reforms of developmental education that seek to shorten the amount of time students spend in developmental education course work.

Positively Impacts Student Success

Research on student success courses has shown some promising results concerning their impact on student success. According to Rutschow and Schneider (2011), research on student success courses have shown more promising results than other student support approaches such as academic advising. Experimental studies on the impact of student success courses have shown positive gains on the amount of credits students earn and their progression through developmental education, while quasi-experimental studies demonstrated positive long-term effects on degree earning and transfer particularly for developmental education students (Rutschow & Schneider, 2011). A recent descriptive study by the Florida Department of Education (2006) analyzed a cohort of 36,123 Fall 1999 first-year community college students by comparing the success of students who successfully completed a college success course (Student Life Skills course) with students who did not successfully complete the course

or never enrolled in the course. The students were followed for a five year period, and successfully completing the college success course overall had a positive impact on students' academic success. Fifty-eight percent of the students who successfully completed the college success course were successful (earned a degree, transferred to a state university, or continued to be enrolled at a community college) as compared to 41% of those who did not successfully complete a college success course. For students not in developmental education, the college success course had a particular positive impact on earning a degree, 53% for those successfully completing the college success course earned a degree versus 37% for those who did not complete the course. Whereas, for developmental education students the college success course had a particular positive impact on their continued enrollment at the community college, 39% of students successfully completing the college success course continued to be enrolled in college versus 23% of those who did not complete the course. It also had a particular positive impact on their overall academic success with 53% of students successfully completing the college success course achieving academic success compared to 33% of students not completing the college success course achieving academic success. For each racial/ethnic group, students successfully completing the college success course were 1.5 times more likely to achieve academic success than those who did not complete the college success course.

Zeidenberg, Jenkins, and Calcagno (2007) performed a follow-up study to the Florida Department of Education study that examined the percentage of students who earned a certificate or associates degree and focused on all students who enrolled in the course, whether they successfully completed the course or they did not complete it

successfully. This study was more rigorous because it focused on all students enrolled in the course and it utilized logistic regression to control for student characteristics that could impact student success. They found that for almost all the colleges, the effects of enrollment in a college success course had a positive and statistically significant impact on students' completion of a certificate or degree. In addition, enrolling in a college success course was associated with an increase in persistence in school and in transferring to a university. Similarly, Derby and Smith (2004) using a sample of 7,466 students attending a Midwestern community college examined the relationship between enrolling in a college success course (orientation course) and (a) obtaining a degree in a two-year period, (b) dropping out of school, and (c) student persistence. A chi-square analysis revealed a significant positive association between enrollment in a college success course and an increase in the following student outcomes: (a) completion of a degree, (b) retention, and (c) persistence. In other words, students who enrolled in the college success course were more likely to earn a degree, were less likely to drop out, and were more likely to continue their enrollment in college courses.

Another study by Derby (2007) consisting of 3,538 students from a midwestern public community college used logistic regression to determine the impact of a college success course (orientation course) on students' successful completion of a degree within a four year period. Participation in a college success course had a positive and significant association with students completing a degree within a four year period; increases in college success course participation relates to increases in degree completion (Derby, 2007). According to Derby (2007), students who participated in the college success course were 72 times more likely to obtain a degree as compared to those students who

did not participate in the course. "That orientation course participants were 72 times more likely to graduate, reinforces the importance of this variable" (Derby, 2007, p. 890). Furthermore, according Schnell and Doetkott (2003), there are many studies from community colleges as well as universities that reaffirm an association between increased student retention and the college success course. Schnell and Doetkott's (2003) study compared a group of students from a midwestern public university who enrolled in a college success course with a matched comparison group of students with similar characteristics (academic major classification, gender, ACT composite scores, high school class rank, high school class size) who did not enroll in a college success course to examine the retention rates of these two groups over a period of four years. A chi-square analysis was used to compare the two groups of students, and retention rates were significantly greater for those students who were enrolled in the college success course when compared to those students not enrolled in the course.

College success courses appear to be very beneficial in increasing student success, yet according Duggan and Williams (2011), there is very little research regarding what are the most beneficial topics and most effective teaching methods in the college success course. In their qualitative study, Duggan and Williams (2011) interviewed 60 students representing 10 different colleges who completed a college success course to explore their perceptions regarding the usefulness of the course and the topics covered as well as the teaching methods utilized in the course. Overall a majority of the students found the course beneficial to their academic success. Students expressed that the course increased their engagement at the college and helped them learn study skills as well as time management and organizational skills. In another qualitative study by O'Gara et al.

(2009), 36 students from two community colleges in the Northeast who completed a college success course were interviewed to explore their perceptions of the college success course. Students generally found the college success course to be beneficial in the following ways: (a) They acquired information about the college and about support resources, (b) They developed study skills and techniques to be successful in their academics, and (c) They created beneficial relationships with students and faculty (O'Gara et al., 2009). Quantitative as well as qualitative studies seem to provide support for the use of the college success course as a means to improve student success, particularly the success of developmental education students. However, there is not much research on one of the most important contributors to the success of any course, who teaches the college success course and their level of training as well as professional development.

University and College Faculty Preparation and Professional Development

Preparation for Teaching

Unless you are a faculty member teaching in a department of education, the majority of university and college instructors have limited to no formal training in the practice of teaching. According to Gerstein (2009), community college faculty spend a majority of their time providing instruction, yet they are least prepared for this role. Murray (2002) argues that few new community college faculty are adequately prepared to teach the very diverse and sometimes less academically prepared group of students entering the community colleges. Community college faculty, like university faculty, possess very little training in regards to their instructional practice (Grubb, 1999; Stahl, Simpson, & Hayes, 1992). Likewise, faculty in higher education enter the profession of

teaching with little to no background in pedagogy and curriculum design (Cerbin & Kopp, 2006; Grubb, 1999; Wagoner, 2008). Cerbin (2011) also emphasizes that few college instructors are trained in instructional design and many have no pedagogical training. Although university and college instructors may be very versed and knowledgeable in their particular disciplines, a majority of these instructors do not have formal training in the pedagogy and practices of teaching. Many university and college instructors who are not teaching in departments of education have never taken a course in teaching practices let alone completed a degree or certificate in the practice of teaching. In order to teach academic courses in higher education, community colleges and universities require a minimum of a master's degree in the discipline to be taught, but there is no requirement for a teaching degree or credential. Other than more formal training in the form of professional development once a faculty member begins to teach, much of university and college instructors' teacher training appears to be acquired through more independent on the job experience as a result of serving as teacher assistants and teaching undergraduate courses.

Current Professional Development Opportunities are Not Effective

Although professional development opportunities may be the only method of formal training for higher education faculty, many of the professional learning experiences available to community college faculty are not very beneficial. Much of university and college faculty teacher training and professional development seem to take place through one-time workshops and conferences. According to Goldrick-Rab (2010), at many community colleges the most common forms of professional development for faculty are one-time workshops, and unfortunately research has found these professional

development experiences to be ineffective. Short-term professional development programs in community colleges do not have lasting effects (Murray, 2002), and a majority of community college instructors do not desire to participate in short-term in-service professional development workshops (Brawer, 1990). Darling-Hammond (2010) also emphasizes that short-term workshops are the most common learning opportunities for U.S. teachers although they have been found to produce little change in teaching practice. Similarly, professional development practice that involve presumed experts providing short-term workshops for teachers have become ingrained in our educational culture yet have produced few changes in teaching (Stigler & Hiebert, 2009). Thus, many community college instructors may lack consistent professional development opportunities over longer periods of time for meaningful learning (Goldrick-Rab, 2010).

Likewise, educators criticize teacher professional development efforts for their lack of continuity and failure to produce effective changes in instructional practices and student learning. Similarly, Gerstein (2009) identified campus wide gatherings, department meetings, formal conferences, and informal conversations among colleagues as the four most prominent community college faculty professional development opportunities, and she argued that these professional development opportunities were not conducive to improving instructional practices and student learning. Gerstein (2009) described three of these events as not focusing for a long period of time on teaching and learning: (a) campus wide gatherings were generally one-time events focused on the interests of administrators and not aligned with the needs of faculty, (b) department meetings typically focused on administrative and business issues, and (c) annual conferences generally focused on the field of study or discipline. The fourth professional

development activity, informal conversations with colleagues, was not a regular and consistent experience because of a lack of time and scheduling conflicts which makes it a a short-term professional development activity which have been found to be ineffective. Likewise, a majority of faculty professional development programs separate the learning experience from the instructor's context and practice, the schools and classrooms in which they work (Bruce, Esmonde, Ross, Dookie, & Beatty, 2010). A summary of experimental research found that short-term professional development experiences have no effect on teachers' effectiveness, while long-term content-specific learning opportunities averaging about 49 hours during a 6 to 12 month period were associated with significant student gains on achievement tests (Darling-Hammond, 2010; Yoon, Duncan, Lee, Scarloss,& Shapley, 2007). One-time professional development programs do not allow for instructors to participate in a systemic and comprehensive examination of their practice because they occur sporadically, and one-time professional development programs do not allow for a concrete examination of the instructors' practice because learning is not embedded in their work environments. "Like professors elsewhere, community college faculty need resources for planning and curriculum development and for regular meetings to discuss teaching, refine lessons, and assess performance" (Goldrick-Rab, 2010, p. 449). According to Goldrick-Rab (2010), there is a need for more research and evidence regarding what kinds of professional development and support produce more effective teaching practices. Community college and university instructors teaching developmental education students, those students most in need and most challenged, need high quality professional development that provides opportunities for instructors to systemically and concretely evaluate their practice and produce more

effective teaching practices. "Becoming an expert teacher will require consistent opportunities over long periods of time for teachers to study and improve their own teaching and the teaching of their colleagues" (Stigler & Hiebert, 2009, p. 37). The lack of formal preparation before entering the field of higher education as well as the ineffective professional development after entering the field, produce a situation where many community college faculty are entering the profession with limited training in teaching and continue to receive insufficient training to improve their practice.

Professional Development

Effective Professional Development

If professional development may be the only means of formal teacher training for community college faculty, then what makes this professional development beneficial and effective? An analysis of empirical research identified common features found in effective professional development:

- content focused: focus on subject matter content and how students learn that content
- active learning: teachers have opportunities to get involved in learning
- coherence: consistent with instructors' beliefs as well as school and district policies
- duration: continuous and over a longer period of time
- collective participation: instructors collaborate in learning (Desimone, 2011)

One study attempting to identify ways to improve professional development analyzed data from a large sample of elementary and secondary school instructors in the United States. The results provided confirmation on best practices that were identified in

previous studies as being more likely to have an impact on teacher practice as well as enhancing their knowledge and skills:

- provides a sustained, intensive, long-term professional development experience versus a short-term experience
- is focused on academic subject matter
- gives opportunities for active and hands-on learning
- is integrated into the daily life of the school (Garet, Porter, Desimone, Birman & Suk Yoon, 2001)

This study recommends that in order to foster effective professional development, it is most important to devise professional development experiences that provide a longer duration of learning and collective participation as well as address the core features from previous studies of a focus on content, active learning, and coherence. Garet et al. (2001) highlight the importance of opportunities for collaborative learning amongst instructors that extend for a long period of time for improving professional development. Teachers in a study of primary and secondary schools in England identified sharing of practice and observation of colleagues as the two highest quality professional development activities, and a majority of these teachers believed that these longer-term developmental activities positively changed aspects of their teaching practice (Boyle, While & Boyle, 2004). In Gerstein and Ragey's (2008) study of faculty's professional development experiences in Foothill-De Anza Community College District, faculty identified learning in groups as some of their most beneficial and effective professional learning experiences. In addition, Murray (2002) also highlights that professional development programs are more effective when they are faculty-driven and when faculty participate in the design and

implementation of the professional development experience. From this research, it appears that faculty desire and benefit from professional development opportunities that provide faculty ownership of their learning and allow them to collaborate in improving their practice over a long and continuous period of time. Research "points to the effectiveness of sustained, job-embedded, collaborative teacher learning" (Darling-Hammond & Richardson, 2009, p. 49)

Challenges to Effective Professional Development

However there are challenges to collaborative teacher-owned professional learning. As a result of a considerable work load and increased responsibilities, many community college faculty do not have the necessary amount of time to participate in professional development opportunities as well as collaborate with other instructors and experts to improve their teaching practice. According to Gerstein (2009), community college faculty have a very difficult time finding a sufficient amount of time to engage in professional learning. Whereas university instructors may be overburdened with the pressures of publishing or conducting research, community college instructors are teaching an overwhelming amount of courses and are also responsible for additional activities that limit the amount of time they can dedicate to improving their teaching practice. In the Community College District of ACC, faculty teach a minimum of fifteen credits hours a semester while being responsible for other activities such as providing support services to students as well as participating in committee assignments. Similarly, according to Goldrick-Rab (2010), community college instructors do not have much time for activities other than teaching and have little incentive to spend their scarce time learning how to improve their teaching practice.

In addition, many community college and university faculty find themselves in very isolated professions that are not conducive to collaborative professional learning. Traditionally, teaching is understood to be a very isolated profession (Fernandez, 2002; Hindin, Morocco, Mott & Aguilar, 2007). According to Gersten, Gillman, Morvant, and Billingsley (1995), there is a substantial amount of individualism and isolation amongst teachers in most schools in the United States which creates a work culture of competition, lack of sharing, and insecurities. Similarly, Huffman and Kalnin (2003) highlight that an isolationist and competitive climate exists in most U.S. schools. According to Darling-Hammond (2010), the K-12 U.S. educational system has produced a work environment where teachers work in isolation with little time for teachers to collaborate in planning lessons and sharing their knowledge as well as little time for solving problems of practice. According to Gerstein (2009), faculty in community colleges are also quite isolated, and a common concern for newer faculty as well as seasoned faculty is their sense of isolation. Furthermore, this isolation found amongst college instructors limits efforts to improve instruction since valuable knowledge on teaching practices is not shared with other instructors (Cerbin & Kopp, 2006). There could be many reasons for this isolation such as a heavy community college faculty teaching load, scheduling, the focus on accountability and productivity as well as other reasons (Gerstein, 2009). According to Darling-Hammond and Richardson (2009), school structures limit collaboration yet individualistic norms in schools also make collaboration challenging. Moreover, it is very difficult and challenging to shift the isolationist culture of schools to a more collaborative culture (Gersten et. al., 1995).

Outcomes of Quality Preparation and Professional Development

Most would agree that effective training and educational preparation as well as professional development constitute the primary means for developing, maintaining, and progressing the success of a profession. For this reason, it is no surprise that some of the highest performing elementary and secondary educational systems in the world value teacher preparation and professional development through requiring the highest level of training and educational preparation for instructors as well as providing the most time and support for instructors to partake in continuous and collaborative professional development. Finland and Japan serve as great examples of these high performing educational systems that value teacher learning. According to the Program for International Student Assessment (PISA), in 2009 results on the assessment of fifteen year old students in 65 countries in the areas of mathematics, science, and reading literacy, Finland and Japan ranked in the top 5 highest performing countries for each category. Finland was first in science literacy, and second in mathematics and reading literacy. Japan was second in science literacy, fourth in mathematics literacy, and fifth in reading literacy. According to Sahlberg (2011), Finland provides rigorous teacher education programs and work time for teachers to prepare for teaching and collaboratively plan with colleagues. In fact, teachers in Finland devote less time to teaching than teachers in many other nations, but more time to collaboratively improving their teaching practice (Sahlberg, 2011). In fact, Finnish schools provide time for professional development during the teachers' work day (Darling-Hammond, 2010).

Likewise, Lesson Study, a collaborative teacher-driven approach to learning from practice (Lewis, Perry, Foster, Hurd & Fisher, 2011), has been the centerpiece of

Japanese teachers' professional development since the 1990s (Puchner & Taylor, 2006). Many who have studied the Japanese educational system, have identified Lesson Study as a key factor for the success of Japanese students and their teachers (Lewis & Tsuchida, 1999; Stigler & Hiebert, 2009). Darling-Hammond (2010) contends that Japanese teachers, very much like South Korean teachers, only spend 35% of their working time actually teaching students and much of their remaining work time is dedicated to collaboratively improving their practice. Teachers in nations with high-achieving educational systems spend 40 to 60% of their time preparing and learning to improve their teaching, and the amount of teaching time in countries such as Japan is even lower at the secondary level in order to give teachers more time to collaboratively develop their teaching practice (Darling-Hammond, 2010). Stigler and Hiebert (2009) contend that high achieving countries have in common a value and practice of improving student learning through substantial teacher learning, and one key to Japan's success in education is its commitment to Lesson Study which allows instructors consistent opportunities to collaboratively study their own teaching and student learning as well as improve their teaching.

Nevertheless, we do not have to look overseas to understand the benefits of teacher professional development and collaborative learning to increase student achievement. Darling-Hammond (2010) highlights Connecticut and North Carolina as states that improved their student achievement through raising standards for teacher education and licensing as well as implementing an ongoing intensive professional development training program. Connecticut and North Carolina created professional development opportunities in which schools partnered with universities to provide

learning experiences that appeared to allow instructors to collaborate in improving their practice.

Lesson Study

History and Key Characteristics

Lesson Study (LS) has been the dominant form of professional development for teachers in Japan for a long time, and it has been spreading into the United States K-12 educational system since 1999 (Lewis, Perry, Hurd, & O'Connell, 2006; Lewis, Perry, & Murata, 2006). Many who have studied Japanese education have identified Lesson Study as a key factor in the success of Japanese teachers and their students (Lewis & Tsuchida, 1999; Lewis, 2000; Lewis, Perry, & Murata, 2006). Stigler and Hiebert (2009) attribute Japan's high achievement in education to Lesson Study's process of enabling instructors to learn to teach by treating teaching as an object of study where instructors improve teaching through careful study of what works and does not work in student learning. Darling-Hammond (2010) describes Lesson Study as a collaborative approach to inquiry about practice "which involves teachers jointly crafting a lesson, observing while a colleague teaches it, then studying student responses and learning evidence to refine the lesson further" (p. 200). Similarly, Fernandez and Chokshi (2002) describe Lesson Study as a "Japanese professional development process that enables teachers to systematically examine their practice in order to become more effective instructors" (p. 128). Although there may be a variety of iterations of Lesson Study, it appears to have some basic shared features where three to six instructors collaborate to:

- identify a student learning goal or focus for the lesson

- devise a detailed lesson plan focused on the students' experience and their learning as well as a plan for gathering evidence on student learning
- teach the lesson, observe and gather evidence: one instructor teaches the lesson while the other instructors observe the lesson while focusing on student learning
- debrief, analyze and discuss the lesson as well as their findings from the observations and student work
- revise the lesson
- repeat the lesson study research cycle: reteach and observe the revised lesson as well as debrief and discuss the revised lesson (Audette, 2004; Cerbin, 2011; Fernandez, 2002; Fernandez & Chokshi, 2002; Puchner & Taylor, 2006; Lewis & Tsuchida, 1999)

Other Lesson Study experts identify the same features except for the repeat of the lesson study cycle (Lewis, Perry, Hurd, & O'Connell, 2006).

Benefits of Lesson Study

There are many beneficial outcomes and positive features attributed to the practice of Lesson Study: (1) improved collaboration and collegiality amongst instructors, (2) increased instructor self-efficacy, (3) increased development of instructors as researchers that produces a culture of learning from practice, (4) improved in-depth reflection by instructors regarding their instructional practices and how students learn, (5) greater amount of leadership by instructors regarding their professional development, and (6) an increased shared body of professional knowledge regarding teaching practices. These features of Lesson Study appear to be associated with increased student achievement and instructional development.

Collaboration and collegiality. Lesson Study is intrinsically collaborative since teachers work together to develop effective student learning experiences and teaching practices (Audette, 2004; Cerbin & Kopp, 2006; Chokshi & Fernandez, 2004; Lewis, Perry, Foster, Hurd, & Fisher, 2011; Lewis & Tsuchida, 1999). The practice of Lesson Study has been associated with increased teacher collaboration (Puchner & Taylor, 2006; Rock & Wilson, 2005). Using a collective case study methodology, Puchner and Taylor (2006) discovered that LS led teachers to engage and collaborate in a new type of talking about teaching and learning. Moreover, the development of lessons is a surface feature whereas the underlying feature that is really important in LS is the socio-emotional and cognitive impact of teachers learning from one another in a collaborative process (Lewis, Perry, Hurd, & O'Connell, 2006; Puchner & Taylor, 2006). In the qualitative study by Rock and Wilson (2005), one of the major themes that emerged was the importance of peer collaboration in learning new approaches to instructional practices and gaining a better understanding of students. Similarly, a school culture of teacher collaboration has been associated with fostering professional development, teacher satisfaction, and teacher effectiveness as well as student achievement (Clement & Vandenberghe, 2000; Gersten et al., 1995; Huffman & Kalnin, 2003; Lee, Dedrick, & Smith, 1991). The study by Taylor, Anderson, Meyer, Wagner, and West (2005) also reveals that participants in Lesson Study develop improved collegiality.

Self-efficacy. The practice of Lesson Study has been associated with increased teacher self-efficacy (Puchner & Taylor, 2006; Rock & Wilson, 2005; Sibbald, 2009). In their study, Puchner and Taylor (2006) revealed that teachers were amazed to experience student engagement and learning that they had not previously experienced as a result of

their participation in LS and their in-depth examination of their teaching practice. Teachers perceived their desired teaching outcomes and impact on student learning to be in their control as well as within their reach. The qualitative study by Rock and Wilson (2005) revealed that participants experienced increased confidence in their instructional practices and roles as teachers. According to Sibbald (2009), the collaboration of instructors in Lesson Study broadens the content and pedagogical repertoires of instructors, thus increasing instructor self-efficacy. Moreover, improved teacher self-efficacy is associated with improved student achievement, and teacher efficacy is a reliable predictor of student achievement (Palardy & Rumberger, 2008; Ross, 1998; Ross, Bruce, & Hogaboam-Gray, 2006).

Culture of learning from practice/teacher as a researcher. The practice of Lesson Study facilitates instructors learning from their practice and classrooms or in other words their context (Audette, 2004; Fernandez, 2002; Lewis, Perry, Hurd, & O'Connell, 2006; Rock & Wilson, 2005). According to Chokshi and Fernandez (2004), the learning from Lesson Study is very concrete because the activities of LS are embedded in the realities of the classroom. In addition, Sibbald (2009) believes that the authentic contextual nature of LS as well as its capacity to allow instructors to address pedagogical practices and content knowledge within their particular context contributes to the success of Lesson Study. Furthermore, Fernandez (2002) states that "lesson study represents an example of a systematic and well-articulated process for examining practice that has no equally well-developed counterpart in the United States" (p. 393). Similarly, through Lesson Study teachers learn to improve teaching by treating teaching as an object

of study where they examine what works and does not work in regards to their teaching as well as student learning (Stigler & Hiebert, 2009).

Reflective. The practice of Lesson Study provides instructors with opportunities to reflect on and improve each other's thinking about student learning and their instructional practice (Audette, 2004; Lewis & Tsuchida, 1999; Lewis, Perry, Hurd, & O'Connell, 2006; Lewis et al, 2011; Rock & Wilson, 2005; Stigler & Hiebert, 2009). Lesson Study is a reflective practice where instructors examine and discuss a variety of important issues regarding instruction and learning (Cerbin & Kopp, 2006). According to Chokshi and Fernandez (2004) a unique and original lesson is not the driving force of Lesson Study but what is most important is that LS facilitates opportunities for instructors to think about their teaching. The focus of LS is on student learning as instructors anticipate student understandings and misunderstandings as well as observe student learning (Audette, 2004). Effective LS relies on instructors' discussion, thinking, and observation on how students think as well as testing their knowledge about student thinking and learning (Lewis, Perry, Hurd, & O'Connell, 2006; Lewis, Perry, & Murata, 2006). Moreover, Lesson Study allows instructors to push each other's thinking about student learning and their subject matter (Lewis, Perry, Hurd, & O'Connell, 2006). In addition, both novice and veteran instructors benefit from the reflection and examination of their teaching practice that takes place in Lesson Study (Lewis et al, 2011). Lesson Study empowers teachers to reflect on their practice in determining areas that need improvement and in practicing new instructional strategies (Audette, 2004). Lesson Study is a catalyst that encourages teachers to become reflective practitioners by using

what they learned from their research of instructional lessons to make improvements to future lessons and to the learning experience of students (Rock & Wilson, 2005).

Teacher directed. Lesson Study is teacher led since teachers choose learning goals and decide how to devise lessons as well as choose their teaching practices and methods of examining practice (Audette, 2004; Chokshi and Fernandez, 2004; Lewis, Perry, Hurd, & O'Connell, 2006). According to Puchner and Taylor (2006), one of the advantageous of LS as a form of professional development is that it is teacher driven. Teachers control the process in collaboratively examining issues of teaching and learning that are important to them (Cerbin & Kopp, 2006). Moreover, Lesson Study facilitates instructors' collaborative leadership which has an opportunity to increase the professionalism of instructors (Sibbald, 2009).

Shared body of professional knowledge. Lesson Study is a means for facilitating the creation of a body of shared professional knowledge (Chokshi and Fernandez, 2004; Fernandez, 2002; Fernandez & Chokshi, 2002; Lewis, Perry, Hurd, & O'Connell, 2006; Lewis, Perry, & Murata, 2006). Lesson Study groups can create reports on the summary of their studies which captures insights gained and a record of their research as well as conduct open houses so that instructors can learn from each other's work (Fernandez, 2002). The final lessons as well as records describing the experience in creating and facilitating the lessons are described in enough detail so that other instructors can adapt and apply the lesson in their own classrooms (Cerbin & Kopp, 2006).

Improvement in teaching and student learning. There currently does not exist any formal evidence that directly links instructors' participation in Lesson Study to

improved student achievement (Chokshi & Fernandez, 2004). However, Lewis and Tsuchida (1999) and others who have studied Japanese education highlight Lesson Study as the key factor that contributes to the success of Japanese teachers and their students. By engaging in LS, instructors develop and learn teaching practices from their collaborative examination of instruction and learning that they integrate into their daily teaching practice (Chokshi & Fernandez, 2004). Cerbin and Kopp (2006) emphasize that through the experience of LS, instructors do not just improve their instruction of one lesson but build their abilities and knowledge to improve teaching and learning in other classes and instructional settings. Studies such as those depicted by Audette (2004), Rock and Wilson (2005), Puchner and Taylor (2006) as well as Stewart and Brendefur (2005) demonstrate that Lesson Study could serve as a valuable professional development experience since instructors considered themselves to be more effective as a result of LS and perceived LS as positively impacting their instructional practice. There are also studies, such as the one depicted by Lewis, Perry, Hurd, and O'Connell (2006), that claim a causal connection between LS and student achievement results since LS appeared to be the primary difference between the professional development of higher performing and lower performing schools. "In essence Japanese lesson study is a broad-based, teacher-led system for improvement of teaching and learning" (Cerbin & Kopp, 2006, p. 250).

Alignment with Best Practices in Professional Development

Lesson Study is a professional development approach that satisfies many of the best practices identified by research as creating beneficial learning experiences for instructors. First, a key criteria for effective professional development is a sustained,

intensive, long-term professional learning experience (Darling-Hammond & McLaughlin, 1995; Desimone, 2011; Garet et al., 2001), and the practice of Lesson Study seems to satisfy this characteristic. The practice of Lesson Study is a time intensive process (Fernandez & Chokshi, 2002) that is intended to be a sustainable and long-term professional development experience (Fernandez & Chokshi, 2002; Lewis, Perry, Hurd, & O'Connell, 2006). Fernadez and Chokshi (2002) recommend that Lesson Study groups work on two or three study lessons per year, and each study lesson entails at least four weeks to plan the lesson, two observations, and two instructions of the lesson as well as two reflections and debriefs after each lesson is taught. Second, according to Desimone (2011) and Garet et al. (2001) effective professional development must focus on content knowledge. According to Lewis et al. (2011) as well as Lewis and Tsuchida (1999), Lesson Study provides a natural context for all Lesson Study group members to update their content knowledge as they implement new curriculum or apply new ideas from books or articles into action. Similarly, Lesson Study involves deepening teachers' knowledge of content they will teach as well as learning strategies to effectively teach the content. Third, effective professional development must provide instructors with active and hands-on learning opportunities (Darling-Hammond & McLaughlin, 1995; Desimone, 2011; Garet et al., 2001). Through the practice of Lesson Study, instructors plan lessons, observe instruction, teach research lessons as well as discuss and reflect on lessons (Fernandez, 2002; Fernandez & Chokshi, 2002; Lewis at el., 2011; Lewis and Tsuchida, 1999). All these activities found within Lesson Study are very hands-on and active as well as embedded within the instructors' practice of teaching. Fourth, effective professional development must be integrated into the daily life of the school and provide

coherence (Darling-Hammond & McLaughlin, 1995; Desimone, 2011; Garet et al., 2001). One of the benefits of Lesson Study is that professional development is aligned within the context of the particular school's curricular goals (Puchner & Taylor, 2006; Stigler & Hiebert, 2009). A fifth best practice regarding effective professional development is that it must allow teachers to collaborate together (Darling-Hammond & McLaughlin, 1995; Desimone, 2011; Garet et al., 2001). One of the key elements of Lesson Study is instructor collaboration (Audette, 2004; Lewis et al., 2011; Stewart & Brendefur, 2005). Moreover, the practice of Lesson Study is believed to be an effective professional development experience as a result of its ability to assist teachers to work more collaboratively (Puchner & Taylor, 2006). Finally, effective professional development programs are faculty-driven (Murray, 2002). Lesson Study is very much faculty-driven because instructors choose the theme and goals of the lesson, create the lesson as well as devise ways to evaluate learning (Audette, 2004; Chokshi & Fernandez, 2004; Lewis et al., 2011; Lewis, Perry, Hurd, & O'Connell, 2006; Puchner and Taylor, 2006). Lesson Study incorporates the key elements necessary for an effective professional development program.

Guiding Theories

Social Construction

Principles from the theory of social construction integrate well into the Lesson Study process, and according to Rock and Wilson (2005), the social constructivism theory appears to provide support for Lesson Study as a potential method for increasing the professional knowledge of instructors. One of the primary principles of social construction stresses the co-creation of knowledge and that knowledge is created through

relationships as well as their by-products of social interactions (Gergen, 2009). "Understandings of the world are achieved through coordinations among persons – negotiations, agreements, comparing views, and so on" (Gergen, 2009, p. 6). This seems to support Lesson Study as a potentially effective method for instructors to create knowledge since one of the primary features of Lesson Study is that it is collaborative. Instructors are collaborating throughout the Lesson Study cycles in activities such as choosing learning goals, devising lessons, teaching, and observing as well as discussing and revising lessons. Moreover, all these Lesson Study activities require social interaction amongst the instructors as they negotiate, compare views, and analyze information together in order to come to agreement concerning the decisions, actions, and learning that takes place in Lesson Study. Gergen (2009) asserts that collaborative relationships and dialogue are the main source of inspiration and action with groups. The collaboration and discussions in Lesson Study have the potential of fostering positive actions amongst instructors as well as inspiring them to improve their practice and the learning experience for students.

Another primary principle of social constructivism is that knowledge is the result of active mental processing by a person in a social environment (Cobb & Yachel, 1996; Prawat, 1996). Another primary feature of Lesson Study is that it requires in-depth reflection for it to be effective. Throughout the Lesson Study experience, instructors are mentally reflecting and analyzing together regarding how to improve their instructional practices as well as how to improve student learning. For example, instructors could be reflecting together on such facets as what instructional strategy to utilize to help students learn a particular concept or what gap in student learning the group should focus on as a

goal for Lesson Study. Lesson Study groups would not be able to move through each step of the Lesson Study cycle successfully without the consensus of knowledge that takes place when individual reflections and thoughts are shared and discussed within the larger group.

Self-determination Theory

Self-determination theory asserts that in order for people to acquire high quality development and performance as well as motivation for a task, their psychological needs of competence, autonomy, and relatedness must be satisfied (Deci & Ryan, 2000). In general terms, competence is described as succeeding in what you do, relatedness is described as connecting with others, and autonomy is described as being in control of your life. The process of Lesson Study appears to satisfy these three psychological needs which according to this theory, Lesson Study may have the potential of producing high quality instructor development and performance. Through Lesson Study instructors are improving their instructional practices which in essence means that instructors are acquiring improved competence in their practice. In addition, through Lesson Study instructors are collaborating and building collegiality with other instructors which in essence means that instructors are connecting with each other. Furthermore, Lesson Study provides some autonomy to instructors as they choose their learning goals and devise their lessons and instructional activities. Moreover, Lesson Study is teacher driven which provides instructors autonomy from administratively sanctioned professional development. One could argue that Lesson Study is not completely autonomous because decisions are made collaboratively in the group and not individually. However, without collaboration, the psychological need of relatedness may

not be satisfied, and according to Gergen (2009), collaboration and social interaction are essential to the construction of knowledge. The self-determination theory could also be used as a guiding theory for the Lesson Study participants as they attempt to improve the learning experience for students. Lesson Study instructors could attempt to create lessons that would satisfy the three psychological needs for students in order to motivate them and produce high quality development and performance. Moreover, according to Gergen (2009), monologues such as lectures and PowerPoints are very impersonal and do not allow students an opportunity to discuss and co-construct knowledge. Students must be able to collaborate in constructing knowledge which is very much related to the self-determination theory key psychological factors of relatedness and competence.

Literature Review Summary and Alignment with Purpose of Study

The researcher is able to contribute to the important task of improving developmental education through the first-year college success course that his division is responsible for teaching to students testing into developmental education college courses. Research has associated the college success course with student achievement, and the college success course integrates well into many of the most promising practices for positively revamping developmental education. In order to improve the impact that the college success course has on student achievement, the researcher implemented the Lesson Study professional learning experience with instructors teaching the first-year college success course. There is much support for the premise that effective teacher learning has the greatest significant impact on student learning from researchers and educators as well as from examples of high performing K-12 educational systems. Lesson Study satisfies many of the core features associated with effective professional

development. In addition, there are also many qualitative studies and a few mixed method studies in primarily elementary education that reveal an association with Lesson Study and factors such as instructor collaboration and self-efficacy that are linked with successful outcomes of teacher learning and student achievement. However, there are a limited amount of studies and research on the impact of Lesson Study on college instructors as well as college instructors' experience of Lesson Study. This researcher utilized social construction theory to guide and make sense of this study since the principles of social construction integrate well into the Lesson Study innovation and are aligned with hypothesis on how individuals construct knowledge and learn. In addition, the researcher utilized self-determination theory as a supporting theory to guide and make sense of the study since the development and performance of instructors as well as students requires the key component of motivation. Social construction theory and self-determination theory are not conflicting theories because they have in common the key element of collaboration which helps to interweave these two theories in a beneficial manner for the study. The researcher will contribute to the literature on Lesson Study with a unique focus regarding Lesson Study's influence on college instructors who are teaching developmental education students.

Chapter 3: Methods

Methodological Approach

The primary focus of this study is to explore the effect that the Lesson Study innovation has on the college success course instructors' thoughts, feelings, and actions in regards to their teaching practice as well as on their collaborative knowledge building and reflection. In essence, the researcher is attempting to explore how counseling faculty experience their teaching practice and their work environment as a result of participating in Lesson Study. A secondary focus of this study is to explore if the Lesson Study innovation impacts the college success course instructors' self-efficacy for teaching. A tertiary focus of this study is to explore possible changes in teaching strategies and practices that instructors may learn or develop from participating in Lesson Study. This chapter describes the methods that were used to answer each of the following research questions:

- How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?
- How, and to what extent, will Lesson Study impact the self-efficacy of the college success course instructors?
- What changes in their instructional practices did the college success course instructors make as a result of participating in Lesson Study?

The focus of the primary research question was to explore the participants' perspectives and feelings as well as subsequent behaviors as they experience Lesson Study in their professional roles as instructors. How, and to what extent counseling

faculty making meaning of their teaching practice during Lesson Study could include diverse facets of their experience such as their thoughts, feelings, and behaviors in the following areas: 1) collaborative knowledge building, 2) reflection on instructional practices, 3) relationships with counselor colleagues, 4) relationship with students, 5) connection to their instructional role, 6) approaches to lesson planning, and 7) approaches to instruction. The researcher explored the contributions that Lesson Study has on the college success course instructors' collaborative knowledge building, reflection on their practice of teaching, relationships with colleagues and students, connection to their instructional role, and approach to planning and teaching. Essentially, the researcher is attempting to discover the contributions that Lesson Study has on the teaching culture of the counseling faculty. The secondary research question more specifically focuses on the counseling faculty's beliefs about their ability to successfully teach new-to-college developmental education students strategies to succeed in college. The researcher explored the contributions that Lesson Study had on the college success instructors' confidence in regards to their ability to improve and master challenging aspects of their teaching practice in order to positively impact developmental education student achievement. The third research question explored possible changes in instructional strategies or practices that were learned or gained through participating in Lesson Study. The researcher explored whether instructors were able to transfer what they learned through the Lesson Study experience to their instructional practice.

Action Research

The researcher engaged in action research in order to implement the Lesson Study innovation and gather data regarding whether or not the innovation improved the

instructors' teaching practice. Stringer (2007) describes action research as an empowering means by which people collaboratively take initiative to increase the effectiveness of their practice in which they are engaged on daily basis as well as find effective solutions to problems they confront in their daily work. Action research is a systematic process of investigation conducted by practitioners to gather quantitative and qualitative data to improve: (1) the ways their professional settings operate, (2) their practice, and (3) their impact on others (Plano Clark & Creswell, 2010). The researcher's intention for implementing Lesson Study was that he expected that this experience would change how the first-year college success instructors' professional setting operates by creating opportunities for instructors to participate in collaborative professional learning and knowledge building versus working as isolated professionals. In addition, the researcher hoped Lesson Study, by fostering collaborative knowledge building and reflection, would positively impact the instructors' teaching practice and consequently also impact the students that they teach by improving their academic achievement.

Although all of the first-year college success instructors possess a master's degree in counseling and practical training developing their counseling professional practice, many of these instructors have not received any formal education in teaching and have a limited amount of formal training dedicated to improving their practice of teaching. Only two of the six current full-time ACC counselors teaching the college success course completed a formal training in teacher education receiving a bachelor's degree in education, and only one of these two counselors entered the field of education receiving additional training as an elementary education instructor. Likewise, a majority of the part-time ACC counselors do not possess a degree in education. Moreover, college

instructors in the Community College District of ACC are not required to complete any formal professional development to enhance their practice of teaching except for a three credit hour college course that introduces instructors to the community college system and provides some instructional practices. The researcher hoped that Lesson Study would provide the counselors with professional development in instruction to increase their effectiveness as teachers as well as to mitigate any deficiencies as a result of a lack of teacher training.

Furthermore, Herr and Anderson (2005) emphasize that action research is inquiry that is performed by or with participants in the researcher's context, but action research is never done to or on the participants. Through this Lesson Study experience, the first-year college success instructors participating in the study were directly involved in creating and shaping the Lesson Study experience. The researcher together with the instructors facilitated the Lesson Study professional learning experience.

This action research study seems to follow the action research traditions of the teacher-as-researcher movement that occurred in the United Kingdom and North America. According to Fernandez and Chokshi (2002), "Lesson study (jugyoukenkyuu) is a Japanese professional development process that enables teachers to systematically examine their practice in order to become more effective instructors" (p. 128). Through the practice of Lesson Study, instructors collaborate in devising lessons, teach and observe their lessons, as well as evaluate the impact that these lessons have on student learning. According to Zeichner (2001), the teacher-as-researcher movement emphasized teaching as a reflexive practice in which change was dependent on teachers' capacities for reflection. Moreover, the teacher-as-researcher movement empowered instructors to

implement an inquiry approach to teaching (Herr & Anderson, 2005). Similarly to the teacher-as-researcher movement, lesson study is a teacher-led process that is founded on reflection and inquiry. Teachers are responsible for assessing and improving their practice. In addition, the British teacher-as-researcher movement arose in response to student dissatisfaction in British secondary schools and instructors desiring to improve their practice (Zeichner, 2001). Likewise, the practitioner research movement in North America began as a result of teachers desiring to take more ownership for bettering their teaching practice and decreasing the influence of those outside their context (Herr and Anderson, 2005). The researcher's Lesson Study action research study also arose as a result of instructors wanting to improve their practice and create engaging learning environments for students. The teacher-as-researcher tradition is similar to the researcher's Lesson Study innovation because they both can be described as teachers taking ownership for improving their practice through reflection and inquiry.

Research Design

Action research can utilize either quantitative or qualitative methods or both (Plano Clark & Creswell, 2010). In this study, the researcher used a mixed methods triangulation (concurrent) design where he collected both qualitative and quantitative data at about the same time, analyzed both datasets separately, and then compared the results from the analysis of both datasets (Plano Clark & Creswell, 2010). Similarly, according to Creswell (2009), the researcher utilized a concurrent mixed methods triangulation design where the researcher collected both quantitative and qualitative data concurrently and then compared the results from the two databases during the interpretation or discussion stage. By using the triangulation (concurrent) mixed methods design, the

researcher was attempting to receive a deeper and more robust understanding of the phenomenon (Plano Clark & Creswell, 2010). The researcher mixed methods for the purpose of complementarity. According to Green (2007), through complementarity the researcher uses multiple methods to explore different aspects of a phenomenon in order to enhance and deepen the overall inferences from the study. The researcher believed that the use of only one data collection design would not provide him with a comprehensive understanding of the impact of Lesson Study in his context. According to Creswell (2009), the researcher was attempting to use two methods as a means to offset the weaknesses found in one method with the strengths of the other.

Since action research is fundamentally grounded in qualitative research whose primary purpose is to seek greater understanding of an issue (Stringer, 2007), this study gave more emphasis and priority to the qualitative method (QUAL-quant). According to Stringer (2007), in action research, quantitative methods can be utilized to support understanding in a study, but quantitative methods never form the primary method of investigation. The researcher utilized quantitative methods in his study to support the qualitative findings and bring further clarity to the research questions. The strengths of the quantitative methods allowed the researcher to view the phenomenon from a different perspective and provided a better understanding of the qualitative data thus increasing the validity and credibility of the findings. According to Plano Clark and Creswell (2010), qualitative researchers triangulate or use different types of data to corroborate evidence thus enhancing the accuracy of a study. The use of both qualitative and quantitative methods in this action research study is a form of triangulation that enhances the accuracy of the study.

Setting

This study took place in the Counseling Services Division at a public community college (ACC) in the southwestern part of the United States. Achieve Community College is a two-year college that offers both academic two-year associate degrees for students desiring to transfer to the university as well as two-year occupational associate degrees and certificates for students wanting to enter the workforce. According to the SCC Office of Institutional Research, Planning, and Development 2011-2012 Fact Book (2012), Achieve Community College serves approximately a total of 10,500 students during the Fall and Spring semesters combined that would be considered Full-Time Student Equivalent (FTSE), meaning these students are all taking a total of fifteen credit hours. Total headcount of students for a year would be approximately 21,000 students. Approximately, 52% of the students attending ACC are female and 48% male, and the average age of a student is 26. Students attending ACC represent the following ethnic groups: 68% White, 11% Hispanic, 5% American Indian, 4% African American, 4% Asian/Pacific Islander, 1% other, and 7% unknown. In addition, approximately 41% of the students attending ACC are considered first-generation college students.

Moreover, there are many students attending ACC who are underprepared for college level writing, reading, and mathematics courses. According to the SCC Office of Institutional Research, Planning, and Development 2011-2012 Fact Book (2012), 73% of students entering ACC tested into at least one developmental education course during the Fall 2011 semester. Sixty-six percent of these students tested into a developmental mathematics course, 33% tested into a developmental reading course, and 21% tested into a developmental English writing course (SCC, 2012). In order to increase the retention

and persistence of these developmental education students, ACC mandated that all students testing into one or more developmental education courses enroll in a SCS100 Strategies for College Success course. As a result, the SCS100 first-year college success course is predominately composed of students who are underprepared for college studies. Many of these students did not perform well academically in high school.

Participants

In this study, the researcher used a purposeful sample for an in-depth understanding of the researcher's specific context (Greene, 2007). The researcher purposefully chose two instructors with whom he was familiar that had the most amount of experience with Lesson Study having participated in three LS cycles during the Fall 2012 and Spring 2013 semesters so that the researcher could form a Fall 2013 Lesson Study group composed of these two instructors and two or three other instructors new to Lesson Study or with a limited amount of experience with Lesson Study. Although the researcher purposefully chose the two instructors that he knew with the most amount of Lesson Study experience from the Fall 2012 LS group, they were the only two instructors from a total of four instructors from the Fall 2012 group who were available to participate in the Fall 2013 LS cycle. One of the instructors could no longer participate in Lesson Study because she changed her employment from a full-time role to a part-time role. The other instructor was unable to participate in the Fall 2013 Lesson Study because the Division Chair of Counseling Services requested another full-time experienced counselor to be available for counseling coverage during the LS meetings. Although the researcher was able to select the two instructors that he was aware of with the greatest amount of Lesson Study experience, the researcher had to rely on a convenience sample to select the

remaining instructors since only a few were available to commit to and participate in the scheduled LS meetings. The researcher invited all remaining current part-time SCS100 instructors to participate in the Lesson Study experience, and three were able to participate. The final Fall of 2013 LS group consisted of two instructors who had previously experienced three LS cycles, two instructors who had previously experienced one LS cycle, and one instructor with no previous experience with Lesson Study.

SCS100 College Success Instructors

The participants in the Lesson Study innovation were two permanent full-time counselors, one temporary one-year-only full-time counselor, and two adjunct part-time counselors that all taught the SCS100 first-year college success course during the Fall 2013 semester to developmental education students. These five counselors participated in two cycles of Lesson Study where they created two lessons together, taught and observed these research lessons, debriefed and revised these lessons, and then retaught these lessons. The Community College District of ACC established faculty minimum qualifications requiring all counselors to possess a Master of Counseling degree and have completed the following courses within their graduate study: 1) Counseling Theories and Techniques, 2) Group Counseling, 3) Career Counseling, 4) Testing and Measurements, 5) Personality Theories or Human Development, and 6) Individual Analysis. The counselors all have over six hundred hours of internship and/or practicum experience providing counseling and many have completed sixty credit hours of graduate work. All of these counselors, except for the part-time counselor new to Lesson Study, were not only involved in teaching the first-year college success course but also provided individual personal, career, and educational counseling to students. In addition, they

provided consultation to faculty and staff regarding student disruptions and the well-being of students. Counselors have very busy and stressful schedules that do not afford much time for preparing for instruction. In the first-year college success class, counselors are teaching predominately students who have tested into at least one remedial education courses. Many of these students were not successful high school students and some have learning disabilities.

For the purposes of this study, the researcher did not identity participants' ethnicity or gender since these were not variables in the study and this approach would provide a greater amount of confidentiality. Participant A worked as a temporary part-time instructor for the college. Participant A was the least experienced instructor having only taught one SCS100 course at the start of the study. Participant B had worked as a temporary part-time instructor/counselor for the college, but had many years of counseling experience outside the collegiate setting. Participant B had taught the SCS100 course fifteen times. Participant C was hired as a permanent full-time counselor at the start of the study although Participant C had been working as a counselor outside the collegiate setting for a substantial amount of time. Participant C had less experience teaching the SCS100 course, having taught this course only seven times. However, Participant C had the greatest amount of teaching experience having taught communication courses at the college for many years and had taught 131 more credits than the participant with the second highest amount of credits. Participant D had two and a half years serving as a temporary full-time counselor at the start of the study. Participant D entered the counseling field after having worked many years in another field. Participant D had experience teaching the SCS100 course having taught the first-

year college success course fifteen times. Participant E had been working as a manager in the Community College District of ACC for many years and possessed one year of permanent full-time counselor experience at the start of the Fall 2013 semester. Participant E had experience teaching the SCS100 course, having taught the first-year college success course twelve times. Participant E also had some formal training in education because she completed a bachelor's degree in Special Education.

Table 1

SCS100 Instructors' Experience

Teacher Pseudonym	# of Semesters working part-time	# of Years Serving as a full-time College Counselor	# SCS100 First-Year College Success Courses Taught	# of Total Credits Taught	Formal Teacher Education Training	# of Lesson Study Cycle Previous Experience
Instructor A	1	0	1	3	None	0
Instructor B	6	0	15	48	None	1
Instructor C	10	0	7	180	None	1
Instructor D	2	2.5	15	45	None	3
Instructor E	2	1	12	49	B.A.E	3

Developmental Education Students

There are approximately 22 to 25 students in each SCS100 first-year college success course, and a majority of these students tested into at least one remedial writing, reading, or mathematics course. Achieve Community College mandates that all students testing into one or more developmental education courses must enroll in a SCS100

course, and as a result, many of the students in the SCS100 classes are considered developmental education students. Consequently, a majority of the students in the SCS100 course are underprepared for college in regards to their writing and reading levels as well as not having had much academic success in high school. Students attending ACC have very similar characteristics to students attending other community colleges in the United States. According to Fike and Fike (2008), community college students have distinct qualities when compared to university students. Community colleges have a greater amount of adult, minority, underprepared, and first-generation students as well as a greater amount of students who attend part-time while working and who come from lower socioeconomic backgrounds (Fike & Fike, 2008). A total of 252 students enrolled in the ten SCS100 courses at the start of the Fall 2013 semester and received instruction from the counselors participating in Lesson Study and completed student surveys. According to SCC Office of Institutional Research, Planning, and Development (2013), these students had the following characteristics: 42% of these students were female, 56.9% male, and 1.2% unspecified. A majority of these students were 17-20 years old, consisting of 81.6% of the student population in these ten classes. Of the remaining students 0.8% were sixteen years old, 13.1% were 21-29 years old, 2.8% were 30-39 years old, 1.6% were 40-49 years old, and 0.4% were 56 years old. Students enrolled in the ten SCS100 classes represented the following ethnic groups: 54.9% White, 18% Hispanic, 9% American Indian, 7.8% African American, 2% Asian/Pacific Islander, 0.4% other, and 7.8% unknown. In addition, 42.7% of the students were considered first generation college students. Twenty percent of the students tested into 3 developmental education courses, 31.4% tested into two, 42.7%

tested into one, 4.7% did not test into developmental education, and 1.2% never completed the assessments. There were some significant differences in characteristics between the students in these ten SCS100 classes versus the overall population at the college. The students in these ten SCS100 classes were more ethnically diverse consisting of 54.9% White versus 68% White for the general population as well as much younger in age with the average age being 19 in these ten classes versus 26 for the general population. In addition, the students who were participating in the study were much newer to college, only 41.2% had previous college experience whereas 67% of the general population had previous college experience.

Action Researcher

The action researcher served as a facilitator and participant in the Lesson Study innovation. The researcher facilitated each step of LS cycles as well as participated in the Lesson Study process. According to Stringer (2007), in action research the role of the researcher is to act as a consultant or facilitator who assists the participants in defining their problems and supports them to work together in devising effective solutions to the issues they encounter in their daily practice. Not only did the researcher facilitate and participate in Lesson Study, but he was also the researcher responsible for designing the action research study, collecting the data, and analyzing the data. In order to effectively negotiate these roles of researcher, facilitator, and participant, the researcher needed to understand the complexity of these roles and clearly define how these roles were integrated in his action research study. Moreover the researcher communicated the complexity of his role to the participants in order to assist them with understanding how the researcher's role impacted them. As a researcher and colleague to the participants in

this action research study, the researcher was explicit in sharing with his colleagues how the information provided by them would be collected, stored, and communicated to others as well as how he would take every step to maintain confidentiality. For example, the researcher informed the participants how the data collected that identified them, such as videos, would be secured and then disposed of at the completion of the study. However, the researcher also informed participants of any foreseen limits to confidentiality. For example, the researcher informed the participants that he would use pseudonyms for each participant in order to attempt to keep their responses as anonymous as possible even though those familiar with the participants in the study may be able to identify the participants because the study is composed of a very small group of individuals. By explicitly sharing information regarding how the participants' information would be collected, stored, and communicated, the researcher provided the participants with an understanding of any limits to confidentiality that were out of the researcher's control. This forthright approach to communicating issues of confidentiality and anonymity as well as explaining the researcher's complex role was very much aligned with the premises of action research since action research is a collaborative process that informs participants and empowers them to actively be involved in the study.

The researcher possesses a Master of Counseling degree and has worked at Achieve Community College for the past eleven years as a permanent full-time faculty member in Counseling Services. Previous to his position as a counselor, he worked as a program advisor in the Office of Multicultural Services at another community college within the district. As a counselor at Achieve Community College, the researcher teaches Counseling and Personal Development courses such as Strategies for College Success

and Career Exploration. The researcher also provides individual counseling to students to assist them in achieving their personal, career, and educational goals. In addition, he provides consultation to faculty and staff regarding student disruptions and the well-being of students. The researcher is viewed as a leader in the division, as a result of having the most years serving as a counselor in the division and having served in leadership roles for the division such as previous Division Chair of Counseling Services and currently serving as the Senator for the Division in the Faculty Senate.

Innovation

Previous Lesson Study Pilot Studies

During the Fall 2012 semester, the researcher piloted the implementation of the Lesson Study innovation with three permanent full-time counselors and one temporary full-time one-year-only counselor who were teaching the first-year college success course. The researcher completed two cycles of Lesson Study. The Lesson Study innovation was implemented using the steps outlined by Stepanek, Appel, Leong, Mangan, and Mitchell (2007) where a group of instructors collaboratively work together to: (1) select a theme and goals for the lesson, (2) plan and create a lesson, and (3) teach, observe, and debrief the lesson. During the first week, the researcher began by sharing the purpose of Lesson Study and how it was aligned with the counselors' needs and values. Prior to conducting the pilot study, through informal interviews and conversations with counselors, the researcher witnessed that many counselors complained that there was no time for collaboration and the sharing of creative ideas and knowledge. The researcher learned that counselors felt very isolated in their professional practice. In addition, counselors complained that some students in their first-year college success

course were not engaged and motivated, and they wanted to learn new ways to engage and motivate these students. The researcher emphasized to the counselors that the Lesson Study professional learning experience addressed many of their concerns by fostering an environment where instructors could collaborate together in sharing knowledge and improving their practice in order to increase student achievement and engagement.

In their professional learning community, the LS group chose engagement as their overall theme for the semester as well as the topic of test-taking for their first lesson study. They dedicated two hours a week for five weeks to creating the lesson and activities that would engage students in learning test-taking strategies. The LS group then dedicated two hours during the sixth week to create the observation protocol and survey used to assess engagement. Finally, one of the instructors taught the lesson that the group collaboratively created to a first-year college success course while the other counselors utilized the observation protocol to capture students' behaviors. The final week of the first LS cycle was dedicated to a debriefing of the lesson and discussions on how the lesson impacted student engagement and learning.

After the completion of the first cycle of Lesson Study, the researcher conducted a focus group interview with the counselors participating in LS using questions that were created by the researcher. The researcher asked open-ended questions to provide an opportunity for participants to share and describe their experience with Lesson Study as well as to share recommendations for improving the LS professional learning experience. As a result of the focus group interview, changes were collectively implemented in the Lesson Study experience. For example, time was allotted during planning meetings to allow participants to be creative in searching for or devising activities and tools that they

would then share with the group to possibly utilize in the instruction of the next lesson. After the completion of the focus group interview and the first cycle of Lesson Study, instructors participated in a second cycle of Lesson Study which entailed five weeks of planning a lesson on goal setting, one week of teaching, observing and debriefing the lesson, and one additional week discussing how the lesson impacted student engagement and learning. A second focus group interview was facilitated by the researcher in order to discuss the LS experience as well as how to continue to foster Lesson Study in this work environment. Instructors provided positive feedback regarding the LS experience and suggestions for using Lesson Study to improve the teaching practice and culture of their environment. The researcher's role in the innovation was as a participant as well as a facilitator of the LS professional learning experience.

During the Spring 2013 semester, the researcher facilitated one more cycle of Lesson Study at the request of counselors on the topic of critical thinking. Three of the previous full-time counselors and two part-time counselors new to Lesson Study participated in six weeks of planning a lesson on critical thinking, one week of teaching, observing and debriefing the lesson, and one additional week discussing how the lesson impacted student engagement and learning.

Current Lesson Study Process and Steps

The LS group completed two cycles of Lesson Study: the first cycle on the topic of note-taking and the second cycle on the topic of diversity. The Lesson Study innovation was implemented using the LS cycle outlined by Cerbin (2011) where instructors collaboratively worked together to: (1) select a theme and formulate learning goals, (2) plan and create the lesson, (3) plan how to study the lessons, (4) teach, observe,

and gather evidence, (5) debrief, analyze, and revise the lesson, (6) repeat the cycle, and then (7) document and disseminate Lesson Study findings. The researcher facilitated the Lesson Study process with fidelity to the LS cycle outlined by Cerbin (2011) as well as Cerbin and Kopp (2006). In step one of the cycle, the researcher had instructors consider the ideal qualities that they want students to display after completing the course, the actual qualities displayed, and the gap between the ideal and actual in order to identify the theme which was determined to be engaging student in authentic learning. The researcher then directed the instructors to choose a topic that was difficult to teach, boring for students, or of interest to the instructors. The instructors chose the topic of note-taking because it was difficult to teach and boring to students as well as the topic of diversity because they wanted to find an interesting way to teach this lesson. Then the researcher facilitated a discussion where instructors identified important components of the lesson as well as identified student learning goals for the lesson. The researcher directed instructors to create learning goals that were concrete, observable, and focused on what students should be able to do or should know after the lesson.

In step two, the researcher facilitated the collaborative discussion of the instructional design. When facilitating the creation of the lesson, the researcher always directed the instructors to collaboratively focus on the student learning goals when discussing lesson activities and instructional strategies as well as how these methods of instruction would affect student learning. The instructors practiced looking at the lesson from the students' perspective, and the researcher would facilitate discussions where instructors would explain how and why the lesson activities or instructional practices would produce the kind of thinking or behaviors that the group expected students to

achieve. Instructors would try to anticipate students' reactions, thinking, and possible misconceptions regarding the activities and instructional strategies. The researcher always began step two by having each instructor share how they have taught the lesson in the past as well as the strengths and weaknesses of their approach. This was a collaborative process where instructors decided on activities and instructional practices as well as lesson creation tasks that took place inside and outside the LS planning meetings. The LS group would collaboratively create a detailed finalized outline of the lesson with activities and guiding questions. The LS group also conducted rehearsals of some of the instructional strategies and activities before teaching the research lesson in the class. Lesson Study members who were not teaching the research lesson served as students for the rehearsal, and the LS members would collaboratively debrief, analyze, and revise the lesson during the rehearsal.

In step three, the LS group decided what evidence to collect and create in order to study student learning. The LS group collaboratively discussed an observation protocol document as well as observation records document used in a previous LS cycle, and the group chose to use this approach for the first research lesson on note-taking. This approach focused on observing students' behaviors regarding engagement in learning. For the second research lesson, the group decided to try a more informal approach to gather evidence of student engagement and learning. Student surveys that received students' perceptions of their engagement in the class, interest in the topic, and their evaluation of the quality of the learning experience were administered to each of the classes experiencing a research lesson. Artifacts such as students' note-taking mind-

maps were also collected at each class session. The research lessons were also video recorded.

In step four, one instructor would teach the research lesson while the other instructors would observe and capture evidence of learning using the observation protocol without interacting with the class. Step five would begin with the instructor who taught the research lesson sharing thoughts on the strengths and weakness of the lesson as well as how they felt about the lesson. The researcher facilitated the debriefing of the lessons by providing everyone an opportunity to share their observations, interpretations, and feedback on the research lesson. The researcher directed the focus to whether or not the student learning goals were addressed and to observations of student learning and engagement. Similar to the LS planning meetings, the researcher also facilitated discussions where instructors would explain how and why the lesson activities or instructional practices worked well. Through the discussions, the instructors would also explain how a change in an instructional practice or activity would produce the kind of thinking or behaviors that the group expected students to achieve, and the research lesson was then revised accordingly. Evidence collected from the research lesson was also reviewed by the group. Then in step six, another instructor would teach the revised research lesson and the group would analyze and debrief the second iteration of the research lesson. All debrief meetings occurred the same day the research lesson was taught in the class. In step seven, the researcher would prepare all Lesson Study cycle documentation such as the finalized lesson and LS meeting process notes as well as save this information on the department's website group server.

Action Plan for the Lesson Study Innovation

The Lesson Study innovation for this study took place during the sixteen weeks of the Fall 2013 semester. There were 1.5 hours each week dedicated to the Lesson Study collaborative group meetings as well as an additional 2.5 hours on week eight and week fourteen to complete the instruction and observation of the lessons that were created in Lesson Study. View Appendix M to receive details on each week's Lesson Study activities and Data Collection activities.

Data Collection Tools

A variety of data collection tools were used to more fully answer the research questions proposed in this study. This section provides a detailed description of each of the data collection tools utilized in this study.

Instrument	Description	Inventory
Teacher's Sense of Self-Efficacy Scale (Pre/Post) – Appendix A (Quantitative)	This survey uses a Likert scale with 24 items to determine instructors' efficacy with student engagement, instructional strategies, and classroom management. This survey was administered during the first week as well as during the last week of Lesson Study.	1 Pre/Post per instructor Total: 10 Surveys
Instructor Reflective Journals – Appendix B (Qualitative)	Instructors completed journals where they described their experience with Lesson Study and their thoughts, feelings, and actions regarding their instructional practice during Lesson Study.	Approximately one a week for thirteen weeks for each instructor (.5 – 1.5 pages each) Total: 53 Journals
Instructor Semi-Structured Interviews – Appendix D & E (Qualitative)	Five interviews were conducted after the first cycle of Lesson Study and five more were conducted after the second cycle of Lesson Study. The purpose of the interview questions was to gain a better understanding of the instructors' perspectives and experiences with Lesson Study and their instructional practice.	First Cycle: 210 minutes Second Cycle: 137 minutes Total: 10 interviews, 347 minutes
Lesson Study Planning & Debrief Meetings Video Recordings (Qualitative)	All Lesson Study planning meetings and debrief meetings were video recorded. During these meetings instructors devised learning goals, created lessons, and debriefed their observations of the research lessons.	1 Orientation meeting and 11 Lesson Study Planning Meetings: 949 minutes 4 Lesson Study Debrief Meetings: 271 minutes Total: 16 meetings, 1220 minutes
Expert Mentor Sessions Video Recordings (Qualitative)	Instructors who taught the research lesson that was observed met with an expert instructor to receive feedback on the lesson as well as on their instruction of the lesson.	Total: 4 Expert Mentor Sessions, 179 minutes
Student Surveys on Lessons – Appendix C (Qualitative/Quantitative)	Students completed surveys approximately once a week regarding their experience with the lesson. Students rated the engagement of the lesson, their interest in the topic and the quality of the learning experience. There were closed-ended question using a Likert-type scale as well as open-ended questions.	Total Surveys: 1,235 (Administered in 77 class sessions)
Researcher Field Notes (Qualitative)	The researcher captured notes regarding conversations and observations outside of the Lesson Study meetings.	Periodically during the 16 weeks

Figure 1. Data collection tools qual/quan chart inventory.

Qualitative Data Collection Tools

Reflective journal response from instructors. Since action research and Lesson Study are collaborative processes that are founded on empowering participants by involving them in reflection and inquiry, the researcher requested LS participants to maintain a reflective journal about their experience with Lesson Study and their teaching practice. The instructors participating in Lesson Study were encouraged to complete a brief Reflective Journal Response (see Appendix B) concerning their thoughts and feelings about their Lesson Study experience as well as their thoughts, feelings, and actions regarding their teaching practice once a week. According to Creswell (2009), journals allow researchers to obtain the words and descriptions of the participants. The researcher's purpose for using the reflective journals was to gain a clearer understanding of the process that the instructors were experiencing as they participated in Lesson Study. The researcher believed that it was important to gain an understanding of the instructors' thoughts, feelings, and behaviors on a regular basis because valuable information could have been missed regarding how instructors made meaning of Lesson Study and were impacted by Lesson Study if information was only captured twice during the semester through interviews. The researcher believed that there could have been very important information that would not have been disclosed or would have been overlooked that occurred on a routine basis that would provide a much more detailed account in regards to how instructors made meaning of their LS experience. Moreover, the researcher believed that reflective journals would empower instructors by assisting them to reflect on their experience and their teaching practice thus allowing them to make changes to their practice. In addition, the researcher believed that this individual reflection would

foster the co-construction of knowledge in LS meetings because instructors would have had time to process information that they could then contribute to the LS group. These journals were emailed to the researcher every week during the study.

Table 2

Inventory of Reflective Journals by Instructor

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
INS:A	X	X	X	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	10
INS:B	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	13
INS:C	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	13
INS:D	Y	Y	Y	Y	X	X	X	X	X	X	Y	Y	Y	8
INS:E	Y	Y	Y	Y	Y	Y	X	X	X	Y	X	Y	Y	9

Semi-structured interview with instructors participating in lesson study.

After the completion of the first cycle of Lesson Study, the researcher conducted a one-on-one interview with each counselor participating in Lesson Study using a semi-structured interview (see Appendix D) that was created by the researcher. The researcher then created a second semi-structured interview (see Appendix E) that was used by a research colleague to interview participants at the end of the second cycle of Lesson Study. The researcher chose to have a colleague conduct the second interview in order to provide the participants with as much comfort as possible in providing their most honest feedback. The colleague was a sociology instructor at another community college who

was familiar with the researcher's study. According to Plano Clark and Creswell (2010), interviews utilizing open-ended questions allow the researcher to gain an understanding of a participant's experience regarding a phenomenon unconstrained by any perspective of the researcher. The researcher asked open-ended questions to provide an opportunity for participants to share and describe their experience with Lesson Study as well as to share and describe their instructional practices and work environment during Lesson Study. Each interview averaged approximately 35 minutes in length. The interviews were audio recorded using a voice recording device and then transcribed by a transcription agency. The researcher piloted questions from the first semi-structured interview during the Spring 2013 semester with a counselor who participated in Lesson Study during the Fall 2012 semester since this counselor was not able to continue participating in Lesson Study during the Fall 2013 semester.

Table 3

Inventory of Semi-Structured Interviews by Instructor

Instructor	Interview I	Interview II	Total Time (minutes)
A	42:18	20:26	62:44
B	52:02	27:13	79:15
C	27:46	25:25	53:11
D	34:50	29:30	64:20
E	52:27	34:58	87:25

Videos of lesson study debriefing meetings. Each of the four Lesson Study debrief meetings which were a total of 271 minutes in length were video recorded and

then transcribed by a transcription agency. Each of these LS debrief meetings took place the same day that a research lesson was facilitated and observed in a classroom. The researcher also observed the LS debrief meetings and took observational notes on these meetings. The video recorded LS debrief meetings were utilized to provide data on how and to what extent the counselors were making meaning of their teaching practice during LS meetings as well as to gain a better understanding of the effectiveness of the lesson that was created through Lesson Study. These LS debrief meetings were also used to provide information regarding changes in participants' instructional practices.

Videos of lesson study planning meetings. Each of the eleven, approximately 75 minute in length, weekly Lesson Study professional learning meetings were video recorded and then transcribed by a transcription agency. The researcher also observed the LS planning meetings and took observational notes on these meetings. The video recorded LS meetings were utilized to provide data on how and to what extent the counselors were making meaning of their teaching practice during LS meetings. According to Plano Clark and Creswell (2010), an advantage of observations is that this data collection tool allows the researcher to gather information as it naturally occurs and to study actual behaviors. Similarly, Gelo, Braakmann, and Benetka (2008), describe observations as a means for researchers to view the behaviors of participants and specific events in real-world situations. The researcher used the video recorded meetings to explore how instructors approach lesson planning and instructional practices as well as how they co-construct knowledge.

Video of peer mentoring sessions. There were four peer mentoring sessions that were video recorded averaging approximately 45 minutes each. The researcher selected a

colleague with substantial experience teaching and training educators to provide feedback and guidance to Lesson Study participants regarding their instruction. This outside expert had conducted instructional skill workshops at the campus for many years and worked as a full-time communications professor at the college. The videos of the instruction of lessons created through Lesson Study were reviewed by this outside expert who possesses knowledge on effective pedagogical teaching practices. During the Fall 2013 semester, the LS participants who taught the research lessons were invited to meet individually with the expert teacher colleague to discuss and receive feedback regarding pedagogical and instructional practices used to teach the lessons. The outside expert utilized the video recorded lessons as a means to assist LS participants to learn beneficial teaching practices and reflect on their practice. One of the most significant challenges to the effectiveness of Lesson Study is the possible deficiency of pedagogical content knowledge amongst the LS participants (Sibbald, 2009) as well as the lack of access to content and pedagogical expertise (Audette, 2004). Similarly, Fernandez and Chokshi (2002) stress that the success of any Lesson Study group will be limited by the collective knowledge of its group members. In order to overcome this challenge, Lesson Study groups could be provided access to advisors with strong pedagogical knowledge and extensive teaching experience (Fernandez, 2002; Fernandez & Chokshi, 2002; Lewis, Perry, Hurd, & O'Connell, 2006). In the tradition of social constructionism, the participants who taught the lessons and received feedback from the expert outsider were then invited to share with the LS group their learning in regards to beneficial pedagogical and instructional practices that could improve the instruction of future lessons. The researcher decided not to have the expert outsider review and provide feedback on the

instructional videos with the entire LS group in order to mitigate any fears that instructors may have possessed in regards to being evaluated in the presence of their peers.

Quantitative Data Collection Tools

Student survey. Students who were enrolled in the ten SCS100 classes that the Lesson Study participants were teaching were provided with a brief quantitative and qualitative survey (Appendix C) after the completion of each major topic in the college success course which was administered approximately each week of the semester. Surveys were administered in 77 class sessions which averaged approximately eight class sessions per instructor, and 1,235 surveys were completed.

All the raw data from the student surveys was inputted into a separate Excel spreadsheet for each of the ten SCS100 class sections. Each SCS100 class section Excel spreadsheet was organized with tabs representing each of the class sessions. After inputting all the raw data into the ten separate Excel spreadsheets representing the ten SCS100 class sections, a colleague reviewed the raw data from each of the 1,235 surveys to ensure information was inputted accurately into the Excel spreadsheets. The student survey entailed two closed-ended questions regarding whether or not the lesson was engaging and two closed-ended questions regarding whether or not the topic was interesting on a Likert-type scale from 1-10 (1-Strongly Disagree, 3- Disagree, 5-Somewhat Disagree, 6-Somewhat Agree, 8-Agree, 10-Strongly Agree). There was also one closed-ended question where students rated the quality of the learning experience on a Likert-type scale from -5 to +5 (-5 Much Worse, -3 Worse, -1 Somewhat Worse, 0 About the Same, +1 Somewhat Better, +3 Better, +5 Much Better). SPSS software showed the Cronbach's alpha score for these five items to be 0.91. The survey also

provided open-ended questions to allow students to elaborate on these three areas as well as one open-ended question on how they would improve the lesson and one open-ended question on what were the most beneficial aspects about the lesson. The researcher's purpose for the student survey was to explore the students' experience of the lessons created through Lesson Study compared to lessons that were not created through the process of Lesson Study. The researcher piloted a first draft of this student survey in a SCS100 Strategies for College Success course during the Fall 2012 semester in order to refine this data collection tool.

Teacher's Sense of Efficacy Scale (pre/post). The researcher administered a validated instrument known as the Teacher's Sense of Efficacy Scale (see Appendix A) before the start of Lesson Study professional learning experience and after the completion of the second LS cycle. Three moderately correlated factors are consistently found on The Teachers Sense of Self-Efficacy Scale: (1) efficacy in student engagement, (2) efficacy in instructional practices, and (3) efficacy in classroom management (Tschannen-Moran & Hoy, 2001). According to Tschannen-Moran and Woolfolk Hoy (2001), reliability alpha scores for the teacher efficacy subscales were 0.91 for instruction, 0.90 for management and 0.87 for engagement as well as an overall alpha score of 0.94. In addition, this instrument's positive correlations with other measures of teacher efficacy provide evidence for construct validity (Tschannen-Moran & Woolfolk Hoy, 2001). The researcher used this instrument to gather quantitative data on the counselors' sense of self-efficacy in regards to their teaching practice especially in relation to their efficacy in influencing student engagement and efficacy with their instructional practices since these were two primary aspects that the Lesson Study

innovation was attempting to positively impact for instructors. This instrument asked the instructors to rate their beliefs about their teaching practice by providing instructors 24 close-ended items and asking them to rate themselves on a 9-point Likert scale that ranged from 1 "nothing", 3 "very little", 5 "some influence", 7 "quite a bit" and 9 "a great deal" in relation to the question "How much can you do?" The following are examples of closed-ended items on this survey:

Q4 How much can you do to motivate students who show low interest in school work? (engagement)

Q20 To what extent can you provide an alternative explanation or example when students are confused? (instructional strategy)

Q3 How much can you do to control disruptive behavior in the classroom? (classroom management)

Data Analysis

Qualitative data. Qualitative data was gathered from the instructor reflective journals, instructor semi-structured interviews, videos of Lesson Study debrief meetings, videos of Lesson Study planning meetings, videos of peer mentoring sessions, student surveys open-ended questions, and the researcher's field notes. Creswell (2009) identifies organizing and preparing the data for analysis as the first step in the data analysis process. The researcher organized and sorted the following data sources into separate colored files:

- copied pages of reflective journal responses sorted by participant
- transcribed interviews (first and second)
- typed observation notes from viewing the LS meetings video recordings as

well as the transcribed LS meetings documents

- copies of all student surveys sorted by instructor class section and class session as well as student survey open-ended responses summary sheets with all open-ended responses for each class session sorted by instructor and class section
- written field notes from the researcher

The researcher analyzed each data source separately in order to identify themes from each data source. According to Plano Clark and Creswell (2010), in a mixed methods triangulation (concurrent) design, the researcher collects both qualitative and quantitative data at about the same time but analyzes both datasets separately.

Reflective journals. The second step is for the researcher to read through each data source separately as well as write notes and record general thoughts on the data sources (Creswell, 2009). First, the researcher began by reviewing all the reflective journals from one of the participants, and then the researcher began to memo key ideas and thoughts on each of the reflective journals from this one participant. Second, the researcher began highlighting and drawing brackets around possible themes using different colored highlighters to distinguish between themes. The researcher then consecutively read each of the remaining four participants' reflective journals and began to memo key ideas and patterns for each of the participants' reflective journals. For each set of participants' reflective journals the researcher again began highlighting and drawing brackets around possible themes. Creswell (2009) identifies completing a detailed analysis with a coding process as the third step in a data analysis process. Third, through open coding the researcher looked for distinctions and similarities amongst

themes in order to create categories. The researcher then created a list of themes and combined related themes into major themes. Fourth, the researcher utilized axial coding to create major theme codes and sub-codes for the reflective journals. Then, the researcher created a codebook (Appendix F). The researcher returned to the reflective journal documents and placed the appropriate code next to each highlighted statement that represented the code. Fifth, the researcher created codesheet documents for each participant that contained every comment from each of their reflective journals under a specific code or sub-code. The researcher then created a summary description of each of the codes (Appendix G), and using the codebook descriptions, the researcher reviewed the codesheets for each participant in order to rearrange comments into the appropriate code. Through this final comparison the researcher further combined related theme codes as well as created additional sub-codes when there could be distinct themes created from a large amount of comments within one code. Finally, the researcher then reviewed the final codesheets with a critical friend who checked that each comment found on the codesheets was representative of the code description in which it was placed in order to receive inter-rater reliability. The critical friend was a faculty member in communications at the college who also held a doctorate degree and who served as the expert mentor for the study. The critical friend first independently reviewed each instructor's codesheet using the reflective journal codebook and descriptions. Then the critical friend met with the researcher to discuss any discrepancies and come to an agreement on how the information was represented on the codesheets in order to receive consistency amongst the themes and supporting information.

Semi-structured interviews. The researcher utilized the same qualitative analysis

approach to analyze the semi-structured interviews that he used for the reflective journals. The researcher began by reading one of the participant's first interview transcriptions, and then the researcher began to memo key ideas and thoughts on this participant's first interview transcription. Second, the researcher began highlighting and drawing brackets around possible themes using different colored highlighters to distinguish between themes. The researcher then consecutively read each of the remaining four participants' interview transcriptions and began to memo key ideas and patterns for each of the participants' interviews. For each of the other four participants' first interviews, the researcher again began highlighting and drawing brackets around possible themes. Third, through open coding the researcher looked for distinctions and similarities amongst themes in order to create categories. The researcher then created a list of themes and combined related themes into major themes. Fourth, the researcher utilized axial coding to create major theme codes and sub-codes for the interviews. Then the researcher created a codebook (Appendix H). The researcher returned to the semi-structured interview transcriptions and placed the appropriate code next to each highlighted statement that represented the code. Fifth, the researcher created codesheet documents for each participant that contained every comment from their first interview under a specific code or sub-code. Finally, the researcher then created a summary description of each of the codes (Appendix I), and using the codebook descriptions the researcher reviewed the codesheets for each participant in order to rearrange comments into the appropriate code. Through this final comparison the researcher further combined related theme codes as well as created additional sub-codes when there could be distinct themes created from a large amount of comments within one code. There were two cycles

of this constant comparison evaluation that took place for this data source. After completing the analysis of the first interviews, the researcher implemented the same approach to analyze the second interviews for each participant. The researcher then reviewed the final codesheets with a critical friend who checked that each comment found on the codesheets was representative of the code description in which it was placed in order to receive inter-rater reliability. The researcher employed the assistance of the same critical friend who provided inter-rater reliability for the reflective journals and also utilized the same process.

Videos of lesson study debriefing meetings. The researcher utilized the same qualitative analysis approach to analyze the videos of LS debrief meetings that he used for the reflective journals and semi-structured interviews. The researcher began by reading one of the LS debrief meeting transcriptions, and then the researcher began to memo key ideas and thoughts on this first LS debrief meeting transcription. Second, the researcher began highlighting and drawing brackets around possible themes using different colored highlighters to distinguish between themes. The researcher then consecutively read each of the remaining three LS debrief meeting transcriptions and began to memo key ideas and patterns for each of these LS debrief meetings. For each of the other three LS debrief meetings, the researcher again began highlighting and drawing brackets around possible themes. Third, through open coding the researcher looked for distinctions and similarities amongst themes in order to create categories. The researcher then created a list of themes and combined related themes into major themes. Fourth, the researcher utilized axial coding to create major theme codes and sub-codes for the LS debrief meetings. The researcher created a codebook (Appendix J). The researcher then

returned to the LS debrief meeting transcriptions and placed the appropriate code next to each highlighted statement that represented the code. Fifth, the researcher created codesheet documents for each LS debrief meeting that contained every comment from the LS debrief meetings under a specific code or sub-code. Finally, the researcher then created a summary description of each of the codes (Appendix K), and using the codebook descriptions the researcher reviewed the codesheets for each LS debrief meeting in order to rearrange comments into the appropriate code. Through this final constant comparison, the researcher further combined related theme codes as well as created additional sub-codes when there could be distinct themes created from a large amount of comments within one code. There were three cycles of this contrast and comparison evaluation that took place for this data source. The researcher then reviewed the final codesheets with a critical friend who checked that each comment found on the codesheets was representative of the code description in which it was placed in order to receive inter-rater reliability. The researcher employed the assistance from a different critical friend for the LS debrief meetings but utilized the same process that was used for the reflective journals and semi-structured interviews.

Videos of lesson study planning meetings and expert mentor sessions. The video recordings of the Lesson Study Planning meetings were transcribed. The researcher was planning to use an observation protocol document and observation records document to collect data from the videos. However, the researcher soon discovered that without clear questions generated from the analysis of other sources it would have been very difficult to capture beneficial information. The researcher decided to use this data source after first analyzing all other quantitative and qualitative data in the study. After analyzing all the

other data that originated from the instructors and the students, the researcher utilized the LS planning meeting videos and transcriptions of the video recordings as a means to enhance or support assertions that were found within the analysis of all the other data. All the other data sources entailed the instructors or students providing their perceptions and ratings of the Lesson Study experience, yet the planning meeting video recordings provided a different point of view because they depicted the experience of Lesson Study in action as an actual working meeting. After the researcher identified some key assertions and findings from the analysis of all the other data, the researcher reviewed all the video recording transcriptions in order to identify information that would enhance, support, or improve the understanding of an assertion. As the researcher would read the LS planning meeting transcriptions, the researcher would write any thoughts or reflections next to information that pertained to the final assertions of the study. The researcher also would watch those parts of the video recordings that corresponded to the information identified on the transcriptions in order to receive a better understanding of the information. The researcher created vignettes using the information that was captured from the transcriptions of the video recordings and utilized these to support final assertions. Similarly to the Lesson Study Meeting video recordings, the expert mentor session recordings were used by the researcher to identify information that could be used in vignettes to enhance findings discovered in the analysis of all the other data. The expert mentor sessions were not transcribed, but a Cornell notes document was used by the researcher to take observation notes during the viewing of the video recordings.

Quantitative data. Quantitative data was gathered from the Teacher's Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) and the student surveys.

Descriptive statistics were employed to help analyze the quantitative data (Plano Clark & Creswell, 2010).

Student survey closed-ended questions. The researcher copied the student survey closed-ended question raw data from each of the ten separate SCS100 class section Excel spreadsheets into one final Excel spreadsheet. A critical friend reviewed the data from the ten initial separate SCS100 class section Excel spreadsheets with the final Excel spreadsheet to ensure accuracy. The research then copied the student survey raw data that was input into the final Excel spreadsheet into the SPSS statistical software. Again, the critical friend reviewed the data from the final Excel spreadsheet with the data copied into SPSS to ensure accuracy.

First, the researcher used the SPSS statistical software to discover the total mean scores for each of the five items on the student survey for SCS100 instructors' combined class sessions using a lesson created through Lesson Study (note-taking and diversity) as well as for SCS100 instructors' combined class sessions using non-LS lessons. SPSS statistical software was also used to find the standard deviation for each of these mean scores. Then, using SPSS statistical software, independent *t*-tests were generated in order to determine the significance between the mean scores on the five survey items of all the SCS100 instructors' combined note-taking lessons that were created through Lesson Study with all the SCS100 instructors' combined lessons that were not created through Lesson Study. Independent *t*-tests were also generated in order to determine the significance between the mean scores on the five survey items of all the SCS100 instructors' combined diversity lessons that were created through Lesson Study with all

the SCS100 instructors' combined lessons that were not created through Lesson Study. Graphs were then created that depicted these results.

Second, the researcher used the SPSS statistical software to discover the total mean scores for each of the five items on the student survey for each individual instructor's combined class sessions using a lesson created through Lesson Study (note-taking and diversity) as well as for each individual instructor's combined class sessions using non-LS lessons. SPSS statistical software was also used to find the standard deviation for each of these mean scores. Then, independent *t*-tests were generated in order to determine the significance between the mean scores on the five survey items for each individual instructor's combined note-taking lessons that were created through Lesson Study with each individual instructor's combined lessons that were not created through Lesson study. Independent *t*-tests were also generated in order to determine the significance between the mean scores on the five survey items for each individual instructor's combined diversity lessons that were created through Lesson Study with each individual instructor's combined lessons that were not created through Lesson study. Graphs were then created that depicted these results.

Student survey open-ended questions. Using the qualitative data from the open-ended questions that was collected from the 1,235 student surveys that were administered in 77 class sessions, the researcher created a summary document for each of the 77 class sessions that included all the students' responses to the open-ended questions as well as the mean scores for the five quantitative questions. Each student survey summary document was provided to the LS instructor who facilitated the class session on a weekly basis in order to assist him or her with having a better understanding of how students

were perceiving the class and the quality of instruction in the class.

These student survey summary documents were also printed by the researcher and then organized according to the SCS100 class section in which they were administered. The researcher began by reading the responses to the five open ended questions on the surveys. The researcher's initial coding was thematic by first coding each comment as representing an evaluative, pedagogical, topical, or affective response. The researcher began by coding eight student survey sessions using these codes and soon realized that this coding approach needed to be more consistent and reliable. In addition, the researcher also realized that it would be important to distinguish between positive, negative, and neutral comments since these evaluations were identified during the first attempt to code. The researcher created a Student Survey Code Description/Directions document (Appendix L) that described each of the four codes and provided directions on how to determine these four codes. The researcher using the same eight student survey sessions attempted to code these documents again. The researcher found that at times it was difficult to determine whether a broad statement such as "interesting" referred to the topic or the pedagogical approach. As a result, the researcher made some corrections to the Student Survey Code Description/Directions document in order to provide more clarity and consistency to the coding process. The researcher again attempted to code the eight student survey class sessions using the modified directions. The researcher then created a student code reliability check document using the responses from the eight student survey sessions. Each response was placed under the appropriate code on this document and checked to make sure it was representative of the code.

Then the researcher had a critical friend review the coding completed on the eight student survey sessions in order to receive inter-rater reliability. The critical friend was a university professor in a College of Education. The critical friend reviewed the Student Survey Code Description/Directions document and the researcher's coding of the eight student survey summary documents. The researcher and the critical friend discussed any discrepancies on the eight student survey summary documents and came to an agreement on how the information was coded on the eight student survey session documents in order to receive consistency with the coding process. The eight student survey class sessions represented 10.5 % of the total amount of student survey class sessions.

Then, using the Student Survey Code Description/Directions document, the researcher coded all the student surveys. The researcher then decided the numerical value that would be assigned to the neutral, positive, and negative statements: a neutral rating would receive a numerical value of "0"; a positive rating would receive a numerical value of "+1"; and a negative rating would receive a numerical value of "-1." Finally, the researcher inputted all the student survey codes' numerical values into an Excel spreadsheet in order to receive the mean scores for each code in each of the instructor's class sections for lessons created through Lesson Study (note-taking and diversity) and for non-LS lessons. First, the researcher compared the mean scores for each code for SCS100 instructors' combined note-taking lessons that were created through Lesson Study with all the SCS100 instructors' combined lessons that were not created through Lesson Study. This comparison was also performed for the instructors' combined diversity lessons created through lesson study with the instructors' combined lessons that were not created through lesson study. Second, the researcher compared the mean scores

for each code for each individual instructor's combined LS lessons with each individual instructor's combined non-LS lessons. Graphs were then created using the Excel software to compare the student survey mean code scores for class sessions using lessons that were created through Lesson Study and those not using lessons created through Lesson Study.

Teacher's Sense of Efficacy Scale (pre/post). The researcher administered the Teacher's Sense of Efficacy Scale to the five participants during the first week of the study and at the end of the study during the sixteenth week. The researcher inputted the raw data from the pre and post Teacher's Sense of Efficacy Scale into the SPSS statistical software. A critical friend checked to make sure all the raw data from the Teacher's Sense of Efficacy Scale was inputted accurately into SPSS. The researcher used SPSS statistical software to find the mean scores for the pre and post data from the Teacher's Sense of Efficacy Scale. SPSS statistical software was also used to find the standard deviation for each mean score on this quantitative data source. Lastly, using SPSS statistical software, paired *t*-tests were generated in order to determine the significance between the correlation of the pre and post data. Graphs were created to illustrate the results.

In summary, the researcher utilized five qualitative and two quantitative data collection tools in this mixed method current design. Qualitative means of memoing, open coding and axial coding were utilized to analyze the reflective journals, semi-structured interviews and LS debrief meetings. The researcher reviewed the data from the LS planning meetings and peer mentoring sessions in order identify information that would enhance assertions. Quantitative means of descriptive statistics were used to analyze the student surveys as well as the Teacher's Sense of Efficacy Scale.

Chapter 4: Results

This mixed method study employed a concurrent design for the purposes of complementarity to explore how instructors made meaning of their teaching practice as well as what changes they made to their instructional practice while engaging in the Lesson Study professional learning experience. In this chapter, the results of this study are organized into a qualitative and quantitative section. This chapter provides a brief description of the analysis that was conducted along with a detailed depiction of the results that were found from each data source. Within each qualitative and quantitative section, the results are organized according to their connection to the overarching research questions.

Qualitative Data Results

Brief Description of Analysis

There were a variety of qualitative data collections tools that were implemented to receive a better understanding of the participants' experience with Lesson Study. Data collection tools included participants' weekly journals that allowed instructors to share their thoughts, feelings, and behaviors in regards to their Lesson Study experience throughout the course of the study using an approach that was more introspective in nature. Secondly, instructors were interviewed midway through the research study as well as at the conclusion of the research study using an approach that was more comfortable for participants who were extroverted in nature in order to allow participants to share their experience and thoughts regarding Lesson Study at the end of each cycle of Lesson Study. The researcher facilitated these two different qualitative data collection approaches in order to accommodate instructors' different processing styles and to

provide all instructors a comfortable way to share their experience. In addition, the four Lesson Study debrief meeting video recordings were observed and then transcribed in order to receive participants' experience after the instruction of research lessons. These three data sources were analyzed through a systematic process of memoing, open coding to identify themes, constant comparison of all data and themes as well as axial coding to solidify themes. In addition, the remaining eleven Lesson Study planning meeting video recordings were reviewed and transcribed, and information from these meetings were used to create vignettes that elaborated or enhanced the findings from all the other qualitative and quantitative data sources. Since the researcher was an active participant and facilitator of the LS meetings, there were a minimal amount of researcher field notes. However, the researcher field notes were also reviewed and used to enhance the findings from all the other qualitative and quantitative data sources. The LS meetings and researcher field notes provided a distinct manner to view the Lesson Study experience because it provided information from the actual lived experience and not only from instructors' perspectives of the past experiences.

These qualitative data sources provided information that assisted the researcher to answer the three research questions for this study. The following section is organized by connecting all the overarching themes produced from these qualitative data sources to one of the corresponding three research questions.

How, and to What Extent, Do the College Success Course Instructors Teaching Developmental Education Students Make Meaning of Their Teaching Practice During Lesson Study Cycles?

The analysis of the reflective journals, the semi-structured interviews, and the LS debrief meetings produced overarching themes that described how, and to what extent, the instructors made meaning of their teaching practice during the Lesson Study experience.

Collaboration/Collegiality. One of the overarching themes from these qualitative data sources was the collaborative nature of Lesson Study. Through the analysis of the reflective journals and semi-structured interviews, instructors depicted Lesson Study as a collaborative team experience where instructors work together to produce improved learning experiences for students as depicted in the collaboration "team" code (see 01.COL-TEA.01). The instructors also viewed the team experience as instructors using their unique strengths to learn from each other and improve each other's instructional practice.

> Instructor A:
> No I think we are more of a team now. (semi-structured interview)
>
> It is so great to be able to learn from other more seasoned instructors. (reflective journal)
>
> Instructor B:
> I would probably describe it as coming together with colleagues . . . and creating a lesson to with the common goals and our goal being engagement. (semi-structured interview)
>
> I learned so much from them and really enjoyed collaborating with them. (reflective journal)
>
> Instructor C:
> Collaborating with colleagues and coming up with good lesson plans. (semi-structured interview)

> Working with my colleagues on lesson planning has been valuable as well because I've had the opportunity to see other teaching styles. (reflective journal)
>
> Instructor D:
> I'd describe it as an opportunity for teachers to come together to work on different lessons to improve a specific lesson. (semi-structured interview)
>
> And to collaborate with them in a positive way, I think we all learned from each other. (reflective journal)
>
> Instructor E:
> But getting that final product and something that is not just from me and my limited creativity but six people's or five other people's creativity as well. (semi-structured interview)
>
> I'm proud of the accomplishments we made as a group. I feel everyone is on the same page and eager to see the lesson in action. (reflective journal)

The collaborative theme also encompassed a sense of collegiality where instructors supported each other and became more comfortable with each other as depicted in the collaboration "collegiality" code (see 01.COL-CLL.02) found within the reflective journals and semi-structured interviews. This "collegiality" code also reflected counselors being comfortable enough with each other to refer students to each other who needed specialized assistance as perceived by one participant.

> Instructor A:
> Yeah, so it got me thinking about it. It's helped because then it's more of a camaraderie, I guess, that you get to know them and then you get to know their styles and then you can blend. (semi-structured interview)
>
> This week one of my students is getting into my head. I feel like she is judging me. I spoke to the [researcher] about it and he gave me some pointers . . ., but also offers a supportive group to help with teaching in general. (reflective journal)
>
> Instructor B:
> I felt like everybody was so awesome and encouraging and supportive. I just felt like that if I could create a picture for you, I was like I was going through a tunnel and you were all giving me high-fives while I was running...you know what I

mean like that kind of scenario like at a game where everyone was giving me high fives, 'you did great. (semi-structured interview)

I also have really enjoyed the camaraderie with my colleagues. I feel we have been really supporting each other which is something I very much value in a work environment. (reflective journal)

Instructor C:
Spending more time together in a small group getting to know each other. It's been definitely positive. (semi-structured interview)

On another note, I feel very supported by my colleagues. It was great how everyone was there to help and offer words of encouragement. (reflective journal)

Instructor D:
I think you do get to know people better because you're spending time with them. You're working as a group so you get to know your group members better. I definitely think there's a growth in the relationships with the group members for sure. (semi-structured interview)

Our relationships have improved overall. (reflective journal)

Instructor E:
It was cool to—I think the thing I like the best is I got to know all my colleagues. I got to be on two teams, two cycles. I really got to know a lot of my colleagues. I got to really understand their gifts and their strengths. (semi-structured interview)

Because in Lesson Study, we learn so much about each other and we got to know each other, and then I got to know everyone's strengths and personality types where I can say, "I think you should work with this counselor. You will like this counselor. You guys would be a good fit." I think that's so important. (semi-structured interview)

I gave both of them words of encouragement. (reflective journal)

The analysis of the LS debrief meetings also produced an overarching theme of collegiality where participants supported and encouraged each other as depicted by the "support" code (see 01.CLL-SUP.02) as well as recognized and praised each other as depicted by the "praise" code (01.CLL-PRA.01). In addition, another component of collegiality theme that was viewed in the LS debrief meeting was the humor participants

shared with each other during these meetings as depicted by the "humor" code (01.CLL-HUM.03). The following are some examples of these three codes:

> Instructor A:
> So I think mine took a lot longer than yours did, just to let you know. (support)
>
> I'd have jumped in and said, "Hey, I'll put you in a car with one of my Asian friends" [referring to a student's stereotypical comment]. (humor)
>
> Instructor B:
> That's amazing. (praise)
>
> You guys are very encouraging. I'm super lucky. (support)
>
> Instructor C:
> You're such a good teacher. (praise)
>
> Yes, I have to go get a new outfit or something [referring to preparation for the research lesson]. (humor)
>
> Instructor D:
> Can we come watch it again [teasing participant about observing her teach again]. (humor)
>
> Instructor E
> No wonder you guys teach here. (praise)
>
> You did really well, Instructor A, considering everything you're going through. (support)

Field notes also highlighted a change in collaboration as the participants were seen visiting each other's offices to discuss lessons and receive feedback and guidance on instructional practices. This finding is very reflective of previous research findings that associate Lesson Study with increased teacher collaboration (Lewis, Perry, Hurd, & O'Connell, 2006; Puchner & Taylor, 2006; Rock & Wilson, 2005).

Collaborative reflection. Another related overarching theme from these qualitative data sources was the collaborative reflection experienced in Lesson Study.

From the analysis of the reflective journals and semi-structured interviews, instructors depicted Lesson Study as an experience where they collaboratively reflected on their teaching practice through group dialogue coded as "dialogue" (see 03.REF-DLG.01) as well as through the receiving of diverse perspectives and feedback which was coded as "perspectives" (see 03.REF-PER.02) and "feedback" (see 03.REF-FEE.03).

> Instructor A:
> And brainstorm to talk about how to improve on lesson study, and that's something that I bring up in my classroom a lot, is brainstorming and group study and that kind of thing [dialogue]. (semi-structured interview)
>
> You see different viewpoints and then come up with your own [perspectives]. (semi-structured interview)
>
> Then it's you can get feedback from more seasoned instructors [feedback]. (semi-structured interview)
>
> However, I realized that the definition of "engagement" differs within our group. Maybe I missed it if there was clarification……if I did not though, maybe that should be decided on as a group. I thought of engagement as a person looking at the instructor with pen in hand. Instructor E thought it was if they were actually writing notes [dialogue]. (reflective journal)
>
> Instructor B:
> Or okay let's change it or what are your reasons why or maybe I changed my mind so I think that has been awesome [dialogue]. (semi-structured interview)
>
> I think, for me, the most effective thing was when we would just sit around the round table and just get ideas going [perspectives]. (semi-structured interview)
>
> It was really helpful from him. For example he said you have really good energy, you have a good rapport with the students and hearing that from was awesome [feedback]. (semi-structured interview)
>
> I have enjoyed hearing what others are doing, what worked and didn't work, etc. [perspectives]. (reflective journal)
>
> Instructor C:
> There's back and forth. You don't always get your way [dialogue]. (semi-structured interview)

> And you get ideas that you never would have thought of yourself [perspectives]. (semi-structured interview)
>
> Also, I've gotten so much feedback because part of this is getting feedback on the lesson [feedback]. (semi-structured interview)
>
> Working with my colleagues on lesson planning has been valuable as well because I've had the opportunity to see other teaching styles and philosophies toward learning [perspectives]. (reflective journal)
>
> Instructor D:
> I think we all—it was through open discussion [dialogue]. (semi-structured interview)
>
> I think the thing that I like about lesson study or something's that unique is that we get an opportunity to come together to hear other people's opinions, perspectives on different topics [perspectives]. (semi-structured interview)
>
> And putting your ideas out there, gauging feedback on both. Even when you do teach, I didn't teach a semester but, I think you get the feedback; that he gets very constructive and good [feedback]. (semi-structured interview)
>
> We had a lot of discussion regarding the activities and even the questions in the activities [dialogue]. (reflective journal)
>
> Instructor E:
> The in-depth reflection, discussion on the lesson design, impact on students. The in-depth reflection, as a group, we did it every time we taught it and observed it, we would talk about it [dialogue]. (semi-structured interview)
>
> Then when I hear other people what they're doing, I'm, like, "Wow." There's always one or two other teachers that will say, "Well, this is what I do," and I'm, like, "Really? That sounds great. I never thought of that," and I like that [perspectives]. (semi-structured interview)
>
> As soon as we got back it was so nice to be able to say that. I said, "Hey, what was up with the energy in that classroom?" and everyone was like, "Yeah!" [feedback]. (semi-structured interview)
>
> My colleagues discussion about this particular instructional activity [dialogue]. (reflective journal)

In addition, the analysis of the LS debrief meetings produced an overarching theme of recommendations where instructors collaboratively reflected on their teaching practice by

providing perspectives and recommendations to each other regarding their teaching practices as depicted in the "teaching practice" code (see 09.REC-TEA.02). Some instructors also collaboratively provided recommendations regarding the Lesson Study innovation (see 09.REC-LSI.01) as well as dealing with classroom management issues (see 09.REC-CRM.03).

> Instructor A:
> I'm wondering sometimes maybe student—if you just leave it open "Do you want to share?" in that class especially, and I know they showed up today, but sometimes it's like pulling teeth to get them to say something. To start it off with a ball I think would be good to make some people.
>
> Instructor B:
> I just wanted to whatever, I don't know, just for the sake of sharing, I guess. I think I told you but I started putting them into groups by numbering them off and making… Because they were, you know if you say, "Get into groups," they naturally go with friends. And I found that they work way more, longer, harder.
>
> Instructor C:
> Yeah, that first slide is a really good introduction to that because it has—you can talk about the ground rules, and then the next part is the tip of the iceberg. Diversity is the tip of the iceberg, so you can just say, "Okay, so let's take you guys for example." You've got your superficial race or ethnicity, but what's below the surface that makes you unique.
>
> Instructor D:
> Well, I think what we were thinking is when—if they get together in that group, at least take one of their finished products and put it up on the whiteboard so that we can see and compare them and be like, okay. You did a really good job. Then we'd put up the master one and kind of let them compare and rate how they did.
>
> Instructor E:
> Yeah, cuz I was gonna say I like the idea of not giving them prompts because usually what happens is when I give them prompts, then that's all they cover. They see the list and they go, "Oh, that's all she wants, religion, ethnicity," and then they stop. The creativity stops. They struggle with that creative thinking. I like to say, "Tell us about yourself," and then walk around. If you see they're struggling you can say—I mean especially when you know your students. Then I'd be like, "Well student, you're an athlete. Student you're"— you know.

Furthermore, the analysis of the LS debrief meetings identified an overarching theme of evaluations where instructors collaboratively reflected on their teaching practice by providing positive feedback and critiques regarding teaching practices and ideas suggested in Lesson Study meetings. This was depicted in the evaluations codes of "positive feedback on teaching practice" (see 03.EVA-PFT.01), "critique teaching practice" (see 03.EVA-CTP.02), "critique idea" (see 03.EVA-CID.03), and "defend/support idea" (see 03.EVA-DID.04).

> Instructor A:
> Waiting and not moving on like you were saying "Instructor C", not moving on and they were interacting [positive feedback on teaching practice].
>
> Well, and then, I don't know if you guys noticed, but I was writing down things that were surprising about my students. The ones that stood out to me, and so when I went to the diversity definition slide I was supposed to bring up some of those things; which I forgot to do [critique teaching practice].
>
> Instructor B:
> Or the type of questions. I thought it was good because you asked a question and the student would say something and that would make another student ask another question. Whether it started with you or not, it sparked them all. I liked the questions. They were good [positive feedback on teaching practice].
>
> I liked it, I liked the handout but I still don't see the point of doing it two times. Like I would have them take the outline notes on the Cornell handout maybe and then… That's how I would maybe do it but I don't see the point in taking outline… Then doing Cornell again and then doing it again. To me it's monotonous and it wastes time and then they didn't have enough time for the mind map [critique teaching practice].
>
> Why wouldn't you collect 'em? [critique idea].
>
> Instructor C:
> Well, but even without doing that, I feel like you did a good job of making that activity part of the lesson because then you asked the class, "What'd you think it means that diversity is the tip of the iceberg?" They were able to really answer that. You kept saying, "Oh I didn't know that about you. I didn't know that about you [positive feedback on teaching practice].

> Thought it fumbled a little bit with race versus ethnicity. I was just still off my game from the whole slow start [critique teaching practice].
>
> Yeah, some of them might get distracted and just start looking, watching. I don't really—I think that's a good added thing to do, but I also think it's just as effective to go over Instructor E's note on the screen and say did you get everything? If not, you can make changes to yours right now [defend idea].
>
> Instructor D:
> I liked it, I thought it was good. I just noticed that there was really many seats taking any notes. There was one girl with her notebook out, was it. That was just a little surprising to me [critique teaching practice].
>
> I would tell them to do it, and then I would make sure they did, and they would probably ask me are you gonna—yeah, do we turn this in. To me it's such a personal topic, especially if they're not open to sharing it publicly. I mean maybe they're comfortable sharing it with you, maybe they're not cuz they have their own perception of you. At least to me just them writing some of this stuff down could help them process where they're at [defend idea].
>
> Instructor E:
> Yeah, I did, too. I like the way—cuz you said, "Okay, let's review." You kind of did a little synopsis at the end which was good. You made them—they hit the points. They named all three styles totally [positive feedback on teaching practice].
>
> Well, it's just not… I don't think they take it too seriously, especially because it's so cartoonish and it is cartoonish, it's a cartoon and maybe they're not taking it so seriously because it's a cartoon [critique teaching practice].
>
> I think it would've been too long [critique idea].

These recommendations and evaluations were the product of the dialogues that took place amongst participants, and these recommendations and evaluations facilitated the collaborative reflections. This is very much reflective of the theoretical perspective on social constructionism since according to Gergen (2009) knowledge is created through relationships and as well as their by-products of social interactions. Moreover, another primary principle of social constructivism is that knowledge is the result of active mental processing by a person in a social environment (Cobb & Yachel, 1996; Prawat, 1996).

This finding of collaborative reflection is similar to previous research findings that depict Lesson Study as providing instructors with opportunities to reflect on and improve each other's thinking about student learning and their instructional practice (Audette, 2004; Lewis & Tsuchida, 1999; Lewis, Perry, Hurd, & O'Connell, 2006; Lewis et al, 2011; Rock & Wilson, 2005; Stigler & Hiebert, 2009).

Focus on student learning. A third overarching theme that was consistent within the data from the reflective journals, semi-structured interviews, and LS debrief meetings was a focus on the student learning experience and how students learn. Three instructors depicted the importance of addressing diverse student learning styles as well as being aware of diverse class group dynamics that may require the facilitation of different teaching strategies. This was depicted in the semi-structured interviews within the theme of student focus/cognitive empathy codes of "learning styles" (see 04.SFO-LST.01) and "different student class dynamics" (see 04.SFO-DSD.02) as well as in the LS debrief meetings code of "learning experiences" (see 04.SFO-LEX.01)

> Instructor A:
> Like I said, it's different with each class because my Monday-Wednesday class, they're way more outspoken, so they prefer more conversation clips, talking to each other [different class dynamics]. (semi-structured interview)
>
> I think with every lesson plan it's knowing your audience. Like I don't think it works so well with my Tuesday/Thursday class but I don't think anything I do is going to work well with my Tuesday/Thursday class [different class dynamics]. (LS debrief meeting)
>
> Instructor B:
> The thing that works with the deep introverts, I don't feel works the same with—for example, my "deer in the headlight" class, I would get them up. I would literally get them physically up and moving around because they were sleepy, whereas my thinkers were more thinkers, so I would have them journal or something instead [learning styles]. (semi-structured interview)

> Some things will work. I had one class that was pretty much all extroverts. They were really social and more talkative. Then I had ones that were a little more introvert and thinkers and more deep. I'd tweak things for all of them. Then my other class was just sort of "deer in the headlights," you know what I mean? [different student class dynamics]. (semi-structured interview)
>
> Instructor C:
> Yeah. Yeah. Well, just that we're really careful about bringing in all different types of learning styles. We always have a kinesthetic activity, visual, and then we always have a lecture piece. It's always a very well rounded and so we try to reach all the different students. Just making sure, as I said, I'm covering all the modalities [learning styles]. (semi-structured interview)

All the instructors also depicted examples of attempting to understand the student learning experience through the eyes of the student, such as what activities would engage students. This was depicted in all three qualitative sources within the student focus/cognitive empathy code of "learning experience" (see semi-structured interviews 04.SFO-LEX.03 as well as reflective journals and LS debrief meetings 04.SFO-LEX.01)

> Instructor A:
> I read my student's comments today. I really enjoyed hearing the good AND the bad. (You can not please everyone ☺) It's difficult when some students they do more of something and then others they do less of the same thing. (reflective journal)
>
> Instructor B:
> Definitely. We tried to understand what would engage them. The whole thing was about student engagement. What does today's student—what will engage today's students? Sorry. Yeah. We spent a lotta time doing that. (semi-structured interview)
>
> Instructor C:
> I don't want the class to be just so work intense that it takes away from the experience of learning all of it. (semi-structured interview)
>
> Instructor D:
> Overall I think it's—we do our best to try to see that students are actually growing and learning from the lesson that we teach. (semi-structured interview)
>
> I really like them, but sometimes I wonder if students will accept and believe them. The reason being is that they are actors in the segments. One of the

> common things that I hear from some students is that discrimination doesn't happen anymore. I know these videos are already being utilized by some of the lesson study group in their classes. I really hope the students like the videos and use them as a learning opportunity. (reflective journal)
>
> Instructor E:
> I see a major change in that even in the last couple of years I've taught, it just seems like it gets harder. They are less engaged. They have trouble being involved. They have trouble participating, speaking their opinion, so we talked about student engagement. We wanted to focus on student engagement as a team that we came to an agreement. (semi-structured interview)
>
> I think the first one will engage students and get them thinking about the importance of taking notes as well as cause them to evaluate how they take notes. The second video is short and to the point and is about a topic that most students need help with. I think they will like both of them. (reflective journal)
>
> I think a lot of it is the topic. I think as soon as that comes up—I know for me personally, and I was looking back to school, college, especially. When I was typically the only person of color in class. When stuff like that came up, I'm gonna be honest, I clammed up. I didn't wanna be the only one to have the stories and the examples, and to be looked at. I think in general people just kind of—I think for a lot of people it's just a touchy subject. I think they naturally are like nervous about it. (LS debrief meetings)

In addition, the primary theme that was chosen by the Lesson Study was focused on the student learning experience since the group chose the guiding theme of engaging students in authentic learning. Within the LS debrief meetings' overarching theme of evaluations (see 03.Evaluations/Feedback) as well as within the overarching theme of benefits with a code of "benefit activity/instruction" (see 05.BEN-LAI.02), participants provided observations and evaluations that focused on the engagement or lack of engagement that students experienced during the research lesson.

> Instructor A:
> Like so they were engaged in watching the video but I think that it looked to me like they just didn't know what to do.

When I counted 17, I was looking at engagement; people that were actually looking at you. Even though they may not be writing it down, I was thinking they were comprehending it.

Instructor B:
I said some seemed engaged but there was still a lot of side conversation going on. I didn't see them do a lot of like when the person was talking they wouldn't—a lot of 'em wouldn't turn. They'd just keep their heads down doing whatever they were doing.

One of my groups, they were really processing it because they were like, "Okay, so how do we… What kind of question would we write for this part?" And then they were thinking about it.

Instructor C:
So the other thing is that a lot of time I feel like I'm having to just always gather them. They were highly… they were really focused and good today but they can be highly distractible.

I thought they were really engaged in the lecture part. I was surprised actually by the questions and the hands.

Instructor D:
It's just like when you ask them to create a smart goal and they write their smart goal on the board. They tear it apart.

That was the thing that was so cool is they were all into it. It was a whole 100 percent engagement.

Instructor E:
A few times. There was just a couple times when I noticed people were getting antsy, and that was again, during lecture and going over terms.

Me too. They gave a lot of eye contact. They participated a lot in the discussion. And gave examples.

This finding is very reflective of previous research findings such as Audette (2004) which emphasizes that the focus of LS is on student learning as instructors anticipate student understanding and misunderstanding as well as observe student learning. Similarly, studies have demonstrated that effective LS relies on instructors' discussion, thinking, and observation on how students think as well as testing their knowledge about student

thinking and learning (Lewis, Perry, Hurd, & O'Connell, 2006; Lewis, Perry, & Murata, 2006).

Learning from practice/context focused. A fourth overarching theme from these qualitative data sources that is related to the theme of a focus on student learning is the theme of learning from practice in the realities of the actual work context. Through the reflective journals, semi-structured interviews, and LS debrief meetings, instructors depicted Lesson Study as an experience where they were able to learn by applying their teaching practice to the realities of their context which was their classrooms versus learning that takes place outside the actual work context. Instructors described many examples where they learned through the observation and teaching of a lesson in their classrooms. Many times the learning that took place through the observations and instructions was focused on student learning and engagement. This was depicted in all three qualitative sources within the overarching theme of "learning from practice/context focused" (see reflective journals and semi-structured interviews 07.LFP = Learning from Practice in Context and LS debrief meetings 07.LFP-IFP.01 = Insight from Practice).

> Instructor A:
> But it also helped to just see another instructor, observe another instructor present a lesson plan because you can always learn from the way they deal with it. (semi-structured interview)
>
> Well, I was able to observe the lesson plan over the past week. I thought the lesson plan worked even better than I was expecting. The majority of the students seemed to be very engaged throughout the entire class. I have only taught one class last year on note taking and this seemed to be much more engaging. (reflective journal)
>
> You see my Monday, Wednesday classes and that they didn't relate to it because of two reasons that they—well, mainly because it was that—like that when they were in high school, and so there's not really that kind of group anymore because

they're not in school eight hours a day together, so they don't really know people as well. (LS debrief meeting)

Instructor B:
When we choose the mind map, I thought, 'I don't think they are really going to get into this.' You know I was excited to see what happened but I was blown away by how involved they got in that and you they got really into it. They impressed me. I was very impressed by that. (semi-structured interview)

I have always done a lot of games and was able to keep them engaged for the most part but not on certain lessons like notes, tests, etc. After doing the video where the students write notes to the fast talking lecture, I realized the students need something to grab their attention right away. I had always done a quote or some sort of self-reflection activity but now I try to do something where they have to physically move, whether it is because they are getting into groups or taking notes on something. I have noticed it is energizing and sets a different tone throughout the class. I also hear them laughing and talking which relaxes them. I teach them about relaxed attention but doing those types of activities helps them to experience it. (reflective journal)

I like that better than this. Well I'm just saying, we tried it, didn't work—you know, I thought this was gonna come around a whole different way, didn't you? (LS debrief meeting)

Instructor C:
The first activity we did was stand up for diversity where you say, "Stand up if you've ever," and then you go through a list of things. Been bullied at school because of your different religion or whatever. Socioeconomic status. My class resisted that activity. They weren't comfortable standing up. I did it with my other class that wasn't being evaluated and they loved it. I think it might have been having people in there they didn't know. One of the other findings that we came up with was that it was improperly placed at the very beginning when they maybe needed to warm up a little bit. That was one of the activities. (semi-structured interview)

My previous diversity lesson consisted of watching "What Would You Do" videos followed by a class discussion of their own experiences with diversity. This lesson was richer in that we had them reflect more on their own experiences with stereotyping and discrimination in small groups, which allowed them to go deeper into their own individual experiences. I think closing with the "What Would You Do" videos was a great way to round out the topic, but better that they were not the center of the lesson. (reflective journal)

I thought it went so well that I'm second guessing myself, actually, because it just was the perfect lead in to the lesson when she said, "How did it go?" and they said, "Horrible." I was like, that really did work. (LS debrief meeting)

Instructor D:
Definitely I had some ideas on the lesson that I wasn't sure was going to work very well and actually it turned out pretty good in the class that I was here to observe. At the end of the day sometimes you never know until you try it. Things that didn't work well I modified. I didn't like that we didn't give them a chance to actually write down and have a sharing experience for that outline or the Cornell. (semi-structured interview)

I was glad to see that the breakfast club section of the lesson went well. There was some discussion that students would not be able to relate to this. The students were pretty active regarding the video and seemed to be able to relate to it. One of the students even brought up a different "what would you do" video and we watched that. I was happy to see that level of involvement. (reflective journal)

I think for me I really thought the students, once they were done with the mind map, they were done. When we came back we tried to do the after part of the lecture where we're covering the technology and the reviewing. To me they were just—none of them were taking notes. They were all just like, okay we packed up and we're done. (LS debrief meeting)

Instructor E:
Like when we—one of the original activities, the stand up, sit down activity we're gonna do for diversity, we just didn't like the way it transpired when it was taught. We didn't think it got to what we wanted to get to. We scratched it. (semi-structured interview)

On 11/26 we observed the second Diversity Lesson Study being taught. I definitely thought the ME Map went much better than the Stand Up Activity. The teacher demonstrated the ME Map by drawing it on the board and describing her own diversity. The students seemed interested in listening to her describe herself and when they did the activity for themselves they seemed engaged while making their own ME Map and they were very willing to share parts of their ME Map with the class. (reflective journal)

I just really felt like when they worked on it together they were way more engaged. When they did it by themselves they were less engaged. I know we had talked about possibly having them help each other on the different ones. (LS debrief meeting)

This finding is very reflective of previous research findings such as Chokshi and Fernandez (2004) highlighting that the learning from Lesson Study is very concrete because the activities of Lesson Study are embedded in the realities of the classroom. Sibbald (2009) also emphasizes that the authentic contextual nature of Lesson Study as well as its capacity to allow instructors to address pedagogical practices and content knowledge within their particular context contributes to the success of Lesson Study.

Beneficial to teaching practice. A fifth overarching theme that was gleamed from the reflective journals, semi-structured interviews and LS debrief meetings was the many benefits associated with Lesson Study. Instructors depicted Lesson Study as a very effective and valuable professional development experience that provided them with many benefits to their instructional practice. In the reflective journals and semi-structured interviews code of "lesson" (see 05.BEN-LES.02) and the LS debrief meeting code of "lesson general" (see 05.BEN-LES.01) and "lesson activity/instruction" (see 05.BEN-LAI.02), instructors emphasized the importance of Lesson Study in contributing to a creative and engaging finalized lesson that was perceived as being much better than previous lessons and one that would be used in future classes.

> Instructor A:
> Personally, I think anybody who wants to be a part of it should—I actually think it would be great for an entire department to be part of it. I mean, why not get together for an hour or two a week and develop a lesson plan? Then everybody benefits from it. (semi-structured interview)
>
> Being part of the lesson study not only helps to develop better lessons, (reflective journal)
>
> Interesting. I have a class where students don't talk to each other unless I force them to get into groups. So that's great that this lesson plan engaged students to raise their hands. (LS debrief meeting)

Instructor B:
I mean just having a product to look at. Is so much easier. Most of us can take that and go, 'oh that is what I need to teach, okay, no problem and then do our own little thing' but not having that to begin with is what I struggled with. (semi-structured interview)

I really liked the lesson and felt that the students got a lot from it. (reflective journal)

I just thought the whole—again, the whole lesson itself was way more engaging, I thought, than what I've had in the past. I don't know what other people had, but just way better. I liked that they did the outline thing and then they added to the Cornell. I don't know. I thought it was pretty good. (LS debrief meeting)

Instructor C:
Note taking [LS lesson]. That one was amazing. We did a great job on that one. [Laughter] Not to be so braggy. (semi-structured interview)

I thought Lesson Study was a valuable way to create more meaningful lessons that engage students. (reflective journal)

Well, I do think it's important that we stay on a roll because it's good to develop these good lessons. (LS debrief meeting)

Instructor D:
Creative is coming up with something hopefully that we haven't totally done before. It's a variation. It's something new. There's some new ideas to try to reach the students. That's all of our goals is to create something better for the students. Creativity is huge. (semi-structured interview)

I think it was a much better lesson than what I previously had. (reflective journal)

It was cool. I think it was probably one of the best ways for them to truly understand mind mapping. They all did it together. They truly have an understanding of it because they actually got their feet wet a little bit and played with it. (LS debrief meeting)

Instructor E:
Then the cool thing about it is I've got a lesson that I can use in the future that I think is good, and I can even tweak it if I want, depending on my class, but I've got a really good template of a good lesson that I didn't have before. (semi-structured interview)

> I really enjoyed the Diversity Lesson and I plan to use it in the future. If it wasn't for Lesson Study I wouldn't have a Diversity Lesson to use in my classes. (reflective journal)

> I thought it went well. I thought the part was really good. (LS debrief meeting)

Instructors also stressed the value of Lesson Study in assisting them to improve their teaching and become better instructors as seen in the reflective journals and semi-structured interviews code of "instruction" (see 05.BEN-INS.03) and "general" (see 05.BEN-GEN.01) as well as in the LS debrief meeting code of "growth as instructor" (see 05.BEN-GAI.03) and "lesson activity/instruction" (see 05.BEN-LAI.02). Instructors also specified that the Lesson Study step of teaching the research lesson allowed them to grow as instructors.

> Instructor A:
> I don't think I would … I mean I'm not saying I'm a great instructor, but I am saying that I am a much better instructor than I was last year, and I don't think I would be there without having been a part of this, honestly. (semi-structured interview)

> I think that this plan is going to teach about note-taking techniques in one of the most fun way possible. I know last year, I just taught reading out of the book. The videos and markers will make it more fun. (reflective journal)

> And I think it has helped me improve my teaching and so I think this is a really great study for people to get together and develop a lesson plan and the questions we all came up with for the power point, it definitely helped me expand my lecture and expand what the students were going to answer. All my classes are very different but I just want to thank you guys because it's really helped a lot. (LS debrief meeting)

> Instructor B:
> But I feel like it has been super educational and it has taught me a lot about myself as a teacher. (semi-structured interview)

> It's just powerful I don't know how to complete that particular sentence I just know it is powerful and it is empowering and it's powerful. (semi-structured interview)

As always, the positives far outweigh the negatives and I have learned so much about myself as a teacher and how to teach from it. It has been an amazing experience! (reflective journal)

Yeah, exactly. That's I think really helpful for—I think you're gonna—next time you teach I think you're gonna—it's gonna change. This is gonna change everything. I don't know. For me it has, for sure, I've just learned so much this go around. (LS debrief meeting)

Instructor C:
No. I'm grateful. I'm grateful that Miguel brought it to ACC and that I'm sure it will be a tradition now. Something that we do and to—it's elevating the department. It's elevating the quality of our instruction. I think it's a great thing. Yeah. (semi-structured interview)

My previous note taking lesson was very dry. I would teach the class the three different types of note taking strategies then have them recopy some of their existing notes using one of the strategies. The note-taking lesson we created had them apply each strategy, which I think was way more effective. (reflective journal)

I thought it went really awesome. I was really proud of the students. I love what they did. I just thought the whole thing went pretty good. I was happy with it – referring to teaching an activity. (LS debrief meeting)

Instructor D:
It definitely makes us grow as teachers. (semi-structured interview)

Overall the new lesson that was created was 100% better. I feel it gave students a much better understanding of the different note taking methods. Having them actually take notes on a video and then transcribe them to other note taking methods was very successful. Especially where mind-mapping was concerned. Students were definitely hands on and had a much better experience and learned by doing. (reflective journal)

I think it did exactly what it was supposed to do and was a nice intro and transition into what we were talking about. I think it worked pretty good [referring to observing the instruction of an activity]. (LS debrief meeting)

Instructor E:
I really think I've grown a lot. Even my chair noticed it when she observed me, which she just did my evaluation two days ago. She said, "I've noticed a big difference." My vice president said the same thing. (semi-structured interview)

> I'm feeling a little disappointed that Lesson Study is over. I believe Lesson Study helped me become a better teacher this past year and a half. (reflective journal)
>
> It's a good experience. But then once it was over, I was like, wow, that helped me grow, I think, because It kind of helped me with future observations to be like okay, just get used to this, you have to get used to it for five years anyways [referring to teaching a research lesson]. (LS debrief meeting)

Some instructors provided the recommendation that Lesson Study should be mandatory or available to all faculty in the overarching theme of recommendations "lesson study innovation" code (see 09.REC-LSI.01) found in the reflective journals and semi-structured interviews. All instructors expressed the recommendation that adjuncts and newer instructors should especially be involved in Lesson Study since it was so beneficial to learning how to be a more effective instructor. The importance of having adjuncts involved in Lesson Study was also viewed in the reflective journals and semi-structured interviews overarching theme of benefits (see 05.Benefits).

> Instructor A:
> I mean and I've said this before on video and tape that me being a newbie coming in that I've [I feel like I've grown a lot this semester]. (semi-structured interview)
>
> Instructor B:
> I definitely think the adjuncts in particular should do it because, especially if they're a reoccurring adjunct and they've been there for awhile. . . . Again, I feel like as an adjunct, if they just say, "Okay, here, show up on this day and start teaching." You're like, "Okay." You get the competencies. You get maybe someone's old syllabus. You get a book. You're like, "Go. Make a class." You're like, "I don't know what I'm doing." (semi-structured interview)
>
> Lesson Study would have been even more helpful as a new adjunct. (reflective journal)
>
> Instructor C:
> Definitely. I know that's not related to this semester, but the first time I ever participated I was an adjunct. You're gonna meet with two of the adjuncts that were involved. It helped me tremendously as an adjunct. Yeah. Maybe even more important. (semi-structured interview)

> Instructor D:
> I think that Lesson Study is a great asset for our adjuncts. I think adjuncts in general do not have time, will not spend the time creating effective lessons. . . . I think having something set will help the adjuncts and will help newer teachers, newer faculty people develop and become better teachers. I think it's a very huge aspect for the department. (semi-structured interview)
>
> I think that Lesson Study provides a great opportunity for the less experienced teachers to learn. I think adjuncts should be included when possible. (reflective journal)
>
> Instructor E:
> I definitely think something like this should be done for new teachers, at least. At least. Because when you have a group of colleagues—and then we were a good mixture of years of teaching, some veterans, some green people. I mean green meaning new. Sorry. Then just having more than one person—as faculty, you're just by your—on your own. I remember the first time I taught adjunct. They were just like, "Okay, teach this class. Here's the competencies." It's like okay. I even went to school to be a teacher, K through 12. I was overwhelmed. There's not a lot of guidance. (semi-structured interview)
>
> It was the best thing I ever did. I just really felt like I grew a lot, especially as a new teacher. (semi-structured interview)

These findings are reflective of previous research findings such as those depicted by Audette (2004), Rock and Wilson (2005), Puchner and Taylor (2006) as well as Stewart and Brendefur (2005) demonstrating that LS could serve as a valuable professional development experience since instructors considered themselves to be more effective as a result of LS and perceived LS as positively impacting their instructional practice.

Challenges to Lesson Study. A sixth overarching theme from these qualitative data sources was the identification of challenges associated with Lesson Study. In all three qualitative data sources, instructors depicted the experience of Lesson Study within the current work context as a challenging experience under the code "work intensive/stress" (see 08.CHL-WKI.02). Instructors highlighted that their current professional role was work intensive and stressful, and at times this work environment

was not conducive to the amount of work required in Lesson Study. Instructors expressed concern regarding not having a sufficient amount of time at work to complete tasks required of Lesson Study. In addition, instructors expressed concern regarding the amount of work necessary to complete dissertation study tasks such as completing the reflective journals and administering the student surveys. Some instructors shared recommendations for scaling down the amount of student surveys or changing the structure of the journals in order to make the dissertation study tasks less cumbersome within the overarching theme recommendations code of "Lesson Study innovation" (see 09.REC-LSI.01). Similarly, some instructors shared the possibility of only completing one cycle of lesson study per semester. In the field notes, the semi-structured interview and LS debrief meetings, some instructors proposed that lessons could be created in the spring semester and taught in the fall semester in order to have less stress when planning lessons since the spring teaching load is lighter.

> Instructor A:
> I guess the biggest challenge would be personal though, like just trying to keep up with doing journals. My mind is constantly thinking about it. However, it's sitting down and writing it out, for me, it would be easier to call you [dissertation task]. (semi-structured interview)

> Instructor B:
> I would continue if I had the time. It was very time-consuming this time. I know we had extra stuff because of Miguel's thing. I was happy to help, but for me, personally, I'm in so many different places in one day. It just was too much. It got to be just overwhelming. If I had the time and I could schedule 'em, I would definitely do it again. (semi-structured interview)

> I am feeling a little lost on what I should be doing and exhausted in general. I think if I were to do lesson study again I would only be able to commit to one round within the semester. I am finding this, in addition to all of the other things I am doing, is getting to be too much to manage. (reflective journal)

Instructor C:
I would definitely make it a little smaller. Then this semester was really intensive because we did the two lessons. We did a lot of surveys. It was necessary for the study, but for just pure lesson study without the research project associated with it I would maybe do one lesson max. (semi-structured interview)

I'm relieved that this segment of the Lesson Study is almost over because it was so work intense. (reflective journal)

I need a break. I need a break one semester [referring to work intensity of Lesson Study]. (LS debrief meeting)

Then we only do one a year anyway or maybe we do multiple lessons, but I don't know, it sounds a little less condensed [referring to idea of participating in Lesson Study in the spring when there is more time]. (LS debrief meeting)

Instructor D:
My schedule has been crazy this semester and it's hard for me to find time to do grading, let alone the journaling. I know it's not a lot, but it's that one more thing that's on your mind. (semi-structured interview)

I think the obstacle is time. I am frustrated that I don't have time [referring to not having enough time for preparation at work]. (reflective journal)

I got such backlash from it [referring to administering student surveys], moaned and groaned every time [dissertation task]. (LS debrief meeting)

Instructor E:
In the session. That helped us. Especially because one of the things was being just overwhelmed and being too busy. Again, we're different, because we're service faculty, and that's not fair, because right when I would be like, "Okay, let me research those videos," and then they'd say, "Your appointment's here, Instructor E," and I'd be like, "Okay." (semi-structured interview)

I was anxious and worried about getting the Cornell and Outline notes done for the lesson. Sometimes I find it difficult to get the research or assignments done because my schedule is full. (reflective journal)

Then we don't have to do journals and we don't have to do all this stuff [referring participating in LS in the future with having to complete dissertation tasks]. (LS debrief meeting)

We should do lesson study just in the spring 'cuz we . . . we teach less and it's not as busy. (LS debrief meetings)

This challenge of the time needed for the work intensity required of Lesson Study was also identified in other studies (Chokshi & Fernandez, 2004; Fernandez, 2002; Fernandez & Chokshi, 2002; Puchner & Taylor, 2006).

Through the analysis of the reflective journals and semi-structured interviews, instructors also depicted the challenges associated with the group coming to a consensus on decisions as well as group dynamics in the codes of "group consensus/size" (see 08.CHL-GRC.01) and "group dynamics" (see 08.CHL-GRD.04). Many instructors felt that at times it was very difficult for the group to agree on a decision and move forward with additional tasks. In the overarching theme of recommendations "Lesson Study innovation" code (see 09.REC-LSI.01) many instructors recommended that the LS group be a smaller group of three to four people in order to facilitate the group consensus on decisions. One instructor also believed that certain personalities within a previous pilot LS group were not compatible and recommended the importance of forming groups with people of similar dispositions and characteristics. In addition, some instructors identified the process within group dynamics of becoming familiar and comfortable with a new group as being a challenge every time you form a new LS group.

> Instructor A:
> I just felt like the outsider, I would say. They were a group. But I have a thick skin. (semi-structured interview)

> Instructor B:
> I think it was that we had different personality types and I don't think that even though we got along and it was all fine in that regard. It was professional and everything but I feel like there were personalities last time I don't want to say conflicted but were not as flexible as this group seems to be [comparing a previous pilot LS group to this LS group]. (semi-structured interview)

Maybe thinkin' about, you know, "Are these people who could potentially work well? They have a very—they don't have to have the same style. Do they have a complementary style, at least?" (semi-structured interview)

Instructor C:
Also, maybe keep the group a little smaller than ours. Maybe three to four people instead of six people because it just might be a little more efficient without having so many perspectives. (semi-structured interview)

Limit the groups to 3 or 4 members because it can take a long time to come to consensus if there are too many people. (reflective journal)

Instructor D:
My reasoning behind that is that we're counselors. It's really hard for us to look at someone and be like, "I don't like your idea." For the most part, people have pretty good ideas, but at the end of the day we have to pick; can't do everything, so we do a lot. Sometimes I just felt like we were just in quicksand or mud where you just—you can't get anywhere, can't make a decision. "Can we just make a decision and do this because I'm okay giving up my idea, but let's pick something that's cool." When you have six people it's hard to do that, so you either—and I think for me, my solution was I always wanted—I would participate, but at a certain point I would just get quiet. 'Cuz I'm like, "I just want this to move forward because we can sit here and argue about this all day, and talk about how great all of our ideas are, but we at some point you just." I think you feel just like you've just gotta go with something, and so maybe you don't—. (semi-structured interview)

There are times that I feel frustrated with Lesson Study . . . The hardest part is when you think you have come up with something really good and bring it to the group and they don't like it. The size of the group seems to always allow someone to disagree. (reflective journal)

Instructor E:
Then sometimes, in our group, very rare though, I don't think it's an issue, but sometimes we'll get stuck, and it's usually a good thing, but it's because, "OK, we have two ideas on an activity that we're going to do for the lesson, an intro. Which one do we really want?" Sometimes that gets hard because we get stuck on which one do you want to do, and I think of course, because we're all counselors too, it's like, "Well, if I pick this one, that might hurt Miguel's feelings, but if I pick this one, that might hurt Instructor C's feelings." Then I think we're cognizant of that and we're more worried of, "Am I going to hurt my friend's feelings?" (semi-structured interview)

This challenge is reflective of previous studies on LS such as Puchner and Taylor (2006) that depict the tension between autonomy and collaboration that often exists for instructors as they transition from a culture of isolation to one of collaboration. Audette (2004) also emphasizes that LS will only be successful if members have the mindset and disposition to learn with and from each other. Studies such as Rock and Wilson (2005) also depict the difficulty of instructors being able to critique each other in LS meetings.

Through analysis of all three data sources, under the overarching theme of challenge "teaching research lesson/being evaluated" code (see 08.CHL-TRL.03), all instructors also depicted the anxiety and stress experienced when being observed during the teaching of a research lesson. In the reflective journals and semi-structured interviews, two instructors also depicted the anxiety of being observed when providing feedback and perspectives in LS meetings.

> Instructor A:
> I'm sure I'll be nervous that day, but I'll suffer through it, as my mom says. I'll suffer through it. But no, I mean I think it will be what it is. I'm nervous about my students because that particular class is not the best class for group activity. Because we're doing a lot of activity in that class, and that class is more they prefer PowerPoint a little bit more. (semi-structured interview)
>
> Well, I'll just tell you. In my first journal, I wrote down that I didn't feel like part of the team. Because I was a newbie and I was adjunct. I felt that sometimes when I would say things that they would go, "[Noise]." By the next week, it felt a little bit different and so it grew. (semi-structured interview)
>
> You can do it again [referring having instructor C teach the research lesson again]. You can take my spot. (LS debrief meeting)
>
> Instructor B:
> Presenting even though I did not enjoy having a camera and five people and all that [referring to what was most beneficial about LS]. (semi-structured interview)
>
> Presenting was scary! (reflective journal)

> That's stressful. I don't know about all that, I need to mentally prepare [regarding facilitators suggestion of choosing who will teach the research lesson after the group creates the lesson]. (LS debrief meeting)
>
> Instructor C:
> And then being evaluated [referring to a challenge]. (semi-structured interview)
>
> Right now I'm feeling anxious about doing another lecture and a little overwhelmed. I'm hoping we can see if anyone else wants to do the second one. (reflective journal)
>
> I didn't even think I was nervous until my brain wasn't working. I was like oh my gosh, I must be nervous; I cannot work this computer to save my life [referring to teaching the research lesson]. (LS debrief meeting)
>
> Instructor D:
> On the other side of that, it's a little nerve wracking when you're teaching 'cuz you're getting observed by your colleagues and you're nervous. (semi-structured interview)
>
> Miguel's definitely teaching [referring to having the facilitator experience teaching a research lesson]. (LS debrief meeting)
>
> Instructor E:
> I think with Lesson Study, that's the hardest part. Maybe not for everybody, but like even the new teachers that taught this time, they just kept talking about it. They were so nervous. They were so nervous. "Oh my gosh, I'm so nervous." (semi-structured interview)
>
> You got a little pressure on you because you've got your peers there . . . so I'm almost dreading when you come to me [referring to being asked to share in LS meeting]. (semi-structured interview)
>
> I'm glad I'm not teaching the lesson! I 'm not saying that I don't appreciate what I get out of Lesson Study; I just remember how nervous I was last year when I had to teach in front of my peers. (reflective journal)
>
> It's scary but then at the end, like for me, I was so nervous and just terrified [referring to teaching the research lesson]. (LS debrief meeting)

This challenge is consistent with findings from previous research that emphasizes the anxiety and stress experienced by American instructors being observed teaching a lesson (Chokshi & Fernandez, 2004; Fernandez, 2002; Stewart & Brendefur, 2005). Although

this was a challenge, when reviewing the overarching theme of benefits in all three data sources, many instructors believed the experience of teaching a research lesson in front of their colleagues allowed them to grow as instructors.

Structure within Lesson Study. One overarching theme that was found within the semi-structured interviews was the theme of structure. Three participants experienced Lesson Study as a very structured approach to professional development. Three participants also viewed the finalized lessons as being very structured and detailed. This was depicted in the semi-structured interviews overarching theme of structure within the "Lesson Study process" (see 02.STR-PRO.01) and "lesson plan" codes (see 02.STR-LEP.02) as well as in the LS debrief meetings code of "Lesson Study process" (see 02.STR-LSP.01).

> Instructor B:
> Then we finally finalized exactly what activities we wanted to do, . . . Really planning all of that out, and then formulating that. Then running through it and feeling comfortable with it, feelin' like it flows and that kinda thing – lesson plan. (semi-structured interview)
>
> That was the first cycle, right. We decided first which thing are we gonna tackle here? Which subject? Which topic? We all agreed that notes was one of the ones that we all didn't think was a very strong lesson. We wanna make the weakest one the best one or whatever. We decide on that. Then the next thing, basically, was to figure out, well, what do we want our students to learn? What is the outcome of it all? Let's try to figure out where we wanna go. We spent some time figuring out what are we doing right—sorry. What are we doing right and how in our classes? What do we want them to learn? - We came to some agreements with that. We basically want them to learn the basic learning style—I mean, sorry, note-taking styles and just be able to identify them and use them and feel comfortable with them and learn how to take notes. That's basically the whole lesson. . . Then presenting it to the class. Hoping it goes well. [Laughter] Then debriefing [Lesson Study process]. (semi-structured interview)
>
> Instructor C:
> For me, it's been, well, first of all the structure of it. It has a pretty inherent structure [Lesson Study process]. (semi-structured interview)

> We actually go into the classroom then with a detailed written outline of what we're gonna do in each activity. . . . It's just organized and very—yeah. Thought out. Yeah – lesson plan. (semi-structured interview)
>
> Instructor E:
> That's basically how it worked. It was very organized, which I liked. Miguel was very organized. Everything was in writing. He made sure that everybody got—had an opinion and a voice [Lesson Study process and lesson plan]. (semi-structured interview)

What Changes in Their Instructional Practices Did the College Success Course Instructors Make as a Result of Participating in Lesson Study?

A seventh overarching theme from the reflective journals, semi-structured interviews, and LS debrief meetings that is related to the theme of benefits was the theme of change in counselors' instructional practices as well as a change in personal factors influencing instructional practices. Instructors depicted Lesson Study as an experience that changed them as instructors and their instructional practices. Through the analysis of the reflective journals and semi-structured interviews, instructors described four unique changes in their instructional practice and these were coded as:

1. preparation (see 06.CHA-INP.01 > PRP)
2. teaching approach (see 06.CHA-INP.01 > TEA)
3. focus on student learning goals (see 06.CHA-INP.01 > SLG)
4. focus on evaluating instruction (see 06.CHA-INP.01 > EOI)

Through the analysis of the LS debrief meetings, instructors described changes in their instructional practices under the overarching theme of change "teaching" code (see 06.CHA-TEA.02).

Change in preparation. First, instructors began to dedicate more time to the preparation of lessons such as spending more time thinking about how to teach a lesson throughout the day as well as dedicating more time to devising more detailed and engaging lessons. One key component of Lesson Study is the time dedicated to preparing lessons that will address student learning goals.

> Instructor A:
> Something will come up, and I'll be, like, "I could use that in a lesson study." Then that goes back to that idea files where I started doing clips and just keeping track of, "Oh, I could use this in this chapter or this and that chapter." I think about it all the time, and I think it's because we meet every week. If we didn't meet … I didn't think about it last year. But because we're meeting. (semi-structured interview)
>
> I have noticed that since I became a part of this group, I am now actively taking notes when I watch t.v. I am actively thinking about clips, etc. that I can use to teach lessons. (reflective journal)
>
> Instructor B:
> This was more helpful creative-wise. It just made me even more thinking outside the box with my own class. (semi-structured interview)
>
> The whole concept of student engagement has really made me look at each of my lessons to see what I can change. I have been trying to think of creative ways to keep the students engaged, something I had always thought about but was never exactly sure how to do it. (reflective journal)
>
> Instructor C:
> Just doing more lesson planning in general. I mean I've always done lesson planning just approaching it more in this way. Just making sure, as I said, I'm covering all the modalities and that I've got a lot in the lesson. I don't always get to it. (semi-structured interview)
>
> I am much more mindful about planning activities that get the students engaged. (reflective journal)
>
> Instructor D:
> Lesson study definitely impacted me in several ways. The way that I develop lessons is much more thorough now. (reflective journal)

Instructor E:
Well yeah, and now I have better lessons, I believe, to teach when I teach. . . I've got resources. I know who to go to for help. Like I said, spending more time on it, and not just doing it—same old thing. (semi-structured interview)

As a result of lesson study I approach lesson planning much earlier. (reflective journal)

Change in teaching approach. Second, instructors also began to attempt new teaching approaches in their classrooms that were learned through Lesson Study as seen through all three data sources such as providing more time for students to have an opportunity to answer a question or infusing more engaging activities at the start of a lesson. Instructors also attempted to facilitate activities that were created through Lesson Study in their classes. Another key component of Lesson Study is instructors attempting different learning activities and teaching approaches within the realities of their classrooms during the facilitation of the research lesson.

Instructor A:
One of the exercises we had them or they asked me to have them not be with their normal partner, group. I saw something completely different in these students by doing that. That's not something I would have done before. (semi-structured interview)

I have decided to try to slow down and give students more time to share. This is a result of being part of the lesson plan study! (reflective journal)

Well you know I'm like in the one right next door to you and I noticed when I did this lesson plan, like I noticed people weren't… They were like on their phone and they were doing whatever and all I had to do was actually walk around. Sometimes I actually went through the aisles and then all of a sudden they like snapped into their group work. But I was, you know, a newbie I was kind of like sticking up at the front but it was interesting. And it just happened this week when I walked around, like they just (inaudible). (LS debrief meeting)

They were talking about it or I could hear it. The thing that I got off watching your video beforehand, what I did differently for my Monday, Wednesday class was I had just put the slide up, put them into pairs and then it didn't go so well,

but when I watched you present it you slowly made them do independent thought before telling them that they would go into pairs. I think that made, I feel like, that made a difference personally. I was asking them "Okay, has this ever happened to you? Think about it." "Has this happened to you? Think about it. Have you seen this? Think about it." Not tell them that they're going into pairs and then have them talk. That's just my opinion, but I saw a difference in the way you presented it then the way I did on Monday, Wednesday. (LS debrief meeting)

Instructor B:
I mean I told you the biggest thing for me has been the structure of the class and how I am dividing the time and making sure they are doing more activities. (semi-structured interview)

I changed other lectures this week because of the lesson study that we are creating. I modeled my Reading and Memory lecture off of the lesson study to make it more engaging. (reflective journal)

What I loved about it—again, it was completely spontaneous, but what I loved about it—I love when I can take something that we've already learned [referring to learning taking place in LS] and put it into something new that we're learning. (LS debrief meeting)

Instructor C:
I think it's definitely both because Lesson Study has helped me integrate a model of curriculum development that is helping me to be that more organized, more on task teacher. (semi-structured interview)

Oh, the questions I was asking. They were less rhetorical and more . . . I always ask questions but I was more creating the space for them to answer. (semi-structured interview)

I'm finding that creating the lesson [referring to LS research lesson] is helping me to create more engaging lessons for my classes overall. (reflective journal)

I probably was a little more deliberate. And maybe waited a little longer. Typically the same students talk and I move through it quicker. I wanted it to be more methodical for this one. (LS debrief meeting)

Instructor D:
It gives me an opportunity to try things [referring to Lesson Study]. (semi-structured interview)

I used the note taking lesson that we created. I modified it slightly by having them get into groups and draw on the giant white post-it notes for every kind of note taking method. (reflective journal)

> Instructor E:
> It got me outside my box to do the cheesy stuff. I'm not the cheesy type teacher that wants to do those weird activities, and all the little fun foo-foo stuff. It was just like oh my god, that was fun, and they liked it. (semi-structured interview)
>
> As a result of participating in lesson study for the past year, I feel that I make a more conscious effort to make sure I use more engaging activities when I teach. (reflective journal)

Change in focus on student learning goals. Third, as seen through the analysis of the reflective journals and semi-structured interviews, three instructors began to place more attention on the student learning goals and objectives for the lesson as a result of the lesson creation process experienced in Lesson Study. Another key component of LS is the identification of student learning goals which guide the creation of a research lesson.

> Instructor B:
> And making sure that, you know, I've really tried, even in my own stuff, even though I have really tried to do this, going back and looking up, "what do I want them to get out of this?" that's the big question, I ask myself now, which I was before, but I don't feel like I was as refined about it as I am now. (semi-structured interview)
>
> Instructor C:
> just being really clear on the goal [referring to student learning goal]. (semi-structured interview)
>
> Instructor E:
> But with Lesson Study, we really look at, first of all, we revisit the competencies that we're supposed to teach, so it reminds me, "Oh yeah, oh yeah, gosh, I'm supposed to be teaching on critical thinking and creative thinking and I'm supposed to be teaching on interpersonal relationships, and I really don't, so I need to work on that." That's another thing. It makes you really look at things that I probably wouldn't do before. (semi-structured interview)
>
> I think I will always approach lesson planning differently as a result of lesson study. I always ask myself: What is the objective and how am I engaging students? (reflective journal)

Change in focus on evaluating instruction and student learning. Fourth, as seen through the analysis of the reflective journals and semi-structured interviews, all the instructors also began to place more attention on evaluating the effectiveness of their instruction as well as began to feel more proficient in this task. Another key component of Lesson Study is evaluating the effectiveness of a lesson as well as student learning, and for this reason in Lesson Study a lesson is referred to as a "research lesson."

> Instructor A:
> Just that I think about it all the time. Last year, I did think about the after, like I'd say something, "Oh, why did I say that?" (semi-structured interview)
>
> Instructor B:
> Actually, I have my own private practice. It would carry over to that, even, that I would think about how I engaged a student. Then I would use that same tactic with somebody I was working with individually. It did a lot for me. (semi-structured interview)
>
> I also asked my students what they thought and they had similar feedback. (reflective journal)
>
> Instructor C:
> Yeah but I've done that since so too because I think it's really important to genuinely see what they're thinking about this stuff not just have the verbal ones chirp out their answers but really assess the class and where they're at with it. (semi-structured interview)
>
> I am more attentive while teaching other lessons to see how engaging they are. (reflective journal)
>
> Instructor D:
> I think more along the line of the trying to implement more testing, in terms of seeing where they're at and presenting a lesson and then testing them on it, and see if they've actually had movement. I think I implemented a little bit more data, trying to do a little bit more research on occasion. (semi-structured interview)
>
> Instructor E:
> I think with Lesson Study, because it was, like, "OK, you have to go," and then you got a little pressure on you because you've got your peers there, and then it's, like, "OK, what do you do for note-taking? Now what do you do for note-taking?" and it's, like, "Oh, you're making me think about it and then you're making me

> evaluate it too, in a way." Like I'm doing an evaluation of, "Yeah, well, um, yeah, I have this PowerPoint," and then it's almost like, "Wow, it's kind of weak. I don't want my peers to see it." It makes you really think about it, I think, when you had to go to the meetings. (semi-structured interview)
>
> I believe I am a better observer of student behavior as a result of observing students in other teachers' classrooms using protocols prescribing what behaviors to observe and monitor. I am constantly noticing students' behavior even more and I am able to make sound judgments on whether students are bored or engaged with a lesson. (reflective journal)

Change in insights. There were also changes in personal factors that undoubtedly influenced the changes in these instructional practices that were found within the analysis of all three data sources. Instructors depicted many changes of insight regarding their instructional practices such as a realization that lessons needed more activities or that the preparation of lessons needed to begin much earlier. The overarching theme of change code of "insight" (see 06.CHA-IST.02) in the reflective journals and semi-structured interviews reflected this depiction. In the LS debrief meetings this depiction was found in the code "new perspectives/accept idea" (see 06.CHA-NEP.01) under the overarching theme of change in teaching approach.

> Instructor A:
> Well, I just feel—well, I mean I think it helps to feel like I can have my own creativity in the class which I didn't know before. Well, because then that makes it more about you [referring to realizing she could go outside the textbook]. (semi-structured interview)
>
> As I think I mentioned earlier, sometimes I tend to move on too quickly rather than allowing silence. Sometimes it takes students a few minutes to gain the courage to share. (reflective journal)
>
> But I do like the idea of having a template overall. I mean I get what Instructor B's saying, you know, to actually do it, I mean that has its own merit as well, and I think it's just sort of like knowing your students. I think my Tuesday/ Thursday could have gotten that much better than both of my Monday/ Wednesday classes. I think my Monday/ Wednesday were a little confused and I think if I had a

template for them they would have understood it more clearly, would have been more clear. (LS debrief meeting)

Instructor B:
That's something I've noticed, even though I did activities, some random or weird activities, fun, I noticed I was lecturing too long and now I notice I try to lecture a few…. this is all because of the way we laid out the lesson study, the notes lecture. Where they did something, then we lecture for a while, and then we do something and then lecture and then we do something I found that this is way better… and I'm having to go back and… (semi-structured interview)

What I realized is that it is not that much different. If I want someone to learn the skills they need, I need to get them engaged. I have always known that but lesson study has defined it more clearly for me. (reflective journal)

Instructor C:
Well, it has me more aware of integrating all the different learning styles into every single lesson. (semi-structured interview)

I also have noticed that it is better to have too much planned than too little because you can always cut stuff out, but it's not always easy to add to a lesson on the fly. (reflective journal)

It just makes me realize that all the lessons need to be that interactive and that full. (LS debrief meeting)

Instructor D:
I think Lesson Study has definitely impacted me in a way where just of more ideas and better understanding of how to reach students in different ways. (semi-structured interview)

I learned that students really enjoyed creating something and then sharing it with the class. (reflective journal)

Instructor E:
Just to really spend more time on it, and spend more time on researching. Instead of just, "Okay, I'll spend 20 minutes tweaking my PowerPoint, adding new pictures, finding better videos." With lesson study I've learned that I have to take the time if I want to produce quality lessons, engaging lessons, I have to take the time. It has to be more than 20 minutes, 30 minutes at a time. It has to be where I can really spend time and think about this. That was really, really valuable that I got from it. (semi-structured interview)

My role as a faculty member has been clearly defined now. I realize that my true purpose as an instructor is to be accountable for student engagement and learning.

> If I am not preparing, evaluating student behavior and reflecting on what is happening before, during and after a lesson, activity, or assignment then I am not doing my job. (reflective journal)
>
> What I have learned when teaching these lessons is that students seem most engaged when there is variety within a lesson. Meaning-- having different activities that involve action and discussion, lecture, and videos. (reflective journal)
>
> I don't connect with it but the students do. They seem to enjoy it because they're doing something and so that's why with doing outline, trying it, then doing Cornell, trying it and then… That's why it's so important to me. Because I think that when they're doing it they're more involved and when you put them in the groups to do the Cornell they were very involved too, they were helping each other [referring to changing her view about the benefits of the mind map activity]. (LS debrief meeting)

Change in motivation. Instructors also depicted changes in their motivation such as being inspired to be more creative and develop more engaging lessons and improved learning opportunities as well as planning to facilitate new strategies or lessons learned in Lesson Study. Instructors also depicted their motivation to create more lessons through Lesson Study. Instructors viewed LS as an experience that helped positively influence and change their insights and motivation. This depiction was found within all three qualitative data sources in the "motivation/future goals" code (see 06.CHA-MOT.03).

> Instructor A:
> The creativity of it is the greatest part because it has inspired me to be better teacher, to be more creative. I ask my students to be more creative. That, to me, I guess, has been the best part of it. (semi-structured interview)
>
> But I think you can see the impact the study had on me as far as influencing me to think outside the box and try to be more creative. (reflective journal)
>
> Yes, I would totally do this again [referring to teaching the LS diversity lesson]. (LS debrief meeting)
>
> Instructor B:
> So using that. I don't know what the defining moment was but it has completely sparked my creativity in a whole other way. Like I was saying today, doing the

relationship thing, and having them start talking to each other and getting into pairs that is not something that I, like I taught this twenty something times now and I have never done that and because of this it has really sparked my creativity within and how can I make this more exciting and fun.- I can't think of that word, it just changed my whole idea about how to setup a lesson so that is really the big thing that has changed for me is I don't. (semi-structured interview)

Being in lesson study has been very inspirational and has made me be more creative in my classes. (reflective journal)

This is totally inspired by this semester and ever since we've created this one [referring to LS note-taking lesson] it's made me change everything (laughs) else and my one today really sucked so we need to do tests next [referring to continuing Lesson Study]. (LS debrief meeting)

Instructor C:
You look at all your other lessons and you're like, "Okay. They all need to come to this standard [referring to LS standard]." Yeah. Uh-huh. (semi-structured interview)

I'm hoping that we continue. Yeah. I'd like to do a lesson study for all of our lessons for college success and then have that available for us and the other faculty and adjuncts. (semi-structured interview)

And really want to do lesson planning for all of our lessons! (reflective journal)

I mean I'm going to try that again, to be more deliberate like that [referring to how she taught the research lesson]. (LS debrief meeting)

Instructor D:
Then if we can improve it, we can improve a lesson that we know is boring and make it more engaging, more interesting for the students then that just encourages you to work on your other lessons to make them better. (semi-structured interview)

Instructor E:
It's really caused me to try to be more creative, and really try to put a lot of variety in my lessons. (semi-structured interview)

I definitely want to start planning and preparing much earlier compared to prior years. (reflective journal)

So I actually like the template and I'm going to use it. (LS debrief meeting)

Studies such as those depicted by Audette (2004), Rock and Wilson (2005), Puchner and Taylor (2006) as well as Stewart and Brendefur (2005) demonstrate that instructors perceived LS as positively impacting their instructional practice.

How, and To What Extent, Will Lesson Study Impact the Self-Efficacy of the College Success Course Instructors?

Change in confidence. Finally, instructors also depicted a change in the personal factor of confidence as a result of participating in Lesson Study as seen through the analysis of all three data sources. Many instructors experienced increased confidence as a result of receiving positive feedback from other instructors in LS meetings as well as from the expert mentor during the expert mentor session. Instructors also experienced increased confidence as a result of realizing that their teaching approaches were similar to other more senior instructors while comparing strategies in LS meeting discussions as well as when observing other instructors teach. This depiction was found in all three qualitative data sources within the overarching theme of change code of "confidence" (see 06.CHA-CNF.04).

> Instructor A:
> I became more confident. (semi-structured interview)
>
> I mean and I've said this before on video and tape that me being a newbie coming in that I've—I feel like I've grown a lot this semester. (semi-structured interview)
>
> I felt like some of my ideas meshed with the other more seasoned instructors which gave me a bit more confidence in being a part of this group. (reflective journal)
>
> I can't tell you how much this has helped me grow. (LS debrief meeting)
>
> Instructor B:
> Again, I don't know what everybody else will say, but I know for me, as an adjunct, for being here—I mean, I've been here awhile. It was really helpful for

me and just made me really a lot more confident as a teacher. I realized I was doing things that—you know, I look at my colleagues. I think that they're awesome. I would realize, "Oh, I'm doing things like them, too. Okay, maybe I'm not so bad. Maybe I'm awesome, too." . . . Rather than going, "Oh, I don't know what I'm doing. I'm just wingin' it here and just flying by the seat of my pants." (semi-structured interview)

I found that it [referring to Lesson Study] has been helpful in building confidence. (reflective journal)

It's alright. We are facing fears [referring to teaching research lesson]. (LS debrief meeting)

I don't even have enough. I took notes [rattles papers] like that's how much. You know? I feel buried as well, and just the feedback on how I teach and what I'm doing—what right and what I can change. It was extremely helpful because I just felt like I don't know where I'm at here. I don't know if I'm doing what I'm supposed to be doing. I'm getting reviews and things like that, but it's not the same as having somebody come in and say, "Okay, here's what you're doing in the classroom. Here's a specific example that you're doing really well. This is an awesome thing for teaching" or "This is not. Maybe try this instead or." Just to have that feedback. I like very concrete things like that, so I found it really helpful. He's just so cool. (LS debrief meeting)

Instructor C:
Yeah, for sure. Almost like more of a professional teacher rather than an expert. I've worked here because I'm a subject matter expert. I know about counseling. I've got education in it and then communication also. That was my credential, that and wanting to serve. (semi-structured interview)

It's rewarding to improve as a teacher. (reflective journal)

Instructor D:
Yes. [referring to question do you feel more confident as a teacher] You never really—you get your feedback from your supervisor and stuff, but watching other people and be like, "They're class is pretty similar to mine" or "My class" it gives you just an idea of just seeing other people's classes that things are maybe normal. Things that you may have worried about in your class like "this is not good that students are still picking up their phone" or whatever. (semi-structured interview)

Instructor E:
It was the best thing I ever did. I just really felt like I grew a lot, especially as a new teacher. (semi-structured interview)

> I feel more confident in the classroom. I feel more comfortable in my skin. I feel better prepared. (semi-structured interview)
>
> Especially as the new teacher just finishing a year as a residential, I feel like I've grown so much, Miguel, really. I really have. If I had to put it on a scale, I could honestly probably say I've grown 80% as a teacher in just this year. I think without that Lesson Study, I can say maybe I've grown 30%. But with Lesson Study, I could honestly tell people, and I do, I've grown 80% as a teacher. (semi-structured interview)
>
> I feel more confident in my lesson planning and instruction compared to last year. (reflective journal)
>
> It's a good experience. But then once it was over, I was like, wow, that helped me grow, I think, because It kind of helped me with future observations to be like okay, just get used to this, you have to get used to it for five years anyways. And so it was just really neat to help boost a little confidence, too, I think- referring to having taught a research lesson. (LS debrief meeting)

Many previous findings have associated the practice of Lesson Study with increased teacher self-efficacy (Puchner & Taylor, 2006; Rock & Wilson, 2005; Sibbald, 2009). The changes in instructional practice as well as in the personal factors of motivation and insights could also be associated with a positive change in confidence since these changes most likely would be associated with someone who has the self-efficacy to make these changes.

Quantitative Data

The researcher analyzed the quantitative data sources in the following order: (1) student survey close-ended questions; (2) student survey open-ended questions' codes; and (3) Teacher's Sense of Efficacy Scale (Pre/Post).

Student Survey Closed-Ended Questions

The analysis of the student survey quantitative data source as well as the embedded qualitative component provided information that assisted the researcher to partially answer all three research questions.

Brief analysis description. Using the data that was collected from the 1,235 student surveys that were administered in 77 class sessions from the ten SCS100 classes, the researcher used SPSS statistical software to discover the total mean scores and standard deviations for each of the five items on the student survey for all SCS100 instructors' combined non-Lesson Study class sessions as well as for all SCS100 instructors' combined note-taking Lesson Study lessons and diversity Lesson Study lessons. Using the SPSS statistical software, the researcher also discovered the mean scores and standard deviations for each of the five items on the student survey for each individual instructor's combined non-Lesson Study class sessions as well as the mean scores and standard deviations for each individual instructor's combined note-taking Lesson Study lessons and combined diversity Lesson Study lessons.

Then, independent *t*-tests were generated in order to determine the significance between the mean scores on the five survey items of all the SCS100 instructors' combined note-taking lessons that were created through Lesson Study with all the SCS100 instructors' combined lessons that were not created through Lesson Study. Independent *t*-tests were also generated in order to determine the significance between the mean scores on the five survey items of all the SCS100 instructors' combined diversity lessons that were created through Lesson Study with all the SCS100 instructors' combined lessons that were not created through Lesson Study. Second, independent *t*-

tests were generated in order to determine the significance between the mean scores on the five survey items for each individual instructor's combined note-taking lessons that were created through Lesson Study with each individual instructor's combined lessons that were not created through Lesson study. Independent *t*-tests were also generated in order to determine the significance between the mean scores on the five survey items for each individual instructor's combined diversity lessons that were created through Lesson Study with each individual instructor's combined lessons that were not created through Lesson study.

Results of LS lessons vs non-LS lessons. The following tables and charts describe the students' ratings of the five items on the student surveys for the all instructors' combined lessons created through Lesson Study (note-taking and diversity) compared to the all instructors' combined lessons not created through Lesson Study. Item 1 on the student survey had the students rate if the lesson engaged them and Item 2 on the student survey had the students rate if the lesson engaged them more than previous lesson in the class using a Likert-type scale from 1-10 (1-Strongly Disagree, 3- Disagree, 5- Somewhat Disagree, 6-Somewhat Agree, 8-Agree, 10-Strongly Agree). Item 3 on the student survey had the students rate if the topic of the lesson was interesting and Item 4 on the student survey had the students rate if the topic of the lesson was more interesting than previous lessons in the class, also using a Likert-type scale from 1-10 (1-Strongly Disagree, 3- Disagree, 5- Somewhat Disagree, 6-Somewhat Agree, 8-Agree, 10-Strongly Agree). Item 5 on the student survey had students rate the quality of the lesson's learning experience in comparison to most lessons in previous SCS100 sessions using a Likert-

type scale from -5 to +5 (-5 Much Worse, -3 Worse, -1 Somewhat Worse, 0 About the Same, +1 Somewhat Better, +3 Better, +5 Much Better).

The mean score for all five items on the student survey for the combined note-taking lessons that were created through Lesson Study were higher than the mean scores for the combined lessons not created through Lesson Study.

Table 4

Note-Taking Combined LS Lessons vs Non-LS Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	991	7.63	2.015	.064
	Note-taking LS	149	7.85	2.100	.172
Engagement Compared	Non-Lesson Study	990	6.88	2.276	.072
	Note-taking LS	148	7.36	2.376	.195
Interest	Non-Lesson Study	988	7.53	2.101	.067
	Note-taking LS	148	7.56	2.259	.186
Interest Compared	Non-Lesson Study	986	6.88	2.279	.073
	Note-taking LS	148	7.16	2.402	.197
Quality	Non-Lesson Study	934	1.87	2.018	.066
	Note-taking LS	144	2.54	1.982	.165

This difference between the mean scores for two of the five student survey items for the Lesson Study note-taking lessons compared to the non-Lesson Study combined lessons were found to be statistically significant. Question 2 which asked if today's lesson engaged me more than previous lessons in this class was found to be statistically significantly at $t = -2.391$, $p = .017$. Question 5 which asked how students would rate the quality of today's SCS100 class learning experience in comparison to most lessons in previous SCS100 was also found to be statistically significant at $t = -3.731$, $p = .000$. It

appears that students found the note-taking lesson created though Lesson Study as more engaging as well as providing a higher quality of learning experience than those combined lessons that were not created through Lesson Study.

The mean score for all five items on the student survey for the combined diversity lessons that were created through Lesson Study were higher than the mean scores for the combined lessons not created through Lesson Study.

Table 5

Diversity Combined LS Lessons vs Combined Non-LS Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	991	7.63	2.015	.064
	Diversity LS	80	8.23	1.876	.210
Engagement Compared	Non-Lesson Study	990	6.88	2.276	.072
	Diversity LS	79	7.72	2.100	.236
Interest	Non-Lesson Study	988	7.53	2.101	.067
	Diversity LS	80	8.38	1.796	.201
Interest Compared	Non-Lesson Study	986	6.88	2.279	.073
	Diversity LS	79	7.85	2.088	.235
Quality	Non-Lesson Study	934	1.87	2.018	.066
	Diversity LS	76	2.55	1.976	.227

This difference between the mean scores for all five student survey items for the Lesson Study diversity lessons compared to the non-Lesson Study combined lessons were found to be statistically significant. Question 1 which asked if today's lesson engaged me was found to be statistically significant at $t = -2.533$, $p = .011$. Question 2 which asked if today's lesson engaged me more than previous lessons in this class was

found to be statistically significantly at t = -3.196, p = .001. Question 3 which asked if the students found today's topic interesting was determined to be statistically significant at t = -3.489, p = .001. Question 4 which asked if students found today's topic more interesting than previous topics in this class was also determined to be statistically significant at t = -3.638, p = .000. Question 5 which asked how students would rate the quality of today's SCS100 class learning experience in comparison to most lessons in previous SCS100 was also found to be statistically significant at t = -2.843, p = .005. It appears that students found the diversity lesson created though Lesson Study as more engaging as well as providing a higher quality of learning experience than those combined lessons that were not created through Lesson Study. In addition the diversity topic appears to be a more interesting topic than topics found in non-Lesson Study lessons.

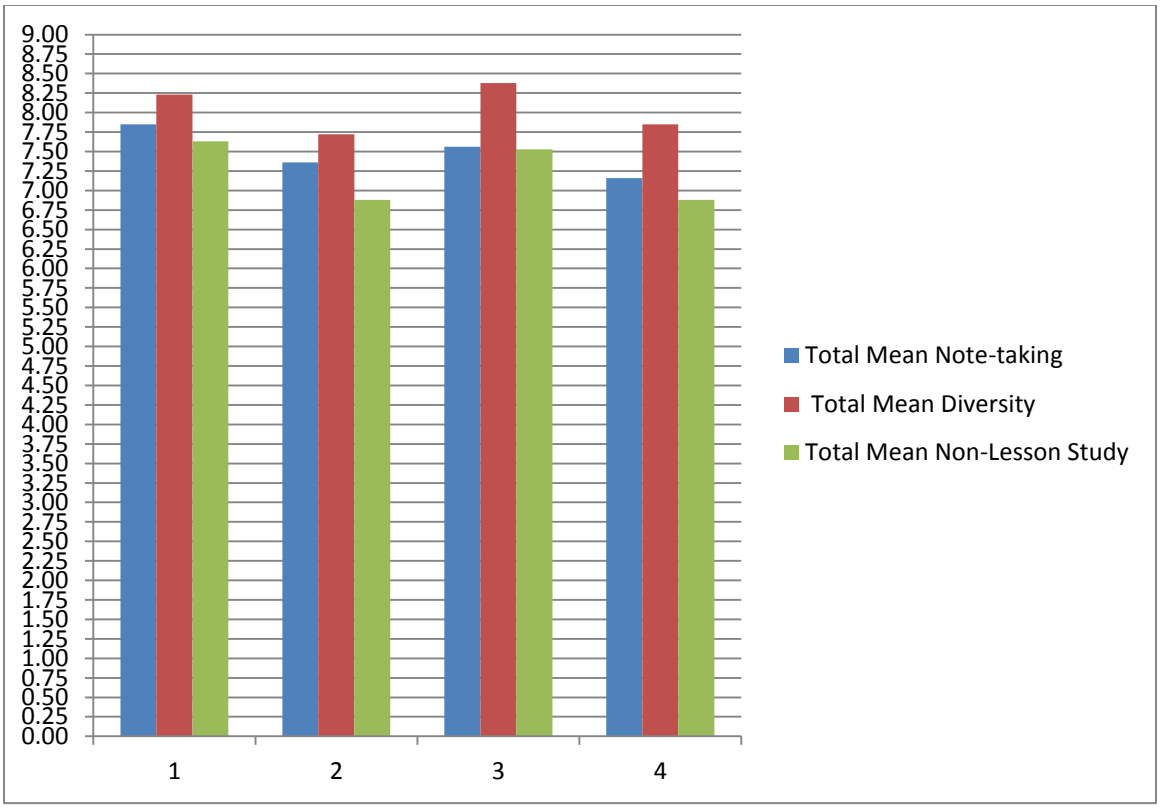

Figure 2. Combined LS lesson vs. combined non-LS lessons question 1-4.

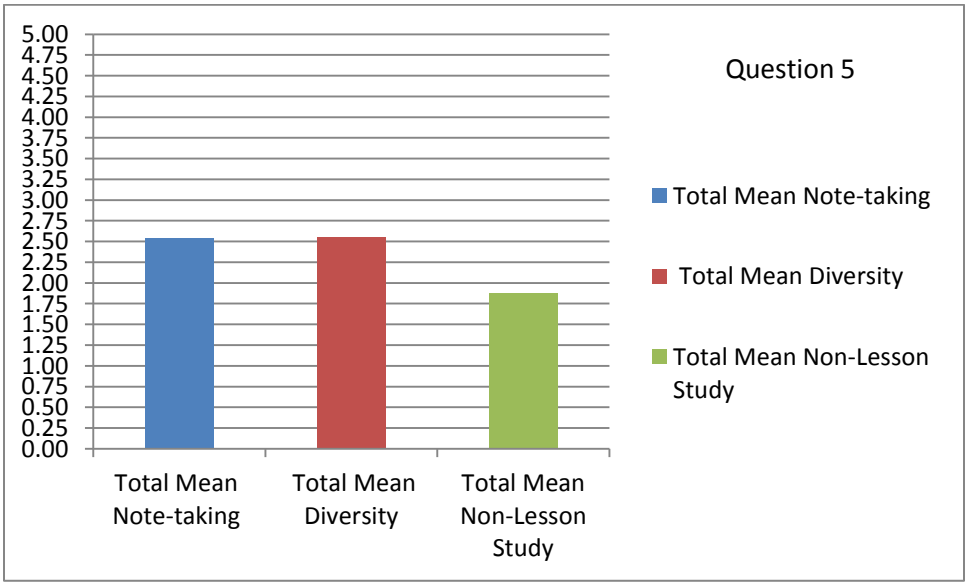

Figure 3. Combined LS lesson vs. combined non-LS lessons question 5.

Results of each instructor's LS lessons vs. non-LS lessons. The following tables and charts describe the students' ratings of the five items on the student surveys for each individual instructor's lessons created through Lesson Study (note-taking and diversity) compared to the lessons not created through Lesson Study.

Instructor A taught three note-taking lessons that were created through Lesson Study and two diversity lessons that were created through Lesson Study. The mean score for three of the five items on the student survey for the instructor A's combined note-taking lessons that were created through Lesson Study were higher than the mean scores for her combined lessons not created through Lesson Study. Items 1 and 2 which pertained to engagement as well as item 5 which pertained to the quality of the learning experience all had higher mean scores for the note-taking lesson. Items 3 and 4 which related to the level of interest in the topic had lower mean scores for the note-taking lesson.

Table 6

Instructor A: Note-Taking LS Lessons vs Non-Lesson Study Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	315	6.88	2.217	.125
	Note-taking LS	57	7.12	2.221	.294
Engagement Compared	Non-Lesson Study	315	6.30	2.332	.131
	Note-taking LS	56	6.68	2.405	.321
Interest	Non-Lesson Study	314	6.77	2.333	.132
	Note-taking LS	57	6.56	2.268	.300
Interest Compared	Non-Lesson Study	311	6.29	2.421	.137
	Note-taking LS	57	6.28	2.440	.323
Quality	Non-Lesson Study	289	1.04	1.933	.114
	Note-taking LS	55	1.98	1.871	.252

This difference between the mean scores for one of the five student survey items for instructor A's Lesson Study note-taking lessons compared to her non-Lesson Study combined lessons was found to be statistically significant. Question 5 which asked how students would rate the quality of today's SCS100 class learning experience in comparison to most lessons in previous SCS100 was also found to be statistically significant at $t = -3.311$, $p = .001$. It appears that students found instructor A's note-taking lesson created though Lesson Study as providing a higher quality of learning experience than her combined lessons that were not created through Lesson Study.

The mean scores for all five items on the student survey for the instructor A's combined diversity lessons that were created through Lesson Study were higher than the mean scores for her combined lessons not created through Lesson Study.

Table 7

Instructor A: Diversity LS Lessons vs Non-Lesson Study Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	315	6.88	2.217	.125
	Diversity LS	42	8.00	2.118	.327
Engagement Compared	Non-Lesson Study	315	6.30	2.332	.131
	Diversity LS	41	7.51	2.192	.342
Interest	Non-Lesson Study	314	6.77	2.333	.132
	Diversity LS	42	8.26	2.001	.309
Interest Compared	Non-Lesson Study	311	6.29	2.421	.137
	Diversity LS	41	7.98	2.115	.330
Quality	Non-Lesson Study	289	1.04	1.933	.114
	Diversity LS	39	2.36	2.218	.355

This difference between the mean scores for all five student survey items for instructor A's Lesson Study diversity lessons compared to her non-Lesson Study combined lessons were found to be statistically significant. Questions 1 and 2 relating to engagement were found to be statistically significant: Question 1 at $t = -3.085$, $p = .002$ and Question 2 at $t = -3.155$, $p = .002$. Questions 3 and 4 pertaining to the level of interest in the topic were also determined to be statistically significant: Question 3 at $t = -3.951$, $p = .000$ and Question 4 at $t = -4.257$, $p = .000$. Question 5 pertaining to the quality of the learning experience was found to be statistically significant at $t = -3.913$, $p = .000$. It appears that students found instructor A's diversity lesson created though Lesson Study as providing a higher quality of learning experience than her combined lessons that were not created through Lesson Study. In addition, when students compared the diversity lessons to the non-Lesson Study lessons, students found the diversity lesson to be more engaging as well as the diversity topic to be more interesting.

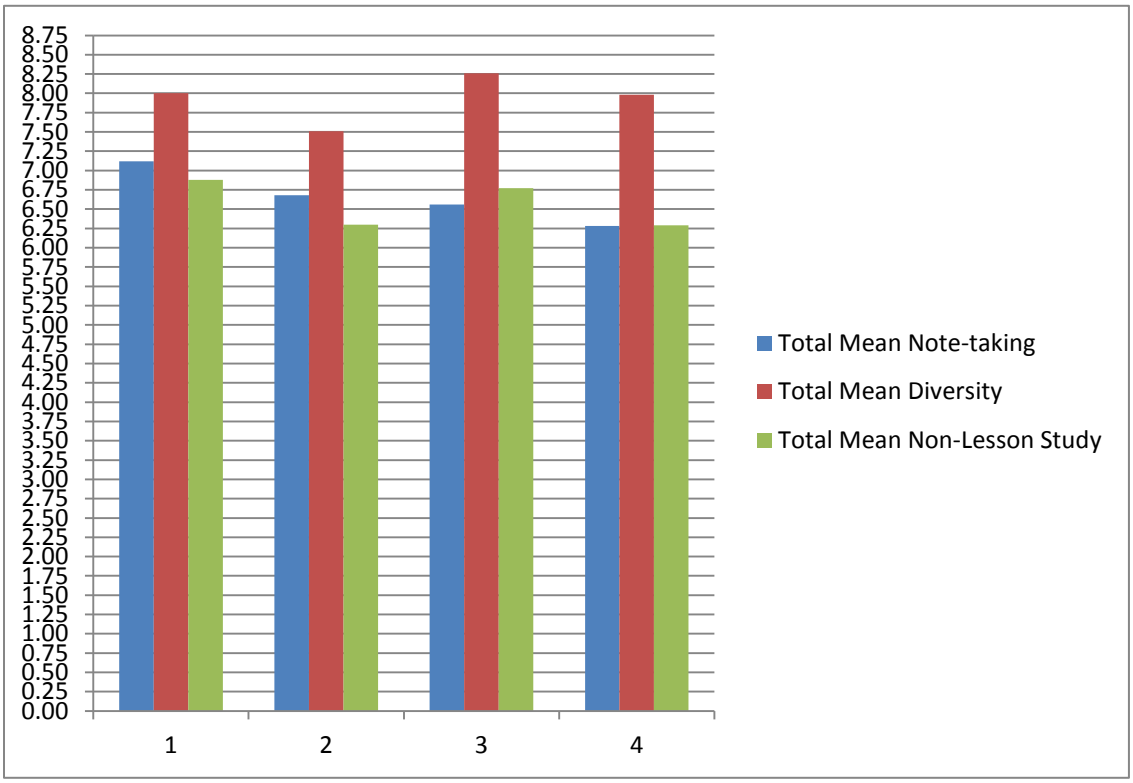

Figure 4. Instructor A's combined LS lessons vs. combined non-LS lessons questions 1-4.

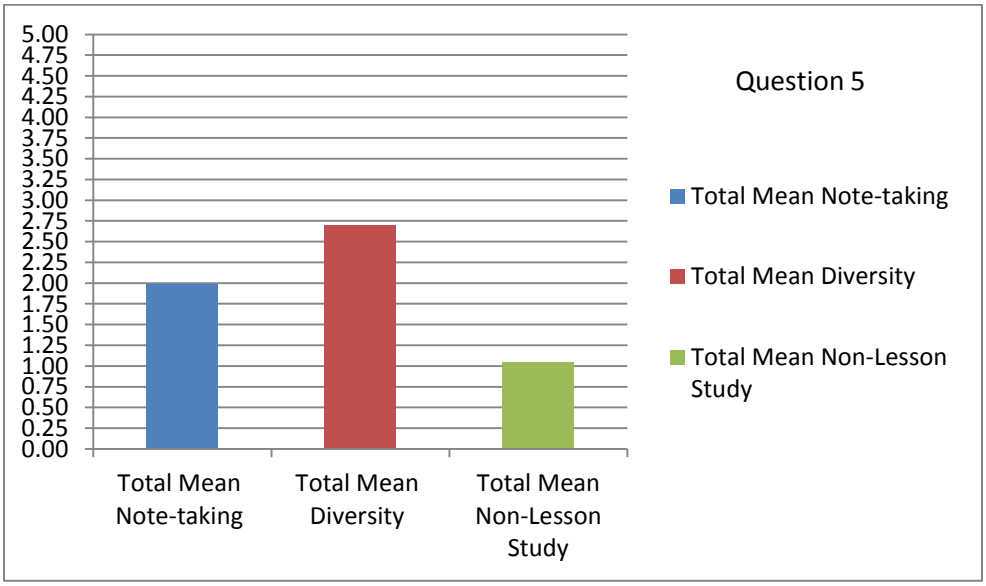

Figure 5. Instructor A's combined LS lessons vs. combined Non-LS lessons question 5.

Instructor B taught three note-taking lessons that were created through Lesson Study. The mean score for all five items on the student survey for the instructor B's combined note-taking lessons that were created through Lesson Study were higher than the mean scores for her combined lessons not created through Lesson Study.

Table 8

Instructor B: Note-Taking LS Lessons vs Non-Lesson Study Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	186	8.59	1.688	.124
	Note-taking LS	39	8.82	1.668	.267
Engagement Compared	Non-Lesson Study	186	7.49	2.257	.165
	Note-taking LS	39	8.31	2.214	.355
Interest	Non-Lesson Study	186	8.39	1.731	.127
	Note-taking LS	38	8.74	1.982	.322
Interest Compared	Non-Lesson Study	186	7.44	2.297	.168
	Note-taking LS	38	8.29	2.404	.390
Quality	Non-Lesson Study	172	2.45	1.986	.151
	Note-taking LS	36	3.19	2.012	.335

This difference between the mean scores for three of the five student survey items for instructor B's Lesson Study note-taking lessons compared to her Non-Lesson Study combined lessons were found to be statistically significant. Question 2 which asked if today's lesson engaged me more than previous lessons in this class was found to be statistically significantly at t = -2.066, p = .040. Question 4 which asked if students found today's topic more interesting than previous topics in this class was also determined to be statistically significant at t = -2.059, p = .041. Question 5 which asked how students would you rate the quality of today's SCS100 class learning experience in comparison to

most lessons in previous SCS100 was also found to be statistically significant at $t = -2.031$, $p = .044$. It appears that students found instructor B's note-taking lesson created though Lesson Study as providing a higher quality of learning experience than her combined lessons that were not created through Lesson Study. In addition, when students compared the note-taking lessons to the non-Lesson Study lessons, students found the note-taking lesson to be more engaging as well as the topic more interesting.

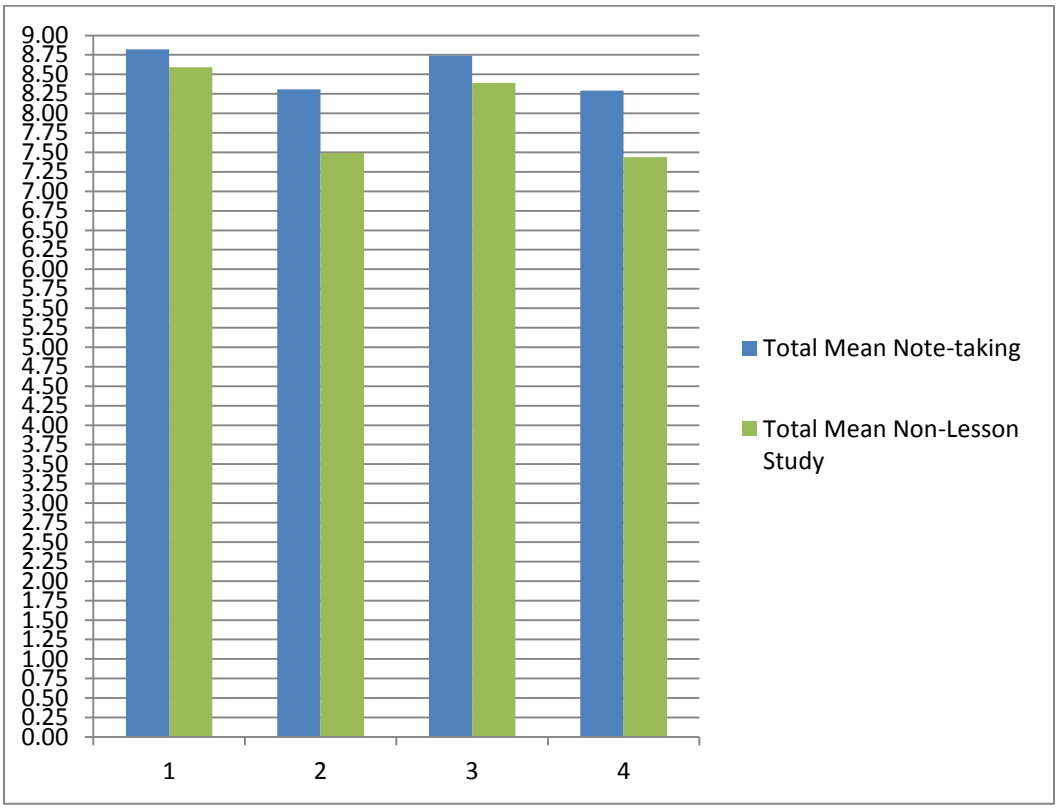

Figure 6. Instructor B's combined note-taking LS lessons vs. combined non-LS lessons questions 1-4.

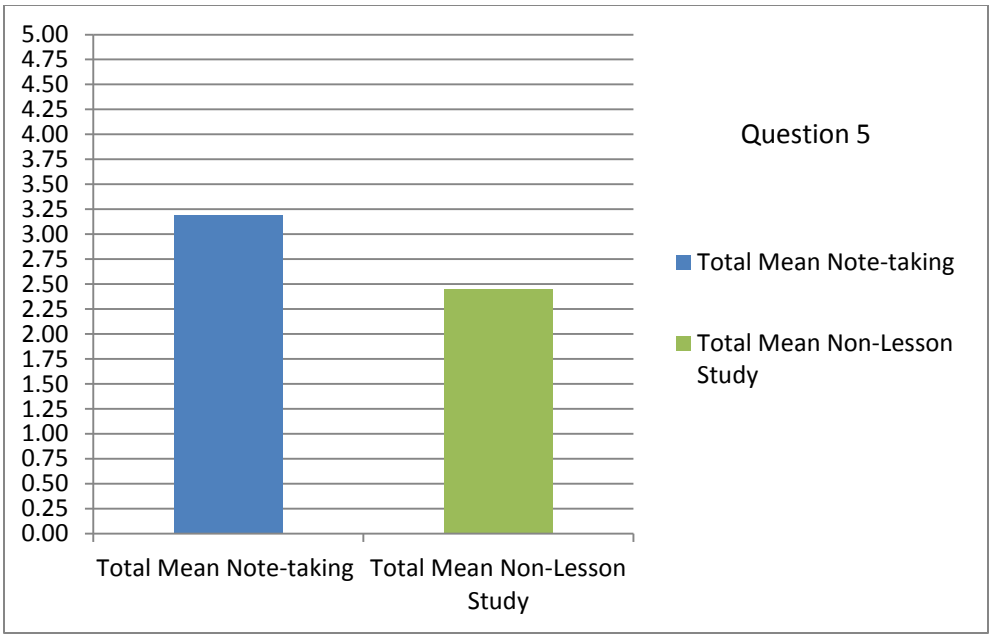

Figure 7. Instructor B's combined note-taking LS lessons vs. combined non-LS lessons question 5.

Instructor C taught two note-taking lessons that were created through Lesson Study and two diversity lessons that were created through Lesson Study. The mean score for two of the five items on the student survey for the instructor C's combined note-taking lessons that were created through Lesson Study were higher than the mean scores for her combined lessons not created through Lesson Study. Item 2 which compared engagement levels to previous sessions as well as Item 5 which pertained to the quality of the learning experience all had higher mean scores for the note-taking lesson. The mean score for Item 1 pertaining to the lesson engaging the students was the same. Items 3 and 4 which related to the level of interest in the topic had lower mean scores for the note-taking lesson.

Table 9

Instructor C: Note-Taking LS Lessons vs Non-Lesson Study Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	249	7.78	1.774	.112
	Note-taking LS	37	7.78	1.988	.327
Engagement Compared	Non-Lesson Study	249	7.11	1.966	.125
	Note-taking LS	37	7.24	2.087	.343
Interest	Non-Lesson Study	248	7.79	1.799	.114
	Note-taking LS	37	7.65	2.044	.336
Interest Compared	Non-Lesson Study	249	7.18	1.814	.115
	Note-taking LS	37	7.14	1.873	.308
Quality	Non-Lesson Study	240	2.19	1.929	.125
	Note-taking LS	37	2.68	1.886	.310

The difference between the mean scores for the five student survey items for instructor C's Lesson Study note-taking lessons compared to her non-Lesson Study combined lessons were not found to be statistically significant.

The mean scores for all five items on the student survey for the instructor C's combined diversity lessons that were created through Lesson Study were higher than the mean scores for her combined lessons not created through Lesson Study.

Table 10

Instructor C: Diversity LS Lessons vs Non-Lesson Study Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	249	7.78	1.774	.112
	Diversity LS	27	8.70	1.463	.282
Engagement Compared	Non-Lesson Study	249	7.11	1.966	.125
	Diversity LS	27	8.26	1.631	.314
Interest	Non-Lesson Study	248	7.79	1.799	.114
	Diversity LS	27	8.56	1.601	.308
Interest Compared	Non-Lesson Study	249	7.18	1.814	.115
	Diversity LS	27	7.89	1.847	.355
Quality	Non-Lesson Study	240	2.19	1.929	.125
	Diversity LS	26	2.81	1.698	.333

This difference between the mean scores for four of the five student survey items for instructor C's Lesson Study diversity lessons compared to her Non-Lesson Study combined lessons were found to be statistically significant. Questions 1 and 2 relating to engagement were found to be statistically significant: Question 1 at $t = -2.601$, $p = .010$ and Question 2 at $t = -2.922$, $p = .004$. Questions 3 and 4 pertaining to the level of interest in the topic were also determined to be statistically significant: Question 3 at $t = -2.120$, $p = .035$ and Question 4 at $t = -1.934$, $p = .054$. Question 5 pertaining to the quality of the learning experience was not found to be statistically significant at $t = -1.564$, $p = .119$. It appears that students found instructor C's diversity lesson created though Lesson Study as being more engaging as well as found the topic interesting.

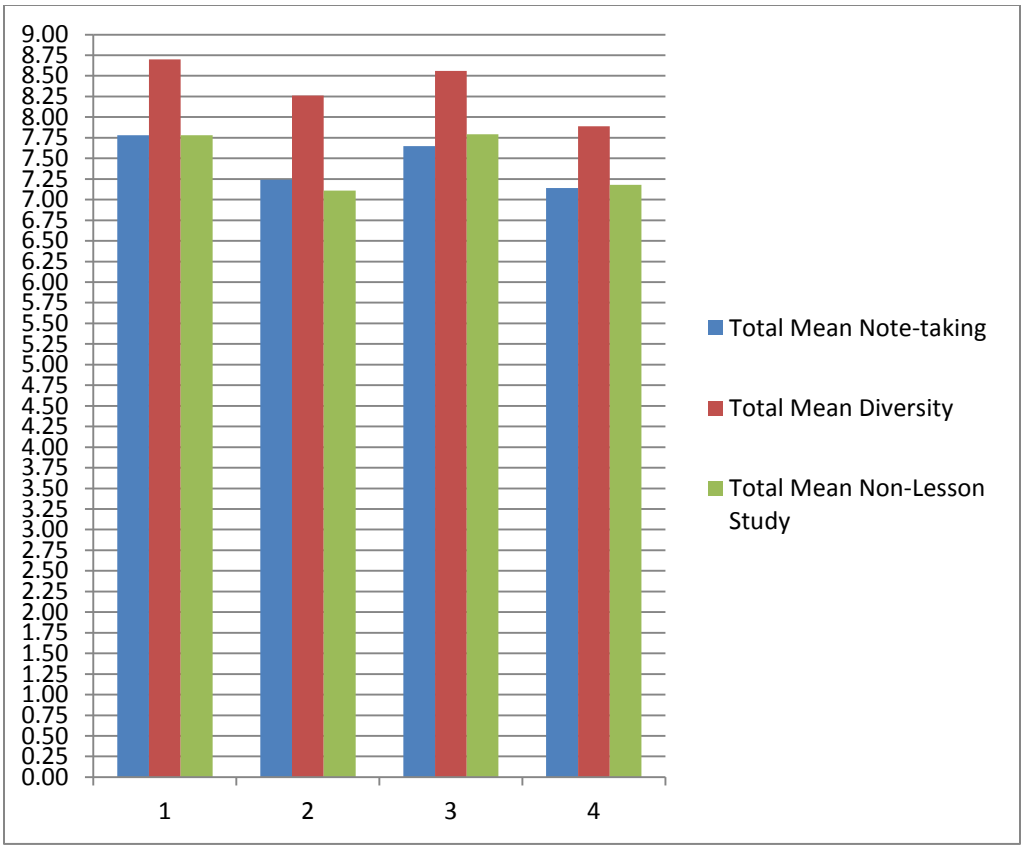

Figure 8. Instructor C's combined LS lessons vs. combined non-LS lessons questions 1-4.

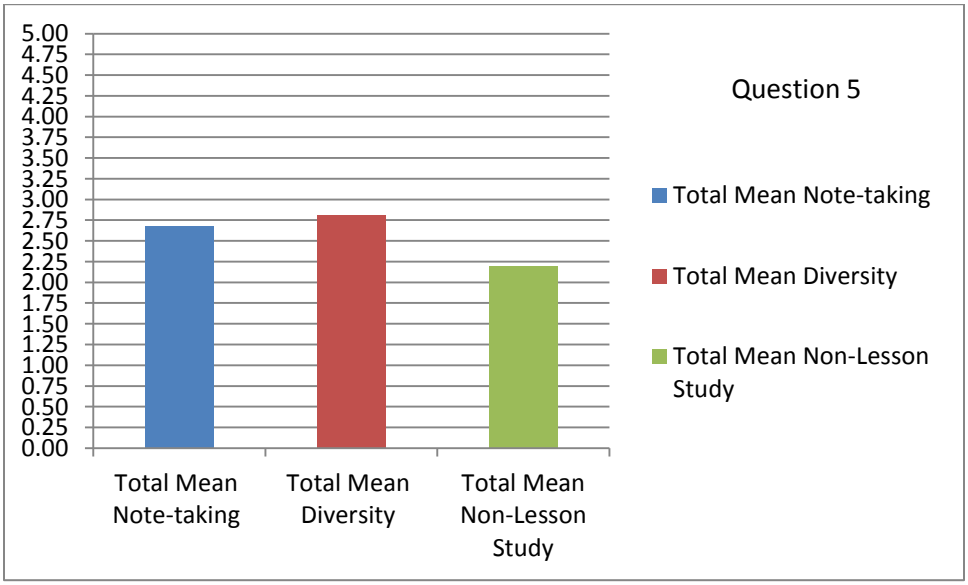

Figure 9. Instructor C's combined LS lessons vs. combined non-LS lessons question 5.

Instructor D taught one note-taking lesson that was created through Lesson Study. The mean score for all five items on the student survey for the instructor D's combined note-taking lessons that were created through Lesson Study were higher than the mean scores for his combined lessons not created through Lesson Study.

Table 11

Instructor D: Note-Taking LS Lessons vs Non-Lesson Study Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	120	7.82	1.768	.161
	Note-taking LS	16	8.25	1.983	.496
Engagement Compared	Non-Lesson Study	119	7.02	2.213	.203
	Note-taking LS	16	7.69	2.651	.663
Interest	Non-Lesson Study	119	7.79	1.895	.174
	Note-taking LS	16	8.13	1.857	.464
Interest Compared	Non-Lesson Study	119	7.09	2.228	.204
	Note-taking LS	16	7.69	2.272	.568
Quality	Non-Lesson Study	117	2.33	2.000	.185
	Note-taking LS	16	2.69	2.152	.538

The difference between the mean scores for the five student survey items for instructor D's Lesson Study note-taking lessons compared to her Non-Lesson Study combined lessons were not found to be statistically significant.

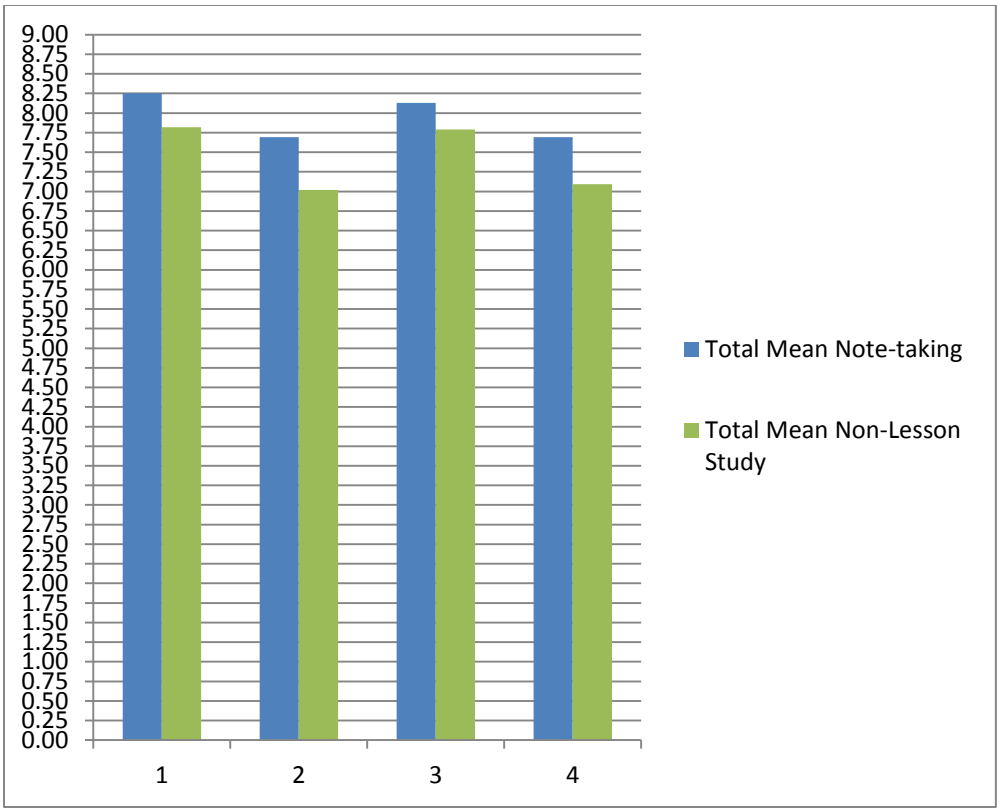

Figure 10. Instructor D's note-taking LS lesson vs. combined non-LS lessons questions 1-4.

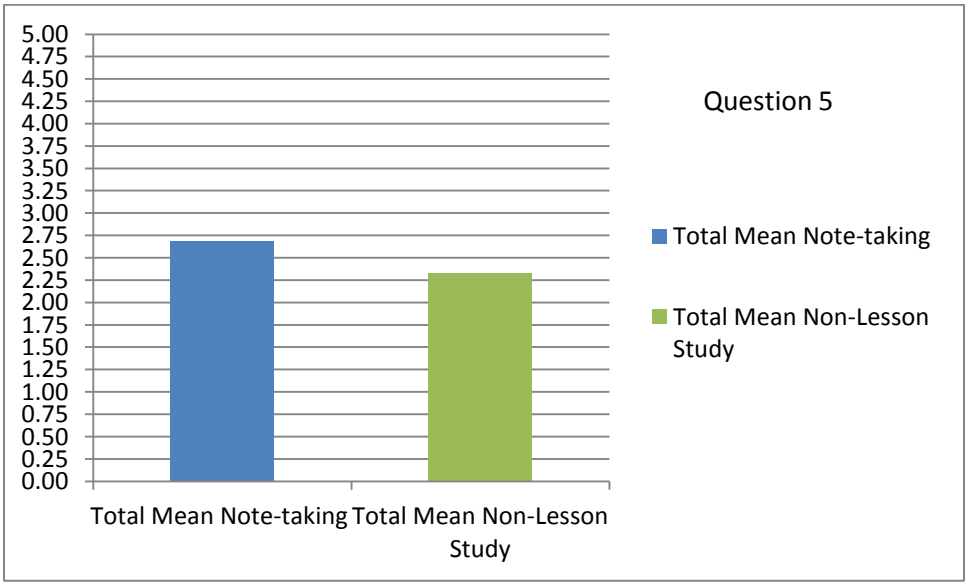

Figure 11. Instructor D's note-taking LS lesson vs. combined non-LS lessons question 5.

Instructor E taught one note-taking lesson although she did not use the note-taking lesson created through Lesson Study. However, instructor E did teach one diversity lesson that was created through Lesson Study. The mean scores for all five items on the student survey for the instructor E's diversity lesson that was created through Lesson Study were higher than the mean scores for her combined lessons not created through Lesson Study.

Table 12

Instructor E: Diversity LS Lessons vs Non-Lesson Study Lessons

	Class	N	*M*	*SD*	Std. Error Mean
Engagement	Non-Lesson Study	121	7.64	1.915	.174
	Diversity LS	11	7.91	1.700	.513
Engagement Compared	Non-Lesson Study	121	6.81	2.491	.226
	Diversity LS	11	7.18	2.639	.796
Interest	Non-Lesson Study	121	7.40	2.108	.192
	Diversity LS	11	8.36	1.502	.453
Interest Compared	Non-Lesson Study	121	6.76	2.456	.223
	Diversity LS	11	7.27	2.611	.787
Quality	Non-Lesson Study	116	1.92	1.838	.171
	Diversity LS	11	2.64	1.748	.527

The difference between the mean scores for the five student survey items for instructor E's Lesson Study diversity lesson compared to her non-Lesson Study combined lessons were not found to be statistically significant.

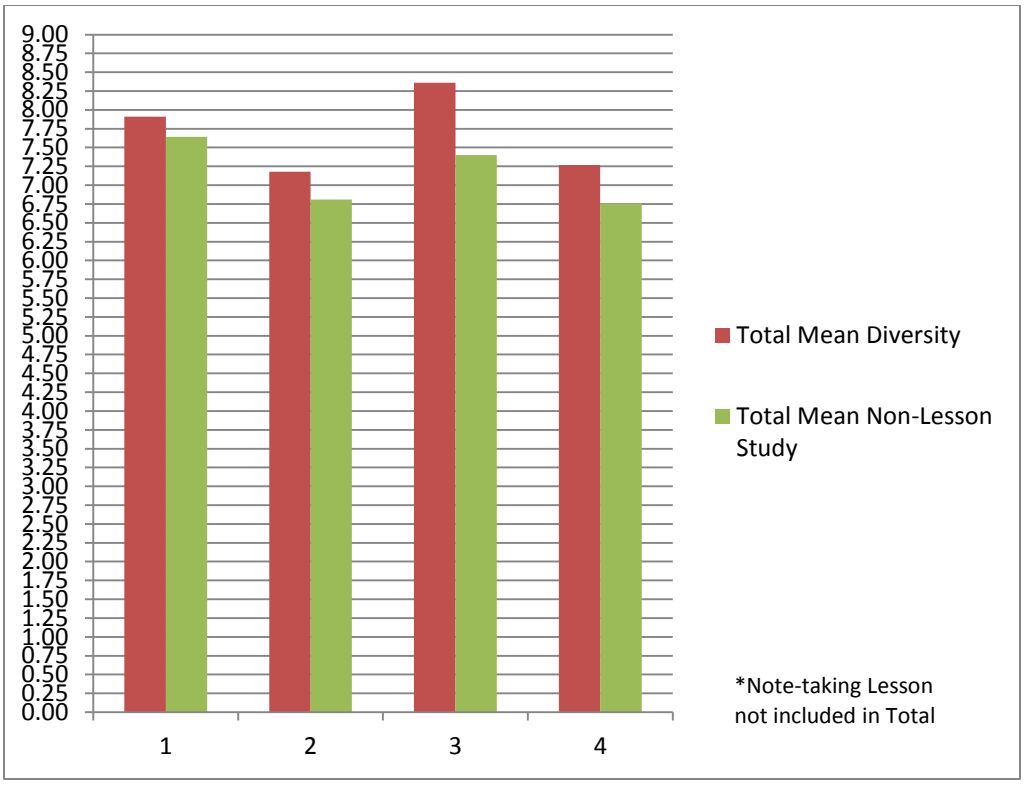

Figure 12. Instructor E's diversity LS lesson vs. combined Non-LS lessons questions 1-4.

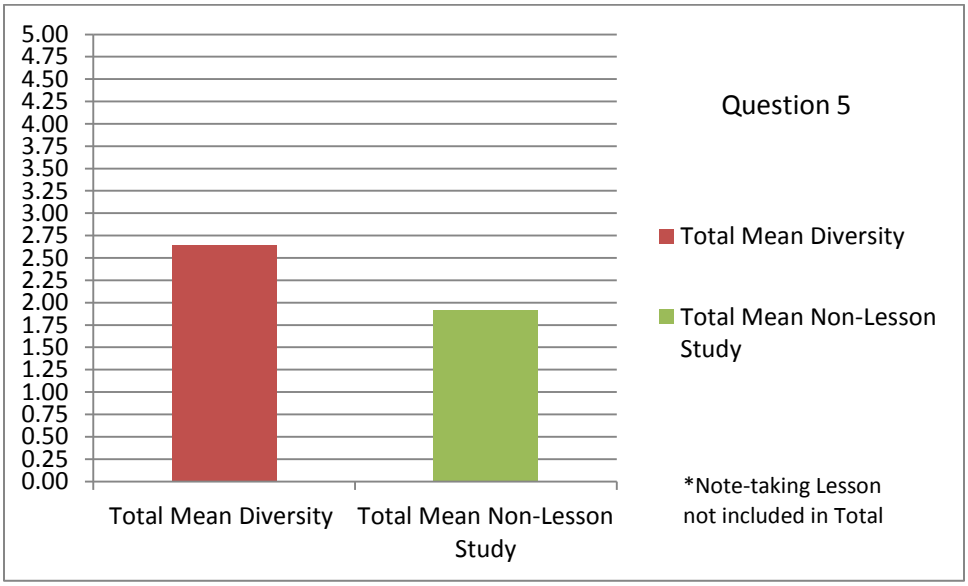

Figure 13. Instructor E's diversity LS lesson vs. combined non-LS lessons question 5.

Student Survey Open-Ended Questions Codes

Brief analysis description. Using the qualitative data from the open-ended questions that was collected from the 1,235 student surveys that were administered in 77 class sessions, the researcher created a summary document for each of the 77 class sessions that included all the students' responses to the open-ended questions as well as the mean scores for the five quantitative questions. The researcher began by reading the responses to the open ended questions on eight student survey summary documents from lessons that were taught on week 12. The researcher then decided to code each comment as representing an evaluative, pedagogical, topical or affective response. Through continuous trial and error in attempting to receive a consistent approach to code this qualitative data, the researcher developed the Student Survey Code Description/Directions document (see Appendix L). Using the Student Survey Code Description/Directions document, the researcher coded all the student surveys. The researcher then decided the numerical value that would be assigned to the neutral, positive and negative statements: a neutral rating would receive a numerical value of "0"; a positive rating would receive a numerical value of "+1"; and a negative rating would receive a numerical value of "-1." Finally, the researcher inputted all the student survey codes numerical values into an Excel spreadsheet in order to receive the mean scores for each code in each of the individual instructor's class sessions for lessons created through Lesson Study (note-taking and diversity) and for non-Lesson Study lessons. The researcher also received the mean scores for each code for SCS100 instructors' combined note-taking lessons that were created through Lesson Study with all the SCS100 instructors' combined lessons that were not created through lesson study. Mean scores

were also obtained for the instructors' combined diversity lessons created through lesson study with the instructors' combined lessons that were not created through lesson study.

The following section provides an explanation of how codes were operationalized in the analysis of the data. All codes were identified as positive, negative or neutral. If there was no qualifier, the comment was coded as neutral. If there was an affirmative qualifying word such as "nice" or "great", the comment was coded as positive. However, if an affirmative qualifier such as "more" was a response to the fifth open-ended questions which asked the students to provide suggestions for improving the lesson, this was identified as negative. The qualifier such as "none" in response to the fifth open-ended question was identified as positive since the fifth open-ended questions which asked the students to provide suggestions for improving the lesson. In addition, if the statement identified a student activity the comment was coded as positive since the LS group chose engagement as the theme for the lessons. If there was a negative qualifying word such as boring or bad, the comment was coded as negative. The following is a description of each of the codes that were used to analyze the qualitative data on the student survey.

ER = Evaluative response. This code describes anytime a student makes a comparison between two things. This code could refer to a comparison of activities and lessons within that particular class session or lessons taking place throughout the semester. This code is always used even though the comparison may pertain to the pedagogy, topic, or affect. Examples of this code are: "Today's topic was more interesting than values and interests" (positive), "I've found the previous lessons more engaging" (negative), and "It was the same as always" (neutral).

PR = Pedagogical response. This code describes comments and references about teaching, the activities, the class, the lesson, students' actions within an activity as well as specific things learned (must say learned, showed, etc.). If any of these items were identified by the student the comment was coded as a pedagogical response. If the student used the word "it" as a subject in a response to Question 2, the "it" was assumed to refer to the lesson since Question 2 asked about the lesson. If the student used the word "it" as a subject in a response to Question 5, the "it" was assumed to refer to the class learning experience in the lesson since Question 5 asked about the class learning experience in the lesson. Examples of this code are: "We were able to work in groups and I like to work in groups" (positive), "It was nice learning ways to help get the most out of my studying and classes" (positive), "The slides were helpful" (positive), "Less lecture" (negative), and "It was alright" (neutral).

TR = Topical response. This code describes comments and references about the topic. If the student used the word "it" as a subject in a response to Question 4, the "it" was assumed to refer to the topic since Question 4 asked about the topic. Examples of this code are: "Today's topic was very interesting" (positive), "Some of the topics didn't interest me" (negative), and "It had to do with how I learn" (neutral).

AR = Affective response. This code describes comments and references about a student's feelings or emotions. This code is used only when there is no other reference to the other three codes or the rules for identifying the other three codes do not apply. Examples of this code are: "Fun" (positive), "Very interesting" (positive), "I come to school frustrated because my car broke down on me" (negative), and "It was kinda of personal" (neutral).

There were five open-ended questions on the student survey. The first open-ended question asked students to explain their rating on Question 2 which had the students rate if the lesson engaged them more than previous lesson in the class using a Likert-type scale from 1-10 (1-Strongly Disagree, 3- Disagree, 5- Somewhat Disagree, 6-Somewhat Agree, 8-Agree, 10-Strongly Agree). The second open-ended question asked students to explain their rating on Question 4 which had the students rate if the topic of the lesson was more interesting than previous lesson in the class, also using a Likert-type scale from 1-10 (1-Strongly Disagree, 3- Disagree, 5- Somewhat Disagree, 6-Somewhat Agree, 8-Agree, 10-Strongly Agree). The third open-ended question asked students to explain their rating on Question 5 pertaining to the quality of the learning experience in the class session. Question 5 on the student survey had students rate the quality of the lesson's learning experience in comparison to most lessons in previous SCS100 sessions using a Likert-type scale from -5 to +5 (-5 Much Worse, -3 Worse, -1 Somewhat Worse, 0 About the Same, +1 Somewhat Better, +3 Better, +5 Much Better). The fourth open-ended question asked the students to identify one to four aspects of the class session's learning experience that were most beneficial to their learning. The fifth open-ended question asked the students to provide one to four suggestions for improving the lesson.

PEAT codes LS lessons vs non-LS lessons. The following tables and charts illustrate the mean scores for each code from the open-ended responses on the student surveys for the all instructors' combined lessons created through Lesson Study (note-taking and diversity) compared to the all instructors' combined lessons not created through Lesson Study. These mean scores could be converted into percentages, and these percentage scores would indicate the total percentage of positive responses within the

lessons. For example, a mean score of 0.73 for the pedagogical code within the LS note-taking lesson would indicate that 73% of the student responses were positive.

Table 13

PEAT Codes Means and Total Responses LS Lessons Vs. Non-LS Lessons

Code - Question Number	Total Mean Lesson Study Note-taking	Total Number of Responses	Total Mean Lesson Study Diversity	Total Number of Responses	Total Mean Non-Lesson Study	Total Number of Responses
Pedagogical	0.73	461	0.82	154	0.55	2793
Evaluative	0.47	68	0.73	37	0.44	582
Affective	0.33	12	0.62	13	0.23	155
Topical	0.66	264	0.79	105	0.80	1580

The mean score for three of the four codes (pedagogical, evaluative, and affective) from the open-ended items on the student survey for the instructors' combined note-taking lessons that were created through Lesson Study were higher than the mean scores for the instructors' combined lessons not created through Lesson Study. The mean score for topical code from the open-ended items on the student survey for the instructors' combined note-taking lessons that were created through Lesson Study was lower than the mean scores for the instructors' combined lessons not created through Lesson Study. It appears that overall student comments reflected a higher rating for the pedagogical practices found within the note-taking lessons created through Lesson Study, and at the same time they also seemed to have rated the topic of note-taking as being less interesting than the non-Lesson Study lessons. In addition, student comments seem to reflect a more positive evaluation of the note-taking lesson created through Lesson Study versus non-Lesson Study lessons.

Likewise, the mean score for three of the four codes (pedagogical, evaluative, and affective) from the open-ended items on the student survey for the instructors' combined diversity lessons that were created through Lesson Study were higher than the mean scores for the instructors' combined lessons not created through Lesson Study. The mean score for topical code from the open-ended items on the student survey for the instructors' combined diversity lessons that were created through Lesson Study was lower than the mean scores for the instructors' combined lessons not created through Lesson Study. Again, like the results with the note-taking LS lesson, it appears that overall student comments reflected a higher rating for the pedagogical practices found within the diversity lessons created through Lesson Study, and at the same time they also seemed to have rated the topic of diversity as being slightly less interesting than the non-Lesson Study lessons. In addition, student comments seem to reflect a more positive evaluation of the diversity lesson created through Lesson Study versus non-Lesson Study lessons.

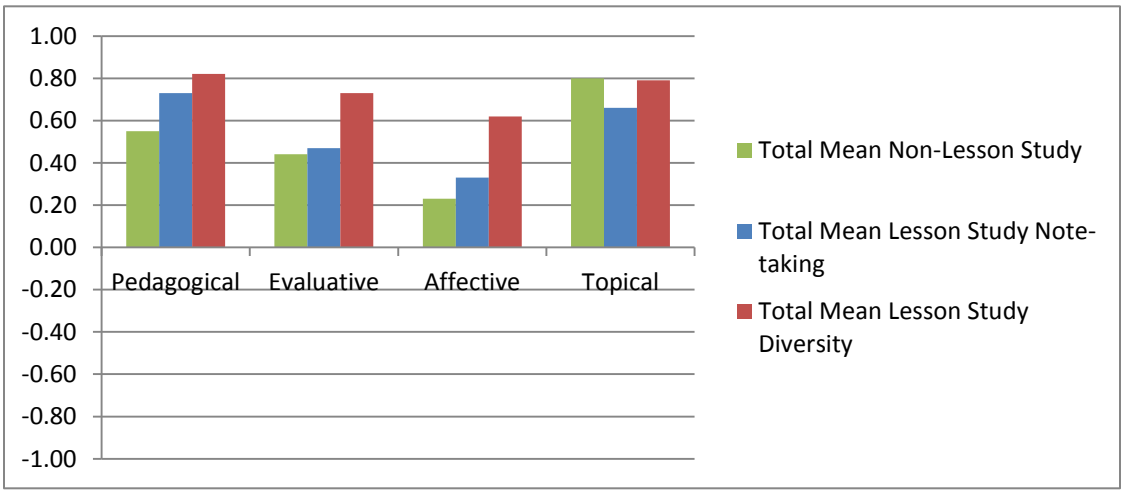

Figure 14. PEAT codes means combined LS lessons vs. combined non-LS lessons.

PEAT codes each instructor's combined LS lessons vs. combined non-LS lessons. The following tables and charts illustrate the mean scores for each code from the open-ended responses on the student surveys for each individual instructor's lessons created through Lesson Study (note-taking and diversity) compared to the lessons not created through Lesson Study. These mean scores could be converted into percentages, and these percentage scores would indicate the total percentage of positive responses within the lessons. For example, a mean score of 0.68 for the pedagogical code within the LS note-taking lesson would indicate that 68% of the student responses were positive.

Table 14

Instructor A's PEAT Codes Means and Total Responses LS Lessons vs. Non-LS Lessons

Code - Question Number	Total Mean Lesson Study Note-taking	Total Number of Responses	Total Mean Lesson Study Diversity	Total Number of Responses	Total Mean Non-Lesson Study	Total Number of Responses
Pedagogical	0.68	183	0.72	75	0.41	887
Evaluative	0.55	33	0.92	24	0.41	212
Affective	0.00	2	0.00	4	0.25	32
Topical	0.46	91	0.79	52	0.66	461

Table 15

Instructor B's PEAT Codes Means and Total Responses LS Lessons vs. Non-LS Lessons

Code - Question Number	Total Mean Lesson Study Note-taking	Total Number of Responses	Total Mean Non-Lesson Study	Total Number of Responses
Pedagogical	0.73	121	0.69	562
Evaluative	0.61	18	0.48	98
Affective	0.25	4	0.38	42
Topical	0.92	64	0.88	306

Table 16

Instructor C's PEAT Codes Means and Total Responses LS Lessons vs. Non-LS Lessons

Code - Question Number	Total Mean Lesson Study Note-taking	Total Number of Responses	Total Mean Lesson Study Diversity	Total Number of Responses	Total Mean Non-Lesson Study	Total Number of Responses
Pedagogical	0.85	79	0.91	61	0.72	579
Evaluative	0.67	6	0.44	9	0.44	119
Affective	1.00	4	0.86	7	0.05	57
Topical	0.63	63	0.86	43	0.88	369

Table 17

Instructor D's PEAT Codes Means and Total Responses LS Lesson vs. Non-LS Lessons

Code - Question Number	Total Mean Lesson Study Note-taking	Total Number of Responses	Total Mean Non-Lesson Study	Total Number of Responses
Pedagogical	0.69	58	0.62	448
Evaluative	0.00	6	0.32	79
Affective	0.00	1	0.44	16
Topical	0.79	29	0.82	257

Table 18

Instructor E's PEAT Codes Means and Total Responses LS Lesson vs. Non-LS Lessons

Code - Question Number	Total Mean Lesson Study Diversity	Total Number of Responses	Total Mean Non-Lesson Study	Total Number of Responses
Pedagogical	0.94	18	0.45	317
Evaluative	0.25	4	0.59	74
Affective	1.00	2	0.25	8
Topical	0.50	10	0.85	187

All four instructors who taught note-taking lessons created through Lesson study had an overall mean score on the pedagogical code that was higher for their note-taking lessons than the lessons not created through Lesson Study. Three out of the four instructors who taught note-taking lessons created through Lesson Study had an overall mean score on the evaluative code that was higher for their note-taking lessons than the lessons not created through Lesson Study. Instructors A, B, and C all had a higher mean score on the evaluative code for their note-taking lessons created through Lesson Study while Instructor D had a lower mean score on the evaluative code for his note-taking lesson created through Lesson Study. Three out of the four instructors who taught note-taking lessons created through Lesson Study had an overall mean score on the topical code that was lower for their note-taking lessons than the lessons not created through Lesson Study. Instructors A, C, and D all had a lower mean score on the topical code for their note-taking lessons created through Lesson Study while Instructor B had a higher mean score on the topical code for her note-taking lessons created through Lesson Study. It appears that overall student comments reflected a higher rating for the pedagogical practices found within the note-taking lessons created through Lesson Study, and they also seemed to have rated the topic of note-taking as being less interesting than the non-Lesson Study lessons for all but one instructor. In addition, student comments seem to reflect a more positive evaluation of the note-taking lesson created through Lesson Study versus non-Lesson Study lessons.

Likewise, all three instructors who taught diversity lessons created through Lesson study had an overall mean score on the pedagogical code that was higher for their diversity lessons than the lessons not created through Lesson Study. Instructor A who

taught diversity lessons created through Lesson Study had an overall mean score on the evaluative code that was higher for her diversity lessons than the lessons not created through Lesson Study. Instructor C had an overall mean score on the evaluative code that was equal between those diversity lessons created through Lesson Study and lessons not created through Lesson Study. Instructor E had a lower mean score on the evaluative code for her diversity lesson created through Lesson Study when compared to her non-Lesson Study lessons. Two out of the three instructors who taught diversity lessons created through Lesson Study had an overall mean score on the topical code that was lower for their diversity lessons than the lessons not created through Lesson Study. Instructors C and E all had a lower mean score on the topical code for their diversity lessons created through Lesson Study while Instructor A had a higher mean score on the topical code for her diversity lessons created through Lesson Study. It appears that overall student comments reflected a higher rating for the pedagogical practices found within the diversity lessons created through Lesson Study versus the non-Lesson Study lessons, and two of the three instructors' diversity lessons also seemed to have received ratings signifying the topic of diversity as being less interesting than the non-Lesson Study lessons.

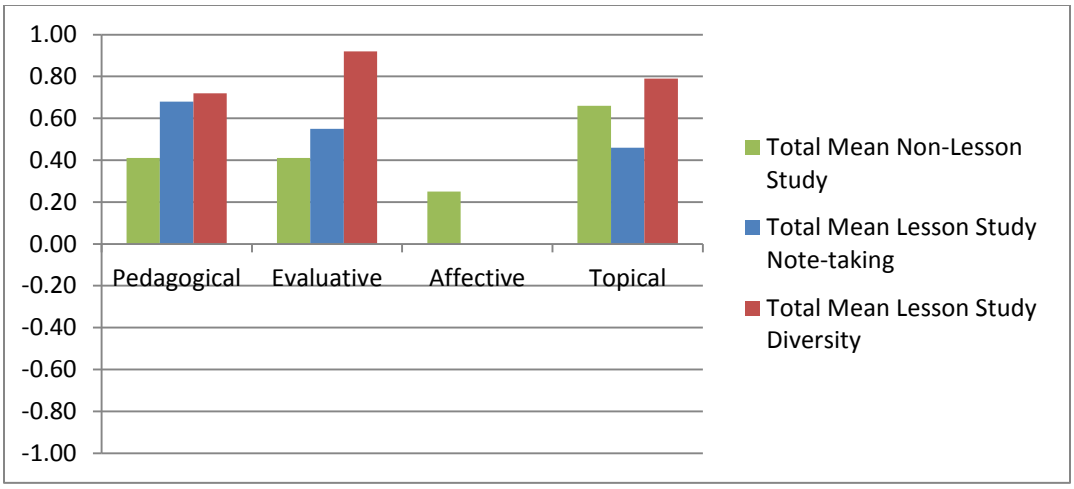

Figure 15. Instructor A's PEAT codes means combined LS lessons vs. combined non-LS lessons.

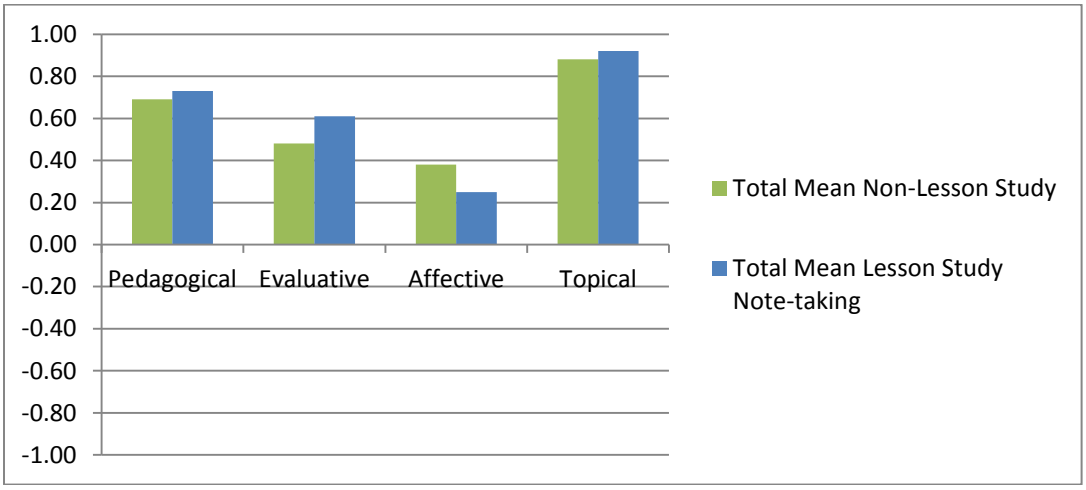

Figure 16. Instructor B's PEAT codes means combined note-taking LS lessons vs. non-LS lessons.

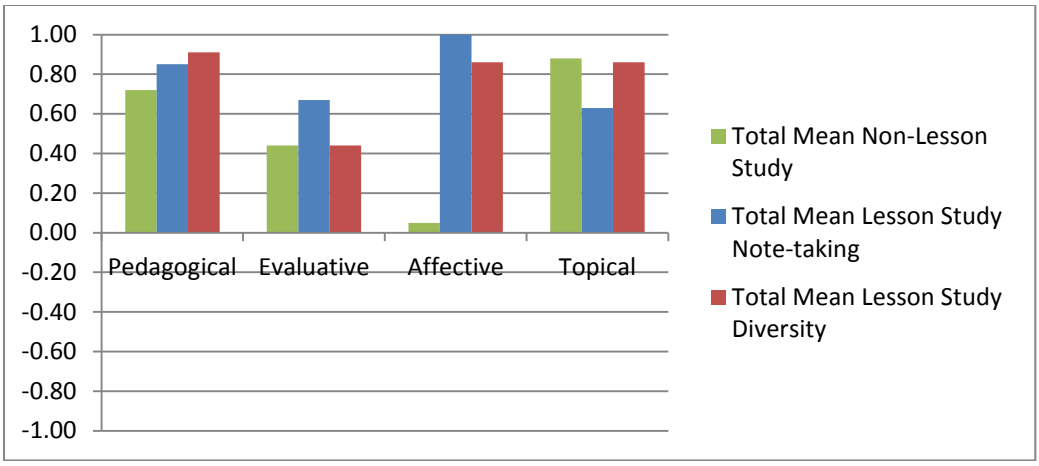

Figure 17. Instructor C's PEAT codes means combined LS lessons vs. combined non-LS lessons.

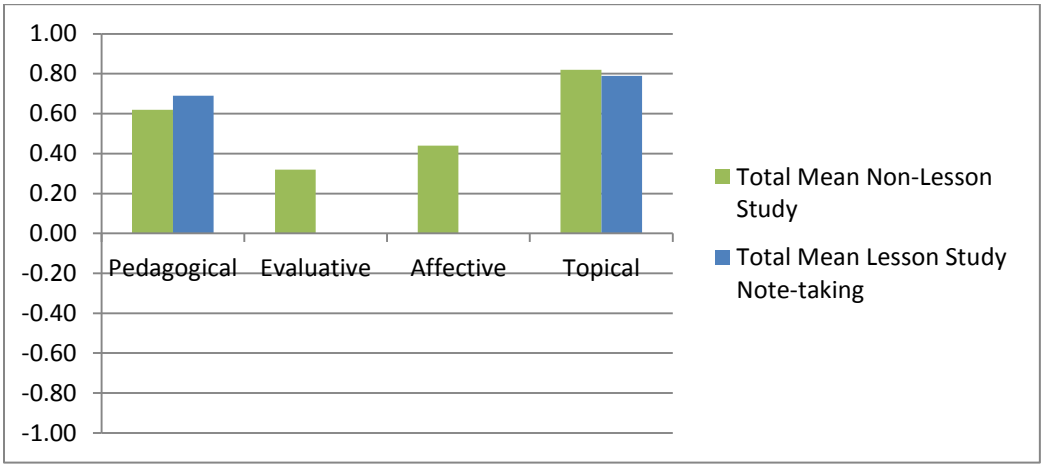

Figure 18. Instructor D's PEAT codes means note-taking LS lesson vs. combined non-LS lessons.

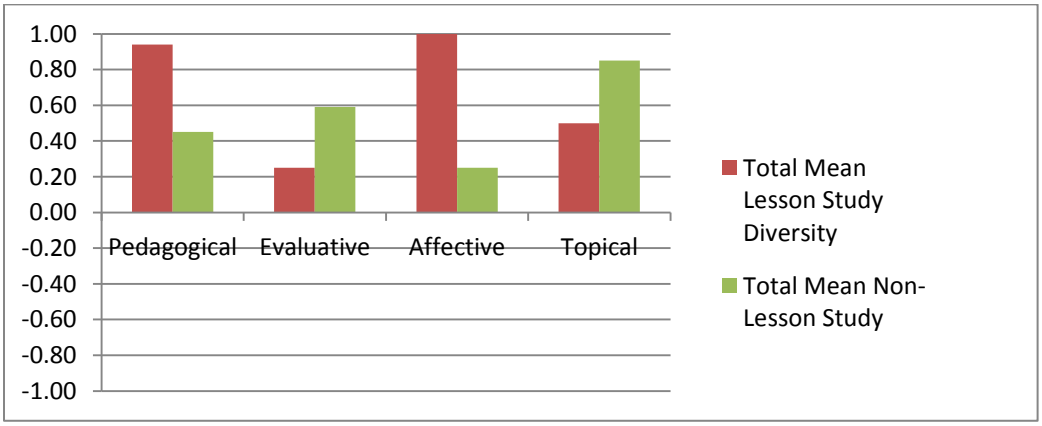

Figure 19. Instructor E's PEAT codes means diversity LS vs. combined non-LS lessons.

Teacher's Sense of Efficacy Scale (Pre/Post)

The Teacher's Sense of Efficacy Scale quantitative data source provided information that assisted the researcher to partially answer all three research questions.

Brief analysis description. The researcher administered the Teacher's Sense of Efficacy Scale to the five participants during the first week of the study and at the end of the study during the sixteenth week. The researcher used SPSS statistical software to find the mean scores for each of the 24 items for the pre and post data from the Teacher's Sense of Efficacy Scale. SPSS statistical software was also used to find the standard deviation for each mean score on this quantitative data source. Three moderately correlated factors are consistently found on The Teachers Sense of Self-Efficacy Scale: (1) efficacy in student engagement, (2) efficacy in instructional practices, and (3) efficacy in classroom management (Tschannen-Moran & Woolfolk Hoy, 2001). The research also used the SPSS statistical software to find the mean scores and standard deviations for the three factors of efficacy in student engagement, efficacy in instructional practices, and efficacy in classroom management. Lastly, using SPSS statistical software, paired *t*-tests were generated in order to determine the significance between the correlation of the pre and post data for the 24 items as well as for the three correlated factors. This instrument asked the instructors to rate their beliefs about their teaching practice by providing instructors 24 close-ended items and asking them to rate themselves on a 9-point Likert scale that ranged from 1 "nothing", 3 "very little", 5 "some influence", 7 "quite a bit" and 9 "a great deal" in relation to the question "How much can you do?"

Results of group Teacher Efficacy Scale. A total of 10 items out of the 24 items had a higher mean score in the post Teacher Efficacy Scale survey. Three out of the eight

items relating to student engagement had a higher mean score, four out of the eight times relating to instructional practices had a higher mean score, and three out of the eight for classroom management at a higher mean score. No items were found to be statistically significant. Only two items were close to having statistical significance with item 7 pertaining to instructional strategies at $t = -2.236$, $p = .089$ and item 12 pertaining to student engagement at $t = -2.138$, $p = .099$. The factors of instructional strategies and classroom management both had a higher mean score in the post Teacher Efficacy Scale survey. However the factor of student engagement did not have higher post mean score. None of the three factors' mean scores were found to be statistically significant.

Results each individual instructor's Teacher Efficacy Scale. Instructor A had lower post mean scores in all three efficacy factors of student engagement, instructional strategies, and classroom management. Instructor B had a higher post mean score in all three efficacy factors of student engagement, instructional strategies, and classroom management. Instructor C also had higher post mean scores for the efficacy factors of instructional strategies and classroom management, but she had the same post mean score for student engagement. Instructor D had the same post mean score for the efficacy factor of classroom management, but Instructor D had lower post mean scores for the efficacy factors of instructional strategies and student engagement. Instructor E had higher post mean scores for the efficacy factors of instructional strategies and classroom management, but Instructor E had a lower post mean score for student engagement.

Chapter 5: Discussion

This chapter articulates assertions based on the results that originated from the analysis of the qualitative and quantitative data that was collected over the course of this study. These assertions are the overarching conclusions that have been reached as a result of this research study. According to Green (2007), the purpose of a mixed method study with a focus on complementarity is to study complex and multifaceted phenomena. The researcher utilized a concurrent mixed methods study for the purpose of complementarity in order to study the multifaceted phenomena of facilitating the Lesson Study learning experience with first-year college success instructors and to discover answers to the following research questions:

1. How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?
2. How, and to what extent, will Lesson Study impact the self-efficacy of the college success course instructors?
3. What changes in their instructional practices did the college success course instructors make as a result of participating in Lesson Study?

This section will also explain the limitations of this study and implications for teacher practice and policy.

Assertions

A total of six assertions were gleaned from the comparison of the results that originated from the analysis of the qualitative and quantitative data collected over the course of this study. The following section articulates each of these assertions and the

evidence that supports them using multiple sources including instructor reflective journals, semi-structured interviews with instructors, LS meeting video recordings, student surveys, and an instructor sense of efficacy questionnaire. Each of the research questions will be discussed as assertions are explained in this section.

Assertion 1

Assertion 1 is: How counselors made meaning of their Lesson Study experience seems to correlate with how the Lesson Study experience is depicted in the research literature.

This assertion relates directly to the primary research question: How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?

Assertion 1 will serve as the structure for Chapter 5 since all the other assertions are associated with Assertion 1 and with the primary research question.

There are many beneficial outcomes and positive features attributed to the practice of Lesson Study, and the research literature highlights the following:

1. greater amount of leadership by instructors regarding their professional development
2. improved collaboration and collegiality amongst instructors
3. improved in-depth reflection by instructors regarding their instructional practices and how students learn
4. improved student learning
5. an increased shared body of professional knowledge regarding teaching practices

6. instructional development and change in instructional practice
7. increased development of instructors as researchers that produces a culture of learning from practice,
8. increased instructor self-efficacy

There are also some challenges associated with these Lesson Study positive features such as stress and anxiety experienced by LS participants as well as conflicts with group consensus. In order to fully explain Assertion 1 as well answer the primary research question, each of these Lesson Study features as well as the corresponding additional assertions will be discussed throughout Chapter 5.

Qualitative.

Instructor directed professional development. The research literature depicts Lesson Study as teacher led since teachers choose learning goals and decide how to devise lessons as well as choose their teaching practices and methods of examining practice (Audette, 2004; Chokshi and Fernandez, 2004; Lewis, Perry, Hurd, & O'Connell, 2006). Moreover, Lesson Study facilitates instructors' collaborative leadership which has an opportunity to increase the professionalism of instructors (Sibbald, 2009). Lesson Study participants also viewed Lesson Study as an experience that was instructor led and that was owned by the instructors in their instructional practice. The analysis of the LS planning meetings demonstrated that the instructors that participated in Lesson Study chose the central LS theme for the semester, devised the student learning goals, decided on the LS tasks for the LS meetings and outside the meetings, created and decided on the activities for the lessons as well as the methods of evaluating the research lessons. They even collaboratively provided feedback on the

student survey questions and the administration of the student survey. Moreover, LS participants collaboratively discussed and decided which instructional pedagogies and practices would be most effective for facilitating the research lessons. This was viewed in the analysis of the reflective journals, semi-structured interviews, and LS debrief meetings that produced themes such collaborative reflection and recommendations on teaching practice. The LS participants truly shaped and owned the LS experience, and there were no outside forces influencing the direction of the LS experience.

Self-determination theory asserts that in order for people to acquire high quality development and performance as well as motivation for a task, their psychological needs of competence, autonomy, and relatedness must be satisfied (Deci & Ryan, 2000). Lesson Study seems to satisfy this psychological need of autonomy since Lesson Study provides autonomy to instructors as they choose their learning goals and devise their lessons and instructional activities. Moreover, Lesson Study is teacher driven which provides instructors autonomy from any outside sanctioned professional development. One could argue that Lesson Study is not completely autonomous because decisions are made collaboratively in the group and not individually. However, without collaboration the self-determination theory psychological need of relatedness may not be satisfied, and according to Gergen (2009), collaboration and social interaction are essential to the construction of knowledge. It appears that Lesson Study provides a sufficient amount of autonomy without compromising the collaborative creation of knowledge.

Collaboration and collegiality. The research literature depicts Lesson Study as intrinsically collaborative since teachers work together to develop effective student learning experiences and teaching practices (Audette, 2004; Lewis & Tsuchida, 1999;

Lewis, Perry, Hurd, & O'Connell, 2006; Lewis et al, 2011; Rock & Wilson, 2005; Stigler & Hiebert, 2009). The practice of Lesson Study has also been associated with increased teacher collaboration (Puchner & Taylor, 2006; Rock & Wilson, 2005). The analysis of the reflective journals and the semi-structured interviews produced a similar finding since the overarching themes of collaboration and collegiality were identified in the analysis. Lesson Study participants viewed Lesson Study as an experience that facilitated collaboration and collegiality in their instructional practice. Collaboration was depicted by the participants as instructors working together to produce improved learning experiences for students as well as instructors learning from each other's strengths in order to improve their teaching practice. All the instructors shared comments regarding working together to create an improved lesson as well as learning from each other. Participants provided comments regarding collaboration such as Instructor A "I think we are more of a team now," Instructor B "I learned so much from them and really enjoyed collaborating with them," Instructor C "collaborating with colleagues and coming up with a good lesson," Instructor D "I'd describe it as an opportunity for teachers to come together to work on different lessons to improve a specific lesson," and instructor E "but getting that final product and something that is not from me and my limited creativity."

The study by Taylor et al. (2005) also revealed that participants in Lesson Study develop improved collegiality. Through the analysis of the reflective journals and semi-structured interviews collegiality was depicted as instructors supporting each other and becoming more comfortable with each other. Collegiality was also viewed through the themes of support, praise and encouragement that were found in the LS debrief meetings. All of the instructors provided comments regarding collegiality such as Instructor A "It's

helped because then it's more of a camaraderie," Instructor B "I also have really enjoyed the camaraderie with my colleagues. I feel we have been really supporting each other," Instructor C "I feel very supported by my colleagues. It was great how everyone was there to help and offer words of encouragement," Instructor D "there's a growth in the relationships with group members for sure," and Instructor E "because in LS, we learn so much about each other and we got to know each other."

There appeared to be a change in the culture of the department as a result of the collaboration and collegiality experienced in Lesson Study. Not only were counselors collaborating for the purposes of improving instruction, but they also began working together to improve other aspects of their role as counselors. Since counselors were building stronger relationships with each other and learning more about each other's strengths, they began to refer students to each other with specific counseling needs and consult with each other regarding these different student counseling needs. For example Instructor E shared:

> Because in Lesson Study, we learn so much about each other and we got to know each other, and then I got to know everyone's strengths and personality types where I can say, "I think you should work with this counselor. You will like this counselor. You guys would be a good fit." I think that's so important.

In one of the LS planning meetings, one of the instructors consulted with Instructor E regarding a question on diversity since she knew this instructor taught an Introduction to Multiculturalism class and had more knowledge about this topic. In addition, the critical friend who reviewed the reflective journals and semi-structured interviews codesheets for the study identified a change of culture in collegiality that provided support to other functions as a major finding. The critical friend noticed the sense of belonging and the

feeling of not being alone experienced by adjunct instructors as a result of the collegiality. It appeared that the collaboration and collegiality within LS meetings was transferred to outside the LS meetings in supporting other functions within the department.

Self-determination theory asserts that in order for people to acquire high quality development and performance as well as motivation for a task, their psychological need of relatedness must be satisfied as well as their needs for competence and autonomy (Deci & Ryan, 2000). Through Lesson Study instructors were collaborating and building collegiality with each other which in essence means that instructors were connecting with each other and strengthening relationships. Again, without collaboration and collegiality the self-determination theory psychological need of relatedness may not be satisfied, and according to Gergen (2009), knowledge is created through relationships as well as their by-products of social interactions. Gergen (2009) emphasized that knowledge is a result of relationships and "it is within these relationships that we construct the world in this way or that" (p. 3).

Assertion 2

Assertion 2 is: The lessons created through Lesson Study were the byproduct of the collaborative reflection that took place in Lesson Study.

This assertion also relates directly to the primary research question.

Qualitative.

Collaborative reflection. Related to the theme of collaboration and collegiality was the collaborative reflection that took place in LS meetings. The research literature depicts the practice of Lesson Study as providing instructors with opportunities to reflect

on and improve each other's thinking about student learning and their instructional practice (Audette, 2004; Lewis & Tsuchida, 1999; Lewis, Perry, Hurd, & O'Connell, 2006; Lewis, Perry, & Murata, 2006; Lewis et al, 2011; Rock & Wilson, 2005; Stigler & Hiebert, 2009). Lesson Study is a reflective practice where instructors examine and discuss a variety of important issues regarding instruction and learning (Cerbin & Kopp, 2006). According to Chokshi and Fernandez (2004) a unique and original lesson is not the driving force of Lesson Study but what is most important is that LS facilitates opportunities for instructors to think about their teaching. Similarly, according to Lewis, Perry, Hurd, and O'Connell (2006) as well as Puchner and Taylor (2006), the development of lessons is a surface feature whereas the underlying feature that is really important in Lesson Study is the socio-emotional and cognitive impact of teachers learning from one another in a collaborative process. Moreover, effective Lesson Study relies on instructors' discussion, thinking, and observation on how students think (Lewis, Perry, Hurd, & O'Connell, 2006). Using a collective case study methodology, Puchner and Taylor (2006) discovered that Lesson Study led teachers to engage and collaborate in a new type of talking about teaching and learning. In the qualitative study by Rock and Wilson (2005), one of the major themes that emerged was the importance of peer collaboration in learning new approaches to instructional practices and gaining a better understanding of students.

The analysis of the reflective journals and semi-structured interviews produced a similar finding since all instructors depicted Lesson Study as an experience where they collaboratively reflected on their teaching practice through group dialogue as well as through the receiving of diverse perspectives and feedback. The LS participants viewed

Lesson Study as an experience that facilitated collaborative reflection in their teaching practice. Participants provided comments such as Instructor A shared "You see different viewpoints and then come up with your own" as well as "and us feeding off each other." Instructor B shared "Or okay let's change it or what are your reasons why or maybe I change my mind, so I think that has been awesome." Instructor C stated "And you get ideas that you never would have thought of yourself" and "the back and forth." Instructor D shared "we had a lot of discussions regarding the activities and even the questions in the activities." Instructor E stated "The in-depth reflection, discussion on the lesson design, impact on students. The in-depth reflection, as a group, we did it every time we taught it and observed it, we would talk about it." According to Gergen (2009), "as we speak together, listen to new voices, raise questions, ponder alternatives, and play at the edges of common sense, we cross the threshold into new worlds of meaning" (p. 5). Again, Gergen (2009) viewed social interaction and collaboration as essential to the construction of knowledge.

In addition, the analysis of the LS debrief meetings produced an overarching theme of recommendations where instructors collaboratively reflected on their teaching practice by providing perspectives and recommendations to each other regarding their teaching practices. Participants provided recommendations such as when Instructor D stated:

> Well, I think what we were thinking is when—if they get together in that group, at least take one of their finished products and put it up on the whiteboard so that we can see and compare them and be like, okay. You did a really good job. Then we'd put up the master one and kind of let them compare and rate how they did.

Furthermore, the analysis of the LS debrief meetings identified an overarching theme of evaluations where instructors collaboratively reflected on their teaching practice by providing positive feedback and critiques regarding teaching practices and ideas suggested in LS meetings. Participants provided evaluations such as when Instructor B stated:

> I liked it, I liked the handout but I still don't see the point of doing it two times. Like I would have them take the outline notes on the Cornell handout maybe and then… That's how I would maybe do it but I don't see the point in taking outline… Then doing Cornell again and then doing it again, to me it's monotonous and it wastes time.

Instructor C stated "Well, but even without doing that, I feel like you did a good job of making that activity part of the lesson because then you asked the class, What'd you think it means that diversity is the tip of the iceberg," and Instructor E shared "Well, it's just not… I don't think they take it too seriously, especially because it's so cartoonish and it is cartoonish, it's a cartoon and maybe they're not taking it so seriously because it's a cartoon." According to Gergen (2009), "Understandings of the world are achieved through coordinations among persons - negotiations, agreements, comparing views, and so on" (p. 6). Through the collaborative dialogue that facilitated these evaluations and recommendations as well as perspectives and feedback, instructors began to construct new knowledge and understanding. One of the primary principles of social construction stresses the co-creation of knowledge and that knowledge is created through relationships as well as their by-products of social interactions (Gergen, 2009)

Through the analysis of the reflective journals and semi-structured interviews, instructors also depicted the challenges associated with the group coming to a consensus on decisions as well as group dynamics. Many instructors felt that at times it was very

difficult for the group to agree on a decision and move forward with additional tasks. Many instructors recommended that the LS group be a smaller group of three to four people in order to facilitate the group consensus on decisions. One instructor also believed that certain personalities within a previous pilot LS group were not compatible and recommended the importance of forming groups with people of similar dispositions and characteristics. In the LS planning meetings instructors presented many different perspectives and ideas which at times caused conflict amongst instructors, yet throughout the LS planning meetings eventually there was compromise that produced the high quality lessons. According to Gergen (2009), within social constructionism, conflict is viewed as a key component for creating new realities and new ways of experiencing the world. The construction of these common realities is referred to as transformation (Gergen, 2009). Although group dialogue at times produced conflict in regards to group consensus, this challenge of group consensus could have been the catalyst for producing high quality lessons for students and transformational learning for the instructors.

One example of this conflict that produced new knowledge can be viewed in the LS planning meetings when instructors had different perspectives on whether the activity of creating outline and Cornell notes should have been completely separate producing a document with outline notes and a separate document with Cornell notes or could students create a document that combined the outline and Cornell notes. Instructor B who was going to teach the first research lesson was not present for this discussion since she had to leave early. Instructor D shared "to me, it's really hard combining the two together." Instructor A appeared to believe that the students could create a document that combined both styles when she stated, "I would easily be able to convert from outline to

Cornell, so I don't know if you want to make them do it or just have a short discussion about it." Instructor C shared that she agreed, and then Instructor D explained that it is important that each note-taking style is clear to the students and shared "blending an outline to Cornell could just be confusing for some of the students." The researcher then explained that most students would take notes in outline form on the right side of the Cornell notes so the students could easily create one document with both note-taking styles. Instructor E then shared "I agree. . . It's very easy to do." There continued to be a discussion regarding the two different approaches and what approach would be best for students. The researcher then used the white board to explain his perspective by drawing the Cornell notes and drawing the outline style within the right side of the Cornell notes:

> I'm just thinking as a student. You're telling me to do an outline form. I do the outline form. They say, now convert those to Cornell. I'm like, do I just copy that (pointing to the outline notes) here (pointing to the right side of Cornell notes), or what do you want me to do here?

Instructor E agreed and shared "I see what you're saying, Miguel, because the outline, we can just – I can just cut and paste this, put it right here. . . they're just gonna copy the exact same thing." The discussion continued with Instructor D and the researcher sharing their perspectives. The researcher then shared "maybe students get confused by doing it at the same time" and asked the group to come to a final decision. The group decided that Instructor D's approach could be more effective since the developmental education students could become confused. Instructor A shared "I think they'll both work." Then at the next LS meeting, Instructor B shared:

> I don't think that they're gonna want to do it three times, to be honest with you. I just can't imagine I would want to do it three times. The first way, to me, is—cuz all they're gonna be doing for the Cornell part is picking up key words and maybe

> writing a summary at the bottom rather than rewriting everything all over again. I don't think they're gonna want that.

The researcher then explained that they all thought both approaches were potentially good and shared that Instructor B would present first and "we'll be able to see one of the approaches." Instructor C then gained a new understanding after the collaborative reflection and shared, "It just sounds easier and more efficient, as we're talking about it right now, just to have them draw the line down and transform it into Cornell notes." Instructor D continued to believe it was important to separate the two styles.

As a result of this conflict in ideas, the group decided to try both approaches and assess the effectiveness of both approaches. For the first research lesson, Instructor B facilitated the activity by having students draw a line 2.5 inches from the left side of their papers, and she had students write outline notes on the right side of the paper combining the outline and Cornell styles. In the first debrief meeting, everyone believed this was an effective strategy. For the second research lesson, Instructor C facilitated the activity by having student take notes using the outline method, and then she provided the students a document with the Cornell template and had students convert their outline notes to the Cornell document thus separating the two note-taking methods. All instructors expressed liking the Instructor C's Cornell template handout and believed it was a good strategy. Instructor B shared, "I liked it, I liked the handout but I still don't see the point of doing it two times. Like I would have them take the outline notes on the Cornell handout maybe." Instructor C gained new understanding and said, "You brought up a good point of giving them the template and then having them take the outline notes." Instructor B shared that she believed that it was more realistic for students to take notes on their paper because

most would not have a Cornell template available to use in class but she also saw the benefit of them having a Cornell template. Through the collaborative reflection there seemed to be the understanding that both approaches were good. Moreover, it appeared that instructors believed the method of combining the outline and Cornell styles was more effective, and they arrived at the new understanding that when combining the two styles using the Cornell template could be very important in order to assist students with clearly learning both note-taking styles.

Examples from the LS planning meetings also lend support for the collaborative reflections that took place during social interactions that ultimately produced the new lessons, activities, and instructional practices which can be considered new knowledge. Cerbin and Kopp (2006) emphasize that the research lesson is a team product that is created through the collaborative work of instructors. Instructors' collaborative dialogue and group thinking regarding the note-taking activities used for the research lesson serves as a good example of this collaborative reflection. The following is a description of the dialogue and collaborative reflection that ultimately produced the final note-taking activities which represented an integration of all instructors' perspectives and feedback:

In an LS planning meeting, Instructor D first provided the idea that "It might be cool to show a ten-minute video and . . . make them take notes", then Instructor E shared her previous note-taking activity that also utilized a video "after I teach the three, and then I show a video, and then I make them take notes in all three (note-taking styles). Then they have to swap'em and critique each other." Instructor D questioned Instructor E's instructional strategy by sharing "Do you have them do all three note-taking methods each student (on the same video at the same time)," and "then how do they know when

they should switch and do the other one?" The group began to ponder the effectiveness of this strategy and considered other alternatives. Instructor D then shared the idea of having students take notes in any method and then make the students convert those notes into another method. The group continued the discussion and decided that using the video and then converting the notes would be an effective tool such as when Instructor C mentioned "I love what you just said Instructor D about taking notes in one way and then transferring it to another way." Instructor B provided the recommendation that "I think it'd be good to show them examples of it just so they know what it is" referring to examples of all three note-taking styles. Everyone agreed with this strategy. Instructor D shared the following recommendation regarding the note-taking activities "I just think that the process of letting them do it how they're comfortable, and then wiggling them into understanding those other types." Instructors questioned this idea such as when Instructor B says "What if nobody wants to do mind mapping?" and Instructor A shared "A student who normally does outline might not realize that they would identify better with mindmapping, by making them do that, they might identify with it more." Instructor E was thinking of providing a longer video and Instructor B suggested "I want them to learn this skill. To me the way they're gonna learn best is by breaking it up into smaller things." The group began to try to decide how to structure the note-taking activities again. Instructors E and A believed that it could be appropriate to let each student decide which note-taking method to utilize. Instructor E shared, "I don't think it really matters. I thought we'd already decided we're gonna tell them pick which one they want." Instructor C questioned this strategy by referring back to the learning goal when she shared "Except that we want'em to take complete notes," and "Well, I just feel like they

should concentrate on making sure they get the key points, and just focus on one style of note-taking. Then learn the other after, when they transcribe them." Instructor A and Instructor B both shared that most students are probably most comfortable with outline note-taking and suggested that we should be more directive in telling them what method to utilize first.

The group continued the discussion and ultimately decided on an approach for teaching the note-taking activities that appeared to integrate the best ideas from the group since they took into consideration student learning and thoroughly discussed it in terms of how and why the lesson activities or instructional practices would produce the kind of thinking or behaviors that the group expected students to achieve. Instructor D then shared the new knowledge that was different from his original idea that was shaped by the group when he stated:

> I think we really should be directive. . . You're gonna watch this video, you're gonna use the outline method. . . after they watch the video, I think we should put up our own notes of the outline method of the video, so that they at least can see where their notes are maybe lacking . . . Okay, now we're gonna do the mind map, so now you're gonna get into groups.

Instructor E shared the idea of having students complete the mindmap on poster board paper. The final note-taking activities were a by-product of the dialogue and collaborative reflections that took place in the LS planning meetings. The final note-taking activities had students watch a video and take notes using the outline method, compare their notes to an example created by the instructors, then in groups of three convert their outline notes to Cornell notes again comparing their Cornell notes to an example created by the instructors; then in the same group of three they would convert their Cornell notes to a mindmap using poster board paper. In this example the LS group also discussed and

collaboratively reflected on other aspects of facilitating the note-taking activity such as what total number of students would produce the most effective group learning experience as well as what video would provide the most effective learning experience for the students.

This example of dialogue and collaborative reflection was prevalent throughout the LS planning meetings as instructors created new knowledge that was developed from their perspectives and feedback regarding attention getters, hands-on experiential learning activities, group discussions, lectures as well as lesson PowerPoint slides, documents, and videos. This collaborative reflection produced the high quality note-taking and diversity research lessons that contained the ideas and perspectives from each of the LS members.

Assertion 3

Assertion 3 is: Lessons created through Lesson Study produced a higher quality learning experience for students than lessons that were not created through Lesson Study.

This assertion provides information that helps to begin to answer all three research questions.

Qualitative.

Improved student achievement and learning. Some researchers associate Lesson Study with improved student achievement and learning such as those studies that link the success of Japanese students to the Lesson Study experience (Lewis & Tsuchida, 1999; Lewis, 2000; Lewis, Perry, & Murata, 2006). There are also studies, such as the one depicted by Lewis, Perry, Hurd, and O'Connell (2006), that claim a causal connection between LS and student achievement results since LS appeared to be the primary difference between the professional development of higher performing and lower

performing schools. Lesson Study participants viewed Lesson Study as an experience that facilitated improved student learning in their instructional practice. From the analysis of the reflective journals, semi-structured interviews, and LS debrief meetings' qualitative results, all the instructors emphasized that the note-taking lesson that was collaboratively created through Lesson Study was a much higher quality of learning experience for students than the note-taking lessons that they had individually previously created and facilitated. Not all the instructors teach a separate diversity lesson in their college success course but instead embed concepts of diversity throughout the semester. However, all the instructors provided positive feedback and a positive evaluation regarding the diversity lesson that was created through Lesson Study.

Instructors provided positive comments regarding LS lessons. All the instructors provided positive comments regarding the quality of both the note-taking and diversity lessons created through Lesson Study. In regards to the note-taking lesson, participants shared many positive comments such as participant A shared "I think that this is going to teach about note-taking techniques in one of the most fun ways possible," participant B stated "I thought our lesson was amazing," participant C stated "Note-taking, that one was amazing," participant D shared "I liked it a lot," and participant E stated "I thought the lesson went well." In regards to the diversity lesson, participant also shared many positive comments such as participant A shared "I really feel like our lesson plan was great that we developed," participant B "Overall I thought the lesson was good," participant C "I think the lesson was really good," participant D "I feel we have created something that will truly make our students think. It's a powerful lesson," and participant E "I really enjoyed the diversity lesson." In the LS debrief meetings, instructors believed

that all the activities in the note-taking lesson worked well and that there were no major changes needed. However, after the first debrief meeting for the diversity lesson, instructors decided that one activity did not work well and replaced this activity with a new activity. In the second debrief meeting for the diversity lesson, all the instructors believed that there were no major changes needed to the modified diversity lesson. Instructors believed that the final versions of the note-taking and diversity lessons created through Lesson Study were of high quality since they did not need any major modifications.

Instructors' more positive comparison of LS lessons versus previous lessons. Four instructors provided a direct comparison where they expressed a much more favorable evaluation of the lessons created through Lesson Study versus their previous lessons. The field notes capture Instructor A emphasizing that the note-taking and diversity lessons created by the LS group were much better than her previous note-taking and diversity lessons. Instructor B shared a more favorable evaluation of the LS note-taking lesson:

> It was way better than any other notes lecture I've ever had. I'll say that. . . This is way better than the notes lecture I had. Mine was terrible. I'm so glad we did this one. I feel like the students got a lot more out of it. . . . I just thought the whole—again, the whole lesson itself was way more engaging, I thought, than what I've had in the past. I don't know what other people had, but just way better.

Instructor C provided a more favorable appraisal of both the note-taking and diversity lessons when she expressed, "My previous note taking lesson was very dry. . . The note-taking lesson we created had them apply each strategy, which I think was way more effective" and "My previous diversity lesson consisted of . . . This lesson was richer in that we had them reflect more on their own experiences with stereotyping and

discrimination in small groups, which allowed them to go deeper into their own individual experiences." Instructor D also provided a more favorable appraisal of both the note-taking and diversity lessons. Instructor D expressed that, "The new lesson that we created was very different. Our lesson pushes the students a little more and tries to get them to share their experiences" in regards to the diversity lesson. Instructor D also shared the following comparison regarding the note-taking lessons:

> Overall the new lesson that was created was 100% better. I feel it gave students a much better understanding of the different note-taking methods. Having them actually take notes on a video and then transcribe them to other note taking methods was very successful. Especially where mind-mapping was concerned. Students were definitely hands on and had a much better experience and learned by doing... I think it was a much better lesson than what I previously had.

Instructors planned to use LS lessons in the future. When asked by the researcher after the first LS debrief meeting, all instructors said they would use the note-taking lesson created through Lesson Study in future classes versus the note-taking lessons that they previously used in their classes. Instructor A shared, "I'm actually hoping I can use it tomorrow. . . I would love to try it out tomorrow," Instructor B stated "I'm totally gonna use that lesson from here on out. I'm never going back to my old lesson. It was terrible compared to the one we actually created together," Instructor C stated "It's something I will be using for years. I can tell you that already," Instructor D shared "I'll definitely use it," and Instructor E expressed "Definitely, I would." Moreover, the researcher shared with all the LS participants at the start of the Lesson Study experience that they were not required to teach the note-taking lesson created through Lesson Study in their classes that were not being observed by the LS group, yet all the instructors except one instructor utilized the LS note-taking lesson in all their other

classes. Four of the five instructors also shared that they would use the entire diversity lesson in the future or at least aspects of the diversity lesson: Instructor A "Yes, I would totally do this again," Instructor B "specifically the *What Would You Do* video. I will probably use that in future classes because it is current. I will definitely use the *World As a Village* website too," Instructor C "I like it. I'm glad it's there. I'll be using for a while," and Instructor E "I really enjoyed the Diversity Lesson and I plan to use it in the future. If it wasn't for Lesson Study I wouldn't have a Diversity Lesson to use in my classes."

Quantitative.

The analysis of the student survey quantitative data also provides support for the assertion that the lessons created through Lesson Study produced a higher quality learning experience for students than lessons that were not created through Lesson Study.

Students perceived groups' LS lessons as being higher quality and more engaging. The mean scores for all five items on the student survey for the instructors' combined note-taking lessons as well as the instructors' combined diversity lessons that were created through Lesson Study were higher than the mean scores for the instructors' combined lessons not created through Lesson Study. The difference between the mean scores for two of the five student survey items for the instructors' combined LS note-taking lessons compared to the non-LS combined lessons were found to be statistically significant. Question 2 which asked if today's lesson engaged me more than previous lessons in this class was found to be statistically significantly as well as Question 5 which asked how students would rate the quality of today's college success class learning experience in comparison to most lessons in previous college success classes was also

found to be statistically significant. It appears that students found the note-taking lesson created though Lesson Study as more engaging as well as providing a higher quality of learning experience than those combined lessons that were not created through Lesson Study. In addition, the difference between the mean scores for all five student survey items for the instructors' combined LS diversity lessons compared to the non-LS combined lessons were found to be statistically significant. It appears that students also found the diversity lesson created though Lesson Study as more engaging as well as providing a higher quality of learning experience than those combined lessons that were not created through Lesson Study. It is important to highlight that students not only found the quality of the learning experience as being better for a LS lesson with an interesting topic such as diversity but also for a LS lesson that had a less interesting topic such as note-taking. A review of the LS planning meetings revealed that one of the reasons that the LS participants chose to create a note-taking lesson was because they felt the topic of note-taking was very boring for students, and instructors found teaching the topic of note-taking very challenging. Instructors B, C, and E specifically stated that the topic was boring such as when Instructor C shared "It's such a boring topic, and it's so boring." Instructors B, D, and E also shared their difficulties with teaching the topic of note-taking and providing a quality learning experience to students when Instructor B stated "I don't even like doing it. . . I've tried other things and nothing really seemed that exciting" and Instructor D mentioned "I don't know if it's helping them learn note-taking."

Students perceived each instructor's LS lessons as higher quality and more engaging. Moreover, the analysis of each individual instructor's combined lessons created through Lesson Study in comparison to each individual instructor's combined

lessons not created through Lesson Study disclosed that all instructors had in common a higher mean score for questions 2 and 5 for their individual combined lessons created through Lesson Study versus those combined lessons not created through Lesson Study. These questions specifically had students compare the quality of the learning experience in the LS lessons versus the non-LS lessons since Question 2 asked if today's lesson engaged students more than previous lessons and Question 5 asked how students would rate the quality of today's college success class learning experience in comparison to most lessons in previous college success sessions. Question 1 which asked students if the lesson created through Lesson Study engaged them had a higher mean score in six of the seven individual instructor's combined LS lessons. Although all the individual instructor's combined diversity lessons had higher mean scores on questions 3 and 4 pertaining to the topic being interesting, only two of the four individual instructor's combined note-taking lessons had higher mean scores on question 3 and 4. Again, the value of these note-taking lessons created through Lesson Study is even more profound when one considers that two of the note-taking lessons were able to provide a higher quality learning experience and engage students more even though students were not interested in the topic of note-taking. In addition, question 5 comparing the quality of the learning experience and question 2 comparing the engagement in the session were found to be statistically significant in three of the seven individual instructor's combined LS lessons. One LS note-taking lesson had lower mean scores on questions 3 and 4 pertaining to the topic being interesting yet produced statistical significance on question 5 comparing the quality of the learning experience. Table 19 provides an illustration of these findings.

Table 19

LS Lesson's Higher Mean Scores and Statistical Significance

Instructor	LS Lesson Topic	Student Survey Questions with Higher Mean Score	Questions with Statistically Significant Results
A	Note-taking	Q: 1, 2 and 5	Q: 5
A	Diversity	Q: 1, 2, 3, 4 and 5	Q: 1, 2, 3, 4 and 5
B	Note-taking	Q: 1, 2, 3, 4 and 5	Q: 2, 4 and 5
C	Note-taking	Q: 2 and 5	none
C	Diversity	Q: 1, 2, 3, 4 and 5	Q: 1, 2, 3 and 4
D	Note-taking	Q: 1, 2, 3, 4 and 5	none
E	Diversity	Q: 1, 2, 3, 4 and 5	none

Students provided higher pedagogical and evaluative ratings to the LS lessons.

In addition, the analysis of the student survey qualitative data also provides support for the assertion that the lessons created through Lesson Study produced a higher quality learning experience for students than lessons that were not created through Lesson Study. The mean score for three of the four codes (pedagogical, evaluative, and affective) from the open-ended items on the student survey for the instructors' combined note-taking lessons as well as combined diversity lessons that were created through Lesson Study were higher than the mean scores for the instructors' combined lessons not created through Lesson Study. The mean score for the topical code from the open-ended items on the student survey for the instructors' combined note-taking lessons as well as combined diversity lessons that were created through Lesson Study was lower than the mean scores for the instructors' combined lessons not created through Lesson Study. It appears that

overall student comments reflected a higher rating for the pedagogical practices found within the lessons created through Lesson Study, and at the same time they also seemed to have rated the topic of note-taking and diversity as being less interesting than the non-LS lessons. In addition, student comments seem to reflect a more positive evaluation of the lessons created through Lesson Study versus non-LS lessons.

How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?

Instructors began to view Lesson Study as well as their teaching practice as a means for creating high quality lessons. Instructors attributed the high quality lessons to the Lesson Study experience within their teaching practice. Instructor A stated "Being part of the Lesson Study not only helps to develop better lessons . . ." Instructor B and Instructor E shared how it was really useful to have created high quality learning experiences for future classes. Instructor B stated "Just having all those different activities in my bag of tricks is really, really helpful" and Instructor E shared "I don't have to freak out when I'm gonna teach on diversity, and when I'm gonna teach on . . . I know I got a solid lesson that wasn't created just by me." Instructor C viewed Lesson Study as a means for creating quality lessons when Instructor C shared "It's just I want all my lessons to be as good as the ones that we create. Every lesson packed with good experiences, good information, some fun in there, interactive" and "I thought Lesson Study was a valuable way to create more meaningful lessons that engage students." Similarly, Instructor D shared "You definitely get some good lessons." Instructors began

to view their teaching practice through the Lesson Study experience as a means for producing high quality learning experiences for students.

Shared body of professional knowledge. The research literature demonstrates that Lesson Study is a means for facilitating the creation of a body of shared professional knowledge (Chokshi and Fernandez, 2004; Fernandez, 2002; Fernandez & Chokshi, 2002; Lewis, Perry, Hurd, & O'Connell, 2006; Lewis, Perry, & Murata, 2006). Lesson Study groups can create reports on the summary of their studies which captures insights gained and a record of their research as well as conduct open houses so that instructors can learn from each other's work (Fernandez, 2002). Lesson Study participants also viewed Lesson Study as an experience that facilitated the creation of a shared body of professional knowledge within their instructional practice. The analysis of the reflective journals, semi-structured interviews, and LS debrief meetings produced similar findings since the lessons that were created through Lesson Study were not only being used by the LS instructors' classes that were not being observed, but these lessons created through Lesson Study were also being used by adjuncts who were not participating in Lesson Study. Lessons created through Lesson Study were being saved in a Counseling Services group folder on the computer server. The researcher field notes show that adjuncts began asking for access to the Lesson Study folder on the department's server. In addition, as seen through the discussion regarding the quality of the lessons that were created all the instructors planned to use the entire lessons created through Lesson Study in the future or parts of those lessons.

How, and to what extent, will Lesson Study impact the self-efficacy of the college success course instructors?

Self-determination theory asserts that in order for people to acquire high quality development and performance as well as motivation for a task, one of their psychological needs that must be satisfied is competence as well as autonomy and relatedness (Deci & Ryan, 2000). As seen through assertion three, the Lesson Study experience allowed instructors to satisfy the competence need which in general terms is described as succeeding in what you do. Instructors experienced the success of the high quality lessons created through Lesson Study. This success was experienced through the facilitation of these LS lessons in the instructional sessions that were observed as well as in the individual instructional sessions that were not observed. In addition, instructors received summary reports from the student surveys each week which highlighted the positive impact the LS lessons had on student engagement and learning. This sense of competence as a result of collaboratively developing as well as facilitating lessons that produced high quality learning experiences for students could have been a catalyst for participants' increased efficacy for teaching. The study by Puchner and Taylor (2006) revealed that when instructors perceive their in-depth planning of a lesson as producing student engagement and learning never before witnessed, they begin to believe that the instruction of high quality learning experiences are in their power. Efficacy for teaching could also be viewed in the instructors being willing and freely choosing to teach the lesson created through Lesson Study in their classes that were not being observed. In the LS planning meetings at the beginning of the semester the researcher explained:

> Right, but you may choose to. You may say, "I wanna try this out," in one of those other classes. Maybe you won't. You'll let me know whether you do or don't. . . I definitely won't make you use it, but you may choose to; you may not. That's okay

What changes in their instructional practices did the college success course instructors make as a result of participating in Lesson Study?

One of the changes that the participants made was that they decided to teach the lessons created through Lesson Study in their classes that were not being observed by the group. The satisfaction of the competence need as a result of experiencing the facilitation or observation of high quality lessons could have motivated instructors to change their instructional practices by attempting the lessons and activities created through Lesson Study in their other classes.

Assertion 4

Assertion 4 is: The Lesson Study experience facilitated instructors' transformational learning as well as changes to their teaching practice.

This assertion relates directly to the third research question, yet it also provides insight to the primary and secondary research questions: What changes in their instructional practices did the college success course instructors make as a result of participating in Lesson Study?

Although there is great value to creating a quality lesson, according to Chokshi and Fernandez (2004), "it is important to remember that the reason for conducting lesson study in the first place is to improve one's practice" (p. 523). "By engaging in the formal process of lesson study, teachers will carry an informal 'lesson study mentality' into their daily practice" (Chokshi & Fernandez, 2004, p. 522). Even more beneficial than the

quality lessons that were created in Lesson Study was the impact that Lesson Study had on instructors' teaching practice. Cerbin and Kopp (2006) emphasize that through the experience of LS, instructors do not just improve their instruction of one lesson but build their abilities and knowledge to improve teaching and learning in other classes and instructional settings. Instructors made changes to their teaching practices as well as transformational changes within themselves as a result of the learning and collaborative reflection that took place in the Lesson Study experience. Chokshi and Fernandez (2004) explain that in Lesson Study the creation of a lesson is not a discrete event isolated from teaching activities. Chokshi and Fernandez emphasize that the experience of Lesson Study is far more reaching than the creation of a quality lesson because it facilitates instructors' integration of what they have learned in Lesson Study into their daily practice of teaching.

Qualitative.

Instructional development and learning. Many who have studied Japanese education have identified Lesson Study as a key factor in the success of Japanese teachers and their students (Lewis & Tsuchida, 1999; Lewis, 2000; Lewis, Perry, & Murata, 2006). Stigler and Hiebert (2009) attribute Japan's high achievement in education to Lesson Study's process of enabling instructors to learn to teach by treating teaching as an object of study where instructors improve teaching through careful study of what works and does not work in student learning. Similarly, Fernandez and Chokshi (2002) describe Lesson Study as a "Japanese professional development process that enables teachers to systematically examine their practice in order to become more effective instructors" (p. 128). Cerbin (2011) also states "Lesson study is a powerful way for new teachers to learn

how to teach" (p. 21). Studies such as those depicted by Audette (2004), Rock and Wilson (2005), Puchner and Taylor (2006) as well as Stewart and Brendefur (2005) demonstrate that Lesson Study could serve as a valuable professional development experience since instructors considered themselves to be more effective as a result of LS and perceived LS as positively impacting their instructional practice.

Participants viewed Lesson Study as an experience that facilitated learning about teaching in their instructional practice. Through the reflective journals, semi-structured interviews, and LS debrief meetings, instructors depicted Lesson Study as a very effective and valuable professional development experience that provided them with many benefits to their instructional practice. All instructors shared some positive general comments regarding the value of the Lesson Study professional development experience such as the following comments: Instructor A "I think it's a really great thing," Instructor B "It has been an amazing experience," Instructor C "I mean it's so far reaching," and Instructor D "this was a great experience," and Instructor E "it's too valuable to me to let go." Instructors also stressed the value of Lesson Study in assisting them to improve their teaching and become better instructors. For example Instructor A stated, "but I am saying that I am a much better instructor than I was last year, and I don't think I would be there without having been a part of this," Instructor B shared, "But I feel like it has been super educational and it has taught me a lot about myself as a teacher," Instructor C stated, "It's elevating the quality of our instruction," Instructor D shared, "It definitely makes us grow as teachers," and Instructor E shared how those evaluating her have noted a positive change in her teaching, "Even my chair noticed it when she observed me,

which she just did my evaluation two days ago. She said, 'I've noticed a big difference.' My vice president said the same thing."

Changes in instructional practice. Through the analysis of the reflective journals and semi-structured interviews, instructors described four unique changes in their instructional practice under the overarching theme of change and these were coded as: (1) preparation, (2) teaching approach, (3) focus on evaluating instruction, and (4) focus on student learning goals. Through the analysis of the LS debrief meetings, instructors described changes in their instructional practices under the overarching theme of change "teaching" code.

Preparation. First, all of the instructors began to dedicate more time to the preparation of lessons such as spending more time thinking about how to teach a lesson throughout the day as well as dedicating more time to devising more detailed and engaging lessons. For example, Instructors A and B discussed how they are thinking more about how to change or enhance lessons such as when Instructor A shared, "I have noticed that since I became a part of this group, I am now actively taking notes when I watch t.v. I am actively thinking about clips, etc that I can use to teach lessons," and Instructor B stated, "This was more helpful creative-wise. It just made me even more thinking outside the box with my own class." Instructors C, D, and E, all specifically stated they were spending more time preparing for lessons such as when Instructor E stated, "As a result of lesson study I approach lesson planning much earlier." In addition, Instructors B and C both specifically stated that they spend time planning activities to engage students. One of the major steps in the Lesson Study process that was

substantially viewed in LS planning meetings was the collaboration of participants on the instructional design of lessons.

Teaching approach. Second, instructors also began to attempt new teaching approaches in their classrooms that were learned through Lesson Study as seen through all three data sources. Instructor A specified particular changes to her teaching such as having students change discussion partners, having students independently think before joining a group, and she also shared, "I have decided to try to slow down and give students more time to share. This is a result of being part of the lesson plan study!" Instructor B highlighted how she has changed the structure of her class by introducing more activities to engage students, and she even mentioned, "I changed other lectures this week because of the lesson study that we are creating. I modeled my Reading and Memory lecture off of the lesson study to make it more engaging." Instructor C also mentioned some specific changes to her teaching such as asking less rhetorical questions and waiting longer to give students an opportunity to answer. Instructor C also mentioned that Lesson Study has helped her to be more organized and on task in the class as well as deliberate with activities. Instructor C also mentioned Lesson Study's impact on her engagement of students when she stated, "I'm finding that creating the lesson [referring to LS research lesson] is helping me to create more engaging lessons for my classes overall." Instructor D provided fewer comments regarding change although Instructor D did mention trying new activities as a result of Lesson Study and provided examples of these attempts. Instructor E also mentioned Lesson Study impacting her willingness to try new activities that she would not have tried before as well as impacting her engagement of students such as when she said, "As a result of participating in lesson study for the past

year, I feel that I make a more conscious effort to make sure I use more engaging activities when I teach." Another major step in the Lesson Study process is the attempting of new teaching strategies in the instruction of research lessons or in the rehearsals of research lessons.

Evaluation of instruction and focus on student learning goals. The following two changes were found in the qualitative data, but these changes were not as prevalent as the changes in preparation and teaching. Third, as seen through the analysis of the reflective journals and semi-structured interviews, all the instructors also began to place more attention on evaluating the effectiveness of their instruction as well as began to feel more proficient in this task. Another major step in the Lesson Study process is studying the effectiveness of the lesson, and participants were viewed collaborating on this step in LS planning meeting before the instruction of each research lesson. Instructors collaboratively devised observation protocols and discussed how best to study the lesson. As seen through the analysis of the reflective journals and semi-structured interviews, three instructors began to place more attention on the student learning goals and objectives for the lesson as a result of the lesson creation process experienced in Lesson Study. Another major component of Lesson Study that was viewed in LS planning meetings was instructors collaboratively devising student learning goals to guide the construction of the lesson.

Motivation for creativity and producing higher quality learning experiences. Through the analysis of the three qualitative data sources, all instructors depicted changes in their motivation such as being inspired to be more creative and develop more engaging lessons. Instructor A shared, "The creativity of it is the greatest part because it has

inspired me to be better teacher, to be more creative," and Instructor B stated, "I don't know what the defining moment was but it has completely sparked my creativity in a whole other way. . . it has really sparked my creativity within and how can I make this more exciting and fun," Instructor C shared "It's just I want all my lessons to be as good as the ones that we create. Every lesson packed with good experiences, good information, some fun in there, interactive," and Instructor D stated:

> Then if we can improve it, we can improve a lesson that we know is boring and make it more engaging, more interesting for the students then that just encourages you to work on your other lessons to make them better.

Instructor E stated, "It's really caused me to try to be more creative, and really try to put a lot of variety in my lessons."

Lesson Study also motivated instructors to improve the quality of the learning experience for students as well as to facilitate new strategies or lessons learned in Lesson Study. For example, Instructor A stated, "If I get the opportunity to teach again in the fall, technology is a huge thing that's gonna change with me," Instructor B shared "This is totally inspired by this semester and ever since we've created this one [referring to LS note-taking lesson] it's made me change everything else and my one today really sucked so we need to do tests next," Instructor C shared, "You look at all your other lessons and you're like, Okay. They all need to come to this standard [referring to LS standard of engagement and quality]," "Instructor D stated, "by participating in this process it encourages you and motivates you to go tinker with your other lessons and make them a little better too," and Instructor E shared, "It makes you want to work on your craft more."

Instructors also depicted their motivation to create more lessons through Lesson Study and continue participating in the Lesson Study process in the future. Instructors depicted wanting to continue to collaborate in improving their instruction such as when Instructor A said, "Well, I mean I would love to be part of, collaborate with other faculty here," Instructor C shared, "I'm hoping that we continue. Yeah. I'd like to do a lesson study for all of our lessons for college success," and Instructor E shared that she wanted to create lessons through Lesson Study for every competency in the college success class and stated, "I hope we don't let it go. I'm hoping to continue it, even if it means I facilitate it."

This increased motivation and inspiration for LS instructors in improving their teaching practice may be understood through the guiding theories of this study. Gergen (2009) asserts that collaborative relationships and dialogue are the main source of inspiration and action with groups. It appears that the collaboration and discussions that took place in LS meetings may have fostered positive actions amongst instructors viewed through their changes in teaching practice as well as inspired them to improve their practice and the learning experience for students. In addition, self-determination theory asserts that in order for people to acquire high quality development and performance as well as motivation for a task, their psychological needs of competence, autonomy, and relatedness must be satisfied (Deci & Ryan, 2000). Since it appears that the self-determination theory psychological needs of competence, autonomy, and relatedness are satisfied in the Lesson Study experience, instructors may have acquired high quality development and performance as well as motivation for improving their teaching practice. Research studies on Lesson Study also have revealed that when instructors are

able to witness student engagement and learning that they believed was not possible, they become motivated to continue to improve their instructional practice (Lewis, Perry, Hurd, & O'Connell, 2006; Lewis & Tsuchida, 1999; Puchner & Taylor, 2006).

Insights. Through the analysis of the reflective journals, semi-structured interviews, and LS debrief meetings, instructors depicted changes in insight and new perspectives. Instructors received some important new insights as a result of the Lesson Study experience that produced transformational learning for them. These insights seem to correlate with the changes they made to their instructional practice and may also be attributed to the collaboration and discussions that took place in LS meetings. According to Gergen (2009), "the moment we begin to speak together, we have the potential to create new ways of being."

Instructor A mentioned many times that she now realized that she had more autonomy and freedom to be creative and not be required to follow the textbook. Instructor A expressed this sense of transformational learning when she shared, "Well, I just feel – well, I mean I think it helps to feel like I can have my own creativity in the class which I didn't know before. Well, because then that makes it more about you." Instructor A also mentioned new insights aligned with her changes in teaching practice such as, "I realized this week that I move too fast on topics when teaching," "Sometimes I tend to move on too quickly rather than allowing silence. Sometimes it takes students a few minutes to gain the courage to share," and "I am pretty good on my feet as far as changing things up on the fly . . . however, it may be more beneficial for the student and for me to be well prepared before class."

Instructor B's changes in insight also were aligned with her changes in teaching practice revolving around engaging students. Instructor B mentioned how she realized she needed to structure her class in a manner where her lectures were shorter in length and where she provided more activities in order to engage students. Instructor B expressed this sense of transformational learning when she shared, "I realize, maybe more than ever now, that it is vital to get someone engaged if you want them to learn what you are teaching them." Instructor B shared insights such as the realizations that information needs to be current for students, to get students engaged you need to get students physically moving, as well as the importance of attention getters.

Instructor C also experienced changes in insight that were aligned with her changes in teaching practice. Instructor C expressed the importance of having more activities in lessons and integrating activities that address all the different learning styles such as when she stated, "I also have noticed that it is better to have too much planned than too little because you can always cut stuff out, but it's not always easy to add to a lesson on the fly," and "Well, it has me more aware of integrating all the different learning styles into every single lesson." Instructor C expressed this sense of transformational learning when she shared, "It just makes me realize that all the lessons need to be that interactive and that full."

Instructor D shared insights regarding being more open to new ideas on how to engage students such as the realization, "that there's always a better way [referring to teaching]" and the new insight that, "I think Lesson Study has definitely impacted me in a way where just have more ideas and better understanding of how to reach students in different ways."

Instructor E also experienced changes in insight that were aligned with her changes in teaching practice such as, "I have learned that true lesson preparation should be done weeks in advance, not days in advance, if I want to produce a quality lesson," and "What I have learned when teaching these lessons is that students seem most engaged when there is variety within lesson." Instructor E provided many comments regarding her new insight about being open to try new activities that were outside her comfort zone but that were engaging to students such as, "I think that is what's important, is that Lesson Study helps me to see that it's not all about me and what I like. It's what are you supposed to be teaching?" and "I really was uncomfortable at first. Now I'm more receptive to do the fun things." Instructor E expressed this sense of transformational learning when she shared:

> I realize that my true purpose as an instructor is to be accountable for student engagement and learning. If I am not preparing, evaluating student behavior and reflecting on what is happening before, during and after a lesson, activity, or assignment then I am not doing my job.

Lewis and Tsuchida (1999) highlight that Lesson Study influences instructors' teaching philosophies and provides them with new insights as they receive feedback and new techniques from viewing research lessons.

Quantitative. In the LS planning meeting and debrief meetings, instructors collaboratively discussed lesson activities and pedagogical practices for teaching the lesson. The analysis of the student survey closed-ended questions revealed that the mean score for all five items on the student survey for the instructors' combined note-taking lessons as well as the combined diversity lessons that were created through Lesson Study were higher than the mean scores for the instructors' combined lessons not created

through Lesson Study. Moreover, the instructors' combined LS note-taking and combined LS diversity lessons both had in common statistical significance in regards to the difference between the mean scores for Question 2 which asked if today's lesson engaged me more than previous lessons in this class and Question 5 which asked how students would rate the quality of today's CSC100 class learning experience in comparison to most lessons. In addition, the analysis of each individual instructor's combined lessons created through Lesson Study in comparison to each individual instructor's combined lessons not created through Lesson Study disclosed that all instructors had in common a higher mean score for questions 2 and 5 for their individual combined lessons created through Lesson Study versus those combined lessons not created through Lesson Study. Question 5 comparing the quality of the learning experience and question 2 comparing the engagement in the session were found to be statistically significant in three of the seven individual instructor's combined LS lessons. These results could be an indication that instructors were making changes not only to the note-taking and diversity lessons that were being observed but also to those lessons not being observed by the LS members. These instructional changes could have been creating a higher quality learning experience for the students as well as could have been engaging students more in learning.

In addition, the analysis of the student survey open-ended questions revealed that the mean score for three of the four codes (pedagogical, evaluative, and affective) from the open-ended items on the student survey for the instructors' combined note-taking as well as diversity lessons that were created through Lesson Study were higher than the mean scores for the instructors' combined lessons not created through Lesson Study. The

mean score for topical code from the open-ended items on the student survey for the instructors' combined note-taking as well as diversity lessons that were created through Lesson Study was lower than the mean scores for the instructors' combined lessons not created through Lesson Study. It appears that overall student comments reflected a higher rating for the pedagogical practices found within the lessons created through Lesson Study, and at the same time they also seemed to have rated the LS topics as being less interesting than the non-LS lessons. Instructors appeared to be making positive changes to their pedagogical practices in the LS lessons, and students were providing positive evaluations of these pedagogical practices. In addition, all four individual instructor's combined LS note-taking lessons and all three individual instructor's combined LS diversity lessons had mean scores on the pedagogical code that were higher than each individual instructor's combined non-LS lessons.

How, and to what extent, will Lesson Study impact the self-efficacy of the college success course instructors?

One could argue that it would be very difficult for instructors to make changes to their teaching practices unless they were also beginning to gain an increased sense of efficacy for teaching. Instructors freely chose to facilitate LS lessons and the pedagogical practices within these lessons in their classes that were not being observed by the LS group. There was only one instructor who chose not to use the LS note-taking lesson in her class in which she administered the student surveys, but Instructor E did choose to utilize the LS diversity lesson at the end of the semester.

How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?

This assertion demonstrates that instructors may have viewed Lesson Study as well as their teaching practice as a profession that requires continuous change and learning in order to realize improvement and strive for excellence. This assertion also demonstrates that instructors viewed Lesson Study as a very beneficial professional development experience that positively improved their instructional practice.

Culture of learning from practice. The research literature highlights that the practice of Lesson Study facilitates instructors learning from their practice and classrooms or in other words their context (Audette, 2004; Fernandez, 2002; Lewis, Perry, Hurd, & O'Connell, 2006; Rock & Wilson, 2005). According to Chokshi and Fernandez (2004), the learning from Lesson Study is very concrete because the activities of Lesson Study are embedded in the realities of the classroom. In addition, Sibbald (2009) believes that the authentic contextual nature of Lesson Study as well as its capacity to allow instructors to address pedagogical practices and content knowledge within their particular context contributes to the success of Lesson Study. Similarly, through Lesson Study teachers learn to improve teaching by treating teaching as an object of study where they examine what works and does not work in regards to their teaching as well as student learning (Stigler & Hiebert, 2009). This feature of Lesson Study is very different from other professional development experiences and seems to have a substantial impact on instructional development.

Through the reflective journals, semi-structured interviews, and LS debrief meetings a similar finding was discovered since instructors depicted Lesson Study as an experience where they were able to learn by applying their teaching practice to the realities of their context which was their classrooms versus learning that takes place outside the actual work context. Instructors viewed Lesson Study as an experience that facilitated learning through concrete practice within their teaching practice. In the overarching theme of learning from practice, all the instructors described many examples where they learned through the observation and teaching of a lesson in their classrooms. Many times this learning that took place through the observations and instructions were focused on student learning and engagement. All participants provided many examples of learning from practice such as when Instructor B stated:

> When we choose the mind map, I thought, 'I don't think they are really going to get into this.' You know I was excited to see what happened but I was blown away by how involved they got in that and you they got really into it. They impressed me. I was very impressed by that.

Another example of learning from practice can be found in Instructor D's comment:

> Definitely I had some ideas on the lesson that I wasn't sure was going to work very well and actually it turned out pretty good in the class that I was here to observe. At the end of the day sometimes you never know until you try it. Things that didn't work well I modified. I didn't like that we didn't give them a chance to actually write down and have a sharing experience for that outline or the Cornell.

Examples of learning from practice can also be found in the LS planning meetings, such as when Instructor E shared how she does not like teaching the mindmap activity, "That's why I make it an assignment . . . it was like torture to do mindmapping." However after observing the instruction of the mindmap activity in the research lesson, she began to understand that this activity was valuable and could be presented differently

and said in her reflective journal, “the best part was watching students work in groups and do the mindmaps. They seem very engaged and I like the activity” and shared in a LS planning meeting “when I taught the lesson (referring to note-taking lesson previous to LS) I didn’t do this part. I gotta get that out of my head.” In the LS debrief meeting, Instructor E also thought that the instructional strategy worked very well and suggested using this strategy for the Cornell notes “maybe even having them do this for that, as well, where they have to draw it and help each other. I just really felt like when they worked on it together they were way more engaged.” In the LS debrief meeting, she also stated, “I don’t connect with it but the students do. They seem to enjoy it.”

In the LS planning meetings both Instructor C and Instructor D were unsure about the effectiveness of a proposed attention getter introductory activity. Instructor C provided an alternative way of using the attention getter video and shared, “the only challenge with this is that we’re setting them up for failure almost. We’re giving them a video … that’s really hard to take notes off of . . . feels incongruent.” Instructor D shared “I keep on wrestling with, what’s the point of an icebreaker” and “I’m just pondering that question in my mind. I’m just thinking . . . does it get me excited to take notes? I don’t know.” The researcher explained that when teaching the research lessons, Instructor B could try the current way and Instructor C could try it the alternative way as well as shared, “then we’ll observe and say, what did you guys think? What worked the best as far as getting these students ready for what we’re gonna present?” After the observation and instruction of this attention getter activity in the first research lesson, Instructor C shared in the LS debrief meeting, “I thought that one went surprisingly as planned, just how you thought it was gonna go” and

> I thought it went so well that I'm second guessing myself, actually, because it just was the perfect lead in to the lesson when she said, "How did it go?" and they said, "Horrible." I was like, that really did work.

Instructor D shared in the LS debrief meeting, "Yeah, I was skeptical. I was skeptical" and, "I think it did exactly what it was supposed to do and was a nice intro and transition into what we were talking about. I think it worked pretty good."

Another example of learning from practice can be viewed in the LS planning meetings when Instructor E shared that she believed it would be important to separate the lecture discussion regarding the note-taking steps of before, during, and after when she stated "because their attention span – if we do before, during, after all at once, I think their eyes start to glaze over. Yeah, I think we should do it at the end [referring to end of session]." All LS members shared that they believed this was a good idea. However, after the instruction and observation of the research lesson, Instructor D shared the observation, "I'm not sure how to structure it. We can definitely talk about it, to me I just thought that they were done at the end of this," "It just wasn't time to bring them back," and "I just felt like all their bags were packed up on top of their desks." Instructor E shared "which we thought it was gonna be a good place, again this was all of us deciding it to be there . . . I think they – I felt like they had a little trouble focusing and kind of, they had so much fun with the activity and coming back." Instructor B stated, "I heard the zippers zipping" and "just trying to corral them, and they, yeah. I don't feel like – they were already gone." Instructor C said she felt that same way about the activity. The researcher than stated, "It's good because before we thought, well let's do this after slide at the very end. We thought it might work. We realized it didn't work that well. Now let's make that change for Instructor C." Instructor C then replied "right, make that change

now," and Instructor E then said that we could see how the change works in the next research lesson. Then all the LS members had a conversation that produced collaborative reflection and a new order and way of presenting the note-taking after step. At the end of the discussion, Instructor D and Instructor C both provided a summary of the new approach. Instructor C shared the new understanding of "No, I would probably do before, during, and then say during that we're gonna get to some of these note taking strategies in just a minute. Let's talk about after you're done." According to Lewis, Perry, Hurd, and O'Connell (2006) as well as Lewis, Perry, and Murata (2006), effective lesson study relies on instructors' discussion, thinking, and observation on how students think as well as testing their knowledge about student thinking and learning.

Assertion 5

Assertion 5 is: The Lesson Study experience seems to have a greater impact on less experienced instructors as well as instructors who are newer to the department. This assertion provides insights for answers to the primary research question.

Qualitative. The analysis of the reflective journals, semi-structured interviews, and LS debrief meetings qualitative results provided insights into the positive impact that Lesson Study had on all instructors, but this analysis also highlighted the importance of Lesson Study to the development of less experienced instructors and those more recent to the department.

Instructor A was the least experienced instructor only having taught one college success course prior to the study, and Instructor A was also the newest member to the Counseling Division only having worked one semester teaching part-time for the department. Instructor B also had never worked full-time for the Counseling Division, but

she had worked part-time as an instructor for six semesters and provided a few hours of counseling coverage during some of these semesters. Instructor E had one year of full-time experience teaching and counseling for the Counseling Division and two semesters of part-time teaching experience although she viewed herself as a newer instructor because Instructor E had been working in a managerial position full-time for many years prior to joining the Counseling Division. These were less experienced instructors and newer to the Counseling Division in comparison to Instructor C who was hired full-time at the start of the study and had ten semesters of teaching and working part-time in the Counseling Division as well as 131 more credit hours taught than the instructor with the second most amount of credits taught. Instructor D, although having taught a similar amount of credits in comparison to Instructors B and E, had been working for the Counseling Division in a temporary full-time position for two years and a half, and thus was more familiar with colleagues in the department and had worked more closely with seasoned counselors.

Lesson study was viewed as essential for adjunct instructors. The analysis of the reflective journals, semi-structured interviews, and LS debrief meetings qualitative results revealed that all instructors participating in Lesson Study viewed the Lesson Study experience as being very beneficial for part-time adjunct instructors. Instructors A, B, and E specified how beneficial Lesson Study was in assisting them to be better instructors as well as helping them to become more comfortable and acquainted with the role of teaching in the department. Instructor A, B, and E shared how Lesson Study helped them to learn and grow as instructor. Instructor A shared:

> I think it would be great for faculty and adjunct to collaborate together. I mean I've even talk to some faculty here about mentorship, but you wouldn't need mentorship if there was collaboration with the team as far as lesson planning. That would be the mentorship, which would help I think a lot for adjuncts.

Instructor B shared:

> I definitely think the adjuncts in particular should do it because, especially if they're a reoccurring adjunct and they've been there for a while. . . . Again, I feel like as an adjunct, if they just say, "Okay, here, show up on this day and start teaching." You're like, "Okay." You get the competencies. You get maybe someone's old syllabus. You get a book. You're like, "Go. Make a class." You're like, "I don't know what I'm doing."

Instructor C stated, "I know that's not related to this semester, but the first time I ever participated I was an adjunct. . . It helped me tremendously as an adjunct. Yeah. Maybe even more important," and Instructor D expressed how Lesson Study provides an opportunity for less experienced teachers to learn and also stated:

> I think that Lesson Study is a great asset for our adjuncts. I think adjuncts in general do not have time, will not spend the time creating effective lessons. . . . I think having something set will help the adjuncts and will help newer teachers, newer faculty people develop and become better teachers. I think it's a very huge aspect for the department.

Instructor E shared:

> I definitely think something like this should be done for new teachers, at least…Then just having more than one person—as faculty, you're just by your—on your own. I remember the first time I taught adjunct. They were just like, "Okay, teach this class. Here's the competencies." It's like okay. I even went to school to be a teacher, K through 12. I was overwhelmed. There's not a lot of guidance.

The two part-time temporary instructors shared that Lesson Study would have been invaluable when they began teaching part-time for the department. Instructor A shared, "I wish I would have been part of Lesson Study last year [first semester teaching]," and Instructor B stated, "Lesson Study would have been even more helpful as a new adjunct."

Lesson Study seemed to have provided much needed mentorship to newer and less experienced instructors. Lewis and Tsuchida (1999) highlight that Lesson Study connects teachers with each other in a manner that allows teachers to continue to consult and mentor each other outside of Lesson Study.

Adjuncts not participating in lesson study were using LS resources. Two instructors shared how Lesson Study was assisting adjuncts who were not participating in Lesson Study. Instructor B stated, "I know that we shared things with other adjuncts that were here. They were like, 'Oh, thank you. This is so helpful'", and Instructor E stated, "The adjuncts have been coming to me a lot asking for help. I say, 'Oh, we created this lesson.' They'll be like, 'Will you send it to me?' and I'll send it to them. They're just really thankful." In the researcher field notes, the researcher depicts sharing the LS note-taking lesson with two adjuncts who were really appreciative to be provided with the lesson and enjoyed facilitating the lesson. These two adjuncts became more aware of the lessons the group created through speaking to some of the LS members. In the researcher field notes, a residential faculty member who was not participating in Lesson Study said she found the lesson created through Lesson Study very beneficial to her hybrid college success classes.

The composition of the LS group matters. It appears that this Lesson Study experience was very valuable for adjuncts because the composition of the group included novice instructors as well as more experienced instructors. Four instructors specifically stated the importance of having a group composed of both experienced and novice instructors. Instructor B shared, "I think it's a really great benefit that you had both residential faculty on with adjuncts. . . I can see where having the support and

validation," Instructor C expressed the recommendation "have two or three faculty and one adjunct or two faculty and two adjuncts just balance it out," Instructor D shared "I think adjuncts should be included when possible," and Instructor E shared, "At least. Because when you have a group of colleagues—and then we were a good mixture of years of teaching, some veterans, some green people. I mean green meaning new. Sorry." In the qualitative data sources, Instructor A, the least experience instructor, expressed, "It is great to be able to learn from more seasoned instructors." All the instructors expressed that they learned through dialogue and observation, yet if the Lesson Study group was solely composed of more novice instructors, this learning may have not have been as substantial.

How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?

All the instructors viewed Lesson Study as a means for acculturating and assisting newer and less experienced instructors with their instructional practice. In addition, instructors viewed their teaching practice as a place where professional development is essential for newer instructors and less experienced instructors.

Assertion 6

Assertion 6 is: The Lesson Study experience produced positive changes in instructors' self-efficacy for teaching.

This assertion relates directly to the secondary research question:
How and to what extent will Lesson Study impact the self-efficacy of the college success course instructors?

Qualitative.

Increased efficacy for teaching. In the research literature, the practice of Lesson Study has been associated with increased teacher self-efficacy (Puchner & Taylor, 2006; Rock & Wilson, 2005; Sibbald, 2009). In their study, Puchner and Taylor (2006) revealed that teachers were amazed to experience student engagement and learning that they had not previously experienced as a result of their participation in Lesson Study and their in-depth examination of their teaching practice. Teachers perceived their desired teaching outcomes and impact on student learning to be in their control as well as within their reach. The qualitative study by Rock and Wilson (2005) revealed that participants experienced increased confidence in their instructional practices and roles as teachers.

From the analysis of the reflective journals, semi-structured interviews, and LS debrief meetings qualitative results, it appears that instructors gained an increased confidence in their teaching as a result of the Lesson Study experience, and this finding is consistent with previous studies. Most instructors viewed Lesson Study as an experience that facilitated an increased sense of efficacy for teaching in their instructional practice. All the instructors expressed that they were more confident in their teaching practice. Instructor A expressed, "I became more confident," Instructor B stated, "I know for me, as an adjunct, for being here—I mean, I've been here awhile. It was really helpful for me and just made me really a lot more confident as a teacher," Instructor D said, "Yes," when asked about increased confidence, and Instructor E stated, "I feel more confident in the classroom. I feel more comfortable in my skin. I feel better prepared." Instructor C had by far had the greatest amount of teaching experience in the LS group, and instructor

C did not state specifically that she gained more confidence as an instructor but she did express a transformation in her perception of her role as a professional instructor:

> Yeah, for sure. Almost like more of a professional teacher rather than an expert. I've worked here because I'm a subject matter expert. I know about counseling. I've got education in it and then communication also. That was my credential, that and wanting to serve.

In addition, two of the part-time instructors and the temporary full-time instructor all shared how being able to compare themselves to other instructors in the LS group allowed them to gain confidence in their teaching practice. Instructor A stated, "I felt like some of my ideas meshed with the other more seasoned instructors which gave me a bit more confidence in being a part of this group." Instructor B stated:

> I realized I was doing things that—you know, I look at my colleagues. I think that they're awesome. I would realize, "Oh, I'm doing things like them, too. Okay, maybe I'm not so bad. Maybe I'm awesome, too." . . . Rather than going, "Oh, I don't know what I'm doing. I'm just wingin' it here and just flying by the seat of my pants."

Instructor D also shared, "You never really—you get your feedback from your supervisor and stuff, but watching other people and be like, They're class is pretty similar to mine."

The least experienced instructor and an instructor who perceived herself as newer to teaching shared how they felt they grew as instructors this semester. Instructor A shared, "I mean and I've said this before on video and tape that me being a newbie coming in that I've—I feel like I've grown a lot this semester," and Instructor E stated, "It was the best thing I ever did. I just really felt like I grew a lot, especially as a new teacher."

Anxiety with teaching a research lesson. All LS instructors also depicted the anxiety and stress experienced when being observed during the teaching of a research

lesson in the reflective journals, semi-structured interviews, and LS debrief meetings. Previous research on Lesson Study has also identified the challenge of the stress and anxiety experienced by instructors who are teaching the research lessons (Chokshi & Fernandez, 2004; Fernandez, 2002; Stewart & Brendefur, 2005). Instructor A stated, "I'm sure I'll be nervous that day, but I'll suffer through it," Instructor B shared, "Presenting was scary," Instructor C shared, "I was like oh my gosh, I must be nervous," Instructor D stated, "it's a little nerve wracking when you're teaching cuz you're getting observed by your colleagues and you're nervous," and Instructor E shared, "I was so nervous and just terrified." In the reflective journals and semi-structured interviews, two instructors also depicted the anxiety of being observed when providing feedback and perspectives in LS meetings. Although the teaching of the research lesson was an anxiety provoking experience for the instructors, many instructors specifically mentioned they grew a lot from this experience. By mentioning that they grew from this stressful experience, it appears that instructors are indicating that they may have grown in confidence.

Quantitative. The analysis of the Teacher Sense of Efficacy scale provided some complementary but also some conflicting results in comparison to the qualitative findings. Instructor B had consistent findings since Instructor B had a higher post mean score in all three efficacy factors of student engagement, instructional strategies, and classroom management. Instructor C and E also had some consistent findings since they both had higher post mean scores for the efficacy factors of instructional strategies and classroom management. However, Instructor C had the same post mean score for student engagement, and Instructor E had a lower post mean score for student engagement. These findings regarding self-efficacy for engaging students were surprising since the theme

that was chosen by the LS group was engaging students in authentic learning. However, instructors B, C, and E all had in common a higher post mean score for the efficacy factor of instructional strategies which indicates that they had higher efficacy for teaching.

The findings for Instructor D at first appear not to be consistent with the qualitative results since Instructor D had the same post mean score for the efficacy factor of classroom management, and Instructor D had lower post mean scores for the efficacy factors of instructional strategies and student engagement. However these lower scores make some sense since Instructor D had much fewer comments regarding confidence in comparison to the counselors who were newer to teaching. Instructor D only expressed one comment relating to confidence that was found only in one qualitative data source at the questioning of an interviewer. It appears that Instructor D who had the most experience teaching the college success course may have already had high efficacy for teaching this course. Instructor A had lower post mean scores in all three efficacy factors of student engagement, instructional strategies, and classroom management. This was very surprising because Instructor A had many comments referring to increased confidence in her qualitative data. It could be the case that she over estimated her efficacy for teaching when completing the pre Teacher Sense of Efficacy Questionnaire since Instructor A expressed in all three qualitative data sources that she became more confident in her teaching practice. Moreover, all instructors had very high mean scores in their pre-assessment which made it less likely to observe increases in the post-assessment mean scores and even less likely to produce statistically significant changes. The following are each instructor's total average pre-assessment mean score for the three efficacy areas on the 1-9 point scale: Instructor A averaged an 8.0, Instructor B averaged

a 6.5, Instructor C averaged a 7.1, Instructor D averaged an 8.5, and Instructor E averaged 7.8. Instructors A and D who had lower post-assessment mean scores for the instructional strategies efficacy area had the highest total average pre-assessment mean scores for this efficacy area since Instructor A averaged an 8.8 and Instructor D averaged an 8.4.

How, and to what extent, do the college success course instructors teaching developmental education students make meaning of their teaching practice during Lesson Study cycles?

Instructors began to view Lesson Study as well as their teaching practice as a means for building confidence. Instructors attributed the experience of Lesson Study as positively impacting their efficacy for teaching. Instructor A shared, "I can't tell you how much this has helped me grow," Instructor B stated, "I found that it has been helpful in building confidence," and Instructor E expressed

> Especially as the new teacher just finishing a year as a residential, I feel like I've grown so much, Miguel, really. I really have. If I had to put it on a scale, I could honestly probably say I've grown 80% as a teacher in just this year. . . But with Lesson Study, I could honestly tell people, and I do, I've grown 80% as a teacher.

Instructor D shared how Lesson Study allowed him to compare himself to other instructors. Instructor C expressed how she saw herself more as a professional teacher versus a content expert as a result of Lesson Study. These comments seem to indicate that instructors began to view Lesson Study and their teaching practice as a means for developing their confidence as instructors.

Limitations

This research study was unique because it specifically focused on Lesson Study's influence on college instructors who were teaching developmental education students. Furthermore, the study was even more unique because the instructors teaching the college success course were all masters level trained counselors. The researcher did not discover any studies that focused on Lesson Study's impact on college instructors teaching a college success course, no less research studies specifically focused on counselors teaching developmental education students in a college success course. Although the uniqueness of the study contributes to the research literature on Lesson Study, this uniqueness also makes the results of the study less generalizable. We cannot assume that these results would be consistent with LS groups composed of college instructors from a different discipline teaching non-developmental education students although it is reassuring to discover that the results from this study and specifically how participants experienced Lesson Study seem to be consistent with previous studies.

Likewise, it is important to consider characteristics of the instructors who comprised the LS group such as their teaching experience, quality of teacher training, openness to change, and nature of relationships with each other which shaped the LS group. In this study the researcher served as the facilitator of the Lesson Study experience but was also a colleague of the participants, and this relationship could have impacted participants' openness to the experience. In addition, the LS group in this study was composed of instructors who were newer to teaching as well as instructors with a substantial amount of experience teaching. These unique characteristics of the participants which shaped the composition of the group could also make this study less

generalizable. However, even though the composition of this LS group may have been different from other LS groups, again the Lesson Study experience in this study demonstrated some very similar results to previous studies.

Moreover, this was more of an exploratory study which focused on understanding how instructors experienced Lesson Study as well as on exploring the impact that Lesson Study had on the instructors and their teaching practice. For this reason the study gave more emphasis and priority to qualitative methods and used quantitative methods to support the qualitative findings. In order to strengthen the association between Lesson Study and instructor development as well as student learning, studies with a more quantitative focus such as quasi-experimental studies may need to be conducted. According to Plano Clark and Creswell (2010), quasi-experimental designs are used when a researcher wants to determine whether a treatment causes the desired effect within an intact group of participants. This type of study may provide stronger evidence for cause-cause-effect relationship of Lesson Study and instructor development as well as student learning.

Threats to Validity

A possible threat to the validity of the study is the Hawthorne effect which is described as participants changing their behavior or performance as a result of being observed or being provided with more attention. This was a reality of the study since instructors were being video recorded in LS meetings and audio recorded during informational interviews as well as instructors and students were video recorded during the instruction of the four research lessons. However, the analysis of the student survey data provides evidence that minimizes this threat to validity. The two note-taking

research lesson sessions that were video recorded and observed by LS group members had very similar student survey results to the seven note-taking instructional sessions that were not video recorded or observed by LS group members. If the Hawthorne effect were to have a substantial impact on changing the behavior or performance of instructors in this study, one would expect that how students perceived the learning experience in the sessions that were not being observed to be much different to how students perceived the learning experience in the sessions being observed. In addition, one guiding principle of Lesson Study is that the lessons created through Lesson Study are collaboratively created by the group and their successes or failures are owned by the group. Furthermore, during observations of research lessons, LS members focused their attention on student behaviors and used an observation protocol to capture student behaviors. These principles and practices may have minimized the Hawthorne effect to internal validity.

Another possible threat to validity is the experimenter effect which is described as the influence of the experimenter's expectations on his or her results. The researcher employed the necessary steps to have outsiders review the data collection tools that were used in the study as well as have outsiders participate in observing and analyzing any data that was collected in order to minimize the experimenter effect. The researcher created data collection procedures that were very thorough as well as procedures that attempted to remove him from the collection of the data. All Lesson Study meetings and semi-structured interviews were video recorded and then transcribed by an outside agency. In addition, an outside research colleague facilitated the second semi-structured interviews. All student surveys were collected and brought to the researcher's department by designated students in the college success courses. All the student survey data was

inputted into an Excel spreadsheet by a colleague with no involvement in the study, and this colleague performed a quality check to verify that all raw data from the student surveys was accurately transferred to an Excel Spreadsheet. Moreover, the researcher received inter-rater reliability from doctorate level critical friends for all the qualitative results from the study. Although the researcher, like all researchers, desired favorable results, the researcher took meticulous and rigorous steps to ensure that the collection and analysis of the data was valid as well as reliable, and that the data truly directed the results.

The threat to validity of the novelty effect which is described as a change in performance or behavior as a result of experiencing something new such as the Lesson Study experience in the case of this study was also minimized as a result of the composition of the LS group. There were two instructors who had experienced three cycles of Lesson Study prior to the commencement of the study and another two instructors who had experienced one cycle of Lesson Study prior to the start of the study. Even though these instructors had prior experience with Lesson Study, they all demonstrated changes in their teaching practices during the study. In fact Instructor B who had one cycle of prior Lesson Study experience shared that she grew and learned much more from the two LS cycles in the study than from her prior Lesson Study experience. In addition, during the study there were also two cycles of Lesson Study that were each a duration of six weeks, and even though there was a substantial amount of time participating in the innovation, participants shared changes in teaching practices in both cycles.

Implications for Teacher Practice and Policy

As secondary and elementary education has experienced a more top down approach to professional development with prescribed training and evaluations, higher education institutions are also beginning to feel the pressures of top down accountability measures that prescribe specific experiences and teaching practices to instructors. Although some of these measures may be very beneficial and effective, when one considers the research on self-determination theory, a more productive approach may be to provide and facilitate opportunities for the practitioners to develop and improve their own practice. Instructors need to be provided with opportunities that allow instructors the freedom and autonomy to work together in perfecting their practice which would satisfy the psychological needs of autonomy, relatedness, and competence within the self-determination theory and according to the theory, produce high quality instructional development and performance. Moreover, according to Gergen's (2009) social constructionism theory, collaboration and social interaction are essential to the construction of knowledge, thus instructors must be provided with opportunities to collaboratively develop and improve their practice.

Many experts on educational reform and change also emphasize the importance of providing instructors with the autonomy to collaborate in improving their instructional practice. Darling-Hammond (2009) emphasizes that professional approaches to change that allow practitioners to collaborate together in making decisions for change as well as for devising strategies for improving teaching and learning are amongst the most effective for producing successful change. Darling-Hammond (2009) states, "teacher isolation must be overcome so that opportunities to study teaching and discuss problems

of practice can be frequent and regular," and teachers must be involved ",in decision-making about policies and practices, so that they can change curriculum, teaching, and school practices as they learn more about what is effective and what is not" (p. 64-65). Similarly, Fullan (2001) identifies the leadership capacity of knowledge building as essential for producing successful change and describes it as the leader's ability to create collaborative environments where people of diverse backgrounds can come together to share information and learn together as well as apply learning to their contexts. Fullan (2009) emphasizes that this indirect capacity building component of change enhances ownership and motivation as well as is the, "most powerful because educators are learning from their colleagues" (p. 283). Hargreaves (2009) highlights the point that sustainable educational change only happens when people work together as partners around a shared and compelling purpose and shares, "it builds powerful, responsible, and lively professional communities in a largely self-regulating profession where teachers set high standards and shared targets and improve by learning through networks from evidence and with each other" (p. 40). Hargreaves (2009) highlights that it is important for teachers to work together to set goals as well as develop and deliver curriculum in order to improve student success rather than outside forces directing this change.

The theories of self-determination and constructionism as well as experts on educational reform all accentuate that prescribed training and evaluations from outsiders may not be sufficient to produce enduring change and improvements in instructional practices and student achievement. Institutional resources and energies may be better served in supporting professional development experiences that elevate instructors' engagement in collaborative context focused learning about their teaching practice

resulting in an improved quality of learning for students and consequently an increased retention and achievement of students. Lesson Study is one such professional development experience that facilitates the necessary culture that allows instructors to experience high quality development, learning and performance. Lesson Study satisfies the psychological needs in the theory of self-determination that are associated with high quality development, performance, and motivation since this professional learning experience is teacher led (autonomy), collaborative (relatedness), and produces high quality lessons as well as instructional learning and effective changes in instructional practices (competence). In addition, Lesson Study is aligned with the theory of constructionism since it produces a substantial amount of collaborative reflection and dialogue about instructional practices. Lesson Study is also context focused as instructors collaboratively learn from their actual practice of teaching which seems to be very much aligned with the perspectives from experts on educational reform. Community colleges may want to consider investing in the Lesson Study professional learning experience in order to create a culture of teacher led continuous and sustainable instructional development that produces high quality learning experiences resulting in increased student achievement.

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APPENDIX A

TEACHERS' SENSE OF EFFICACY SCALE

The Teachers' Sense of Efficacy Scale Long form is available at http://people.ehe.osu.edu/ahoy/files/2009/02/tses.pdf

This instrument was used as a pre/post measure.

APPENDIX B

REFLECTIVE JOURNAL RESPONSE - INSTRUCTORS

Journal Response 1

1) How would you describe your current method of lesson planning and preparation for teaching? Please explain.
2) How would you describe your current teaching strategies and instructional practices? Please explain.
3) What are your thoughts and feelings about your instructional role? Please explain.

Journal Response 2

1) What are some things that you would like to improve in your teaching? What are some areas that you believe you would like to develop in your teaching practice? Please explain.
2) What are some of your strengths as an instructor? What are some areas that you believe you demonstrate strong proficiency as an instructor? Please explain.
3) Does your instructional approach resemble one of your previous instructors? Who do you admire as a high quality instructor and what about this instructor's teaching approach do you admire? Please explain.

Journal Responses 3-12

For the next reflective journals, think about it as a timeline of your experience with Lesson Study. Tell me about your thoughts and feelings this week in regards to Lesson Study. Provide me a play-by-play week overview of your experience. Tell me about positive as well as negative thoughts and feelings regarding your experience. The following are examples of information that you could include in journal:

- I learned a new teaching strategy of . . . in the LS meeting that I plan to try in my next class
- I felt frustrated that my colleagues did not agree with the strategy that I presented in the Lesson Study meeting.
- My colleagues' discussion about this particular instructional activity really made me think about . . .
- I thought about one of the ideas presented during the meeting while I was driving to work, and I believe by changing the instructional activity in this way . . . it may assist students to more effectively learn the material.
- I had a conversation with my colleague during lunch regarding another topic that I would like to cover in lesson study.
- I was anxious and worried about the group being able to complete the lesson in time.

- I am a little nervous about being observed because I am not comfortable with one of the instructional activities chosen for the lesson.
- One of my colleagues really frustrated me because s/he did not seem to listen to my reasoning for presenting the lesson in this particular manner.
- I felt really excited today about discussing the lesson in our meeting, or I felt really drained today in the lesson study meeting because …
- While watching TV I started thinking about what was discussed in the LS meeting…

Guiding Questions:

1) Did you do anything different in your lesson planning or instruction this week as a result of participating in previous Lesson Study activities? Please explain.
2) What were your thoughts and feelings regarding your lesson planning and instructional practice this week as a result of participating in previous Lesson Study activities? Please explain.
3) What are your thoughts and feelings about Lesson Study this week (think about it as a timeline of your experience)? Please explain.

Journal Response 13

First Part:

1) Compare your previous note-taking and diversity lessons to the lessons that were created in our Lesson Study Professional Development Group. How were they different or similar? Please explain.
2) Please describe the note-taking and diversity lessons that you taught in your SCS100 classes this semester. Did you use the same note-taking and diversity lessons that were created in the Lesson Study Professional Development Group or a modified version of the lessons? What worked well and what did not work well? What did you learn from your attempts to teach these note-taking and diversity lessons? Please make sure to provide me with the class meeting days (Example SCS100 MW 9am) for each of the lessons that you discuss in this section.

Second Part:

3) Reflect on your overall experience this semester with the Lesson Study Professional Development Practice. Please explain.
4) Did the Lesson Study experience impact in any way your thoughts, feelings, and behaviors in regards to your teaching practice (approach to lesson planning, approach to instruction, approach to the evaluation of the lesson,

reflection on your instructional practice, relationship with colleagues, collaboration with colleagues, work with students, your perception of your role as an instructor, etc.)? Please explain.

APPENDIX C

STUDENT SURVEY – RESEARCH LESSON

Student Survey – Research Lesson

Name: _____ **Today's Class Topic(s): _____**

Date: _____

Your thoughtful answers to these questions will provide helpful information for instructors teaching the SCS100 Strategies for College Success course.

Describe your attitudes and behaviors in this class by circling one of the following responses from 1-10: (*1-Strongly Disagree, 3- Disagree, 5- Somewhat Disagree, 6-Somewhat Agree, 8-Agree, 10-Strongly Agree)*

1. Today's lesson engaged me.

1 Strongly Disagree	2	3	4	5	6	7	8	9	10 Strongly Agree

2. Today's lesson engaged me more than previous lessons in this class.

1 Strongly Disagree	2	3	4	5	6	7	8	9	10 Strongly Agree

Please explain your rating:

3. I found today's topic interesting.

1 Strongly Disagree	2	3	4	5	6	7	8	9	10 Strongly Agree

4. I found today's topic more interesting than previous topics in this class.

1 Strongly Disagree	2	3	4	5	6	7	8	9	10 Strongly Agree

Please explain your rating:

Evaluate the quality of today's SCS100 class learning experience by circling one of the following responses from 1-10: (*-5 Much Worse, -3 Worse, -1 Somewhat Worse, 0 About the Same, +1 Somewhat Better, +3 Better, +5 Much Better)*

5. How would you rate the quality of today's SCS100 class learning experience in comparison to most lessons in previous SCS100 classes?

-5 Much Worse	-4	-3	-2	-1	0 About the Same	+1	+2	+3	+4	+5 Much Better

Please explain your rating:

6. Identify 1-4 aspects of today's class learning experience that were most beneficial to your learning:

1. 2. 3. 4.

7. Provide 1-4 suggestions for improving this lesson:

1.
2.
3.
4.

APPENDIX D

SEMI-STRUCTURED INTERVIEW (FIRST) - INSTRUCTORS

I greatly appreciate you taking the time to allow me to ask you some questions regarding your experience with Lesson Study. As the researcher, I want to make sure that you are aware that this interview is voluntary and that you can stop the interview at any time. You could also choose not to answer questions. I want your absolute honest opinion and perspective.

1) How would you describe the Lesson Study experience to someone?
   (a) Please complete the following sentence: Lesson Study is like _____ because _____.
   (b) What metaphor would you use to describe our current Lesson Study group?

2) What advice would you give to someone new to Lesson Study?

3) How is Lesson Study going? What does the Lesson Study experience do for you? What do you think about Lesson Study and how do you feel about it? Do you look forward to Lesson Study?
   (a) Tell me about a great experience or moment with Lesson Study as well as a challenging or difficult moment or experience. What do you see as any benefits and challenges associated with Lesson Study?

4) Tell me about your teaching. What are you doing? What do you do before you teach? Walk me through your preparation for teaching. (Take me through your process of preparing to teach.) What things do you do in the classroom? What do you do after you teach a class?
   (a) Has Lesson Study impacted your teaching practice? If so, please describe specifically how Lesson Study has impacted your teaching practice? OR Has your teaching practice changed as a result of participating in Lesson Study? If so, please describe specifically how your teaching practice has changed in regards to your thoughts, feelings and actions as an instructor?

5) Describe your experience with your colleagues this semester. What have you learned about your colleagues? What did you learn about their personalities?
   (a) How would you describe your relationship with your colleagues participating in Lesson Study before beginning the Lesson Study cycle versus after completing a Lesson Study cycle?

6) How would students and colleagues describe you as a teacher?
   (a) Would they describe you any differently if they were using your teaching approach and activities developed in Lesson Study when compared to previous approaches and activities that you created and taught without Lesson Study?
   (b) Do you see yourself any differently in regards to your role as an instructor as a result of the Lesson Study experience?

APPENDIX E

SEMI-STRUCTURED INTERVIEW (SECOND) - INSTRUCTORS

My name is _____ and I am a student in the ASU Doctorate of Education program as well as a community college instructor. The reason I am conducting this interview is because I am very interested in Lesson Study, and I am considering implementing Lesson Study at my college. I greatly appreciate you taking the time to allow me to ask you some questions regarding your experience with Lesson Study.

I want to make sure that you are aware that this interview is voluntary and that you can stop the interview at any time. You could also choose not to answer questions or provide partial answers. I want your absolute honest opinion and perspective. I would like you to focus your discussion on your experience with Lesson Study this semester. Everything will be done to protect your anonymity and confidentiality within the confines of the study. You will be assigned a pseudonym to be used in place of your real name during the reporting of the information.

1) What makes Lesson Study different from other types of professional development that you have experienced?
2) What aspects of Lesson Study do you believe have the greatest impact on improving instruction? Please explain. *Give them a chance to answer and then provide the following prompts:*
   (a) Final Lesson
   (b) Opportunity to Share Ideas
   (c) Group In-depth Reflection/Discussion on the Lesson Design and Impact on Students
   (d) Focus on Understanding How Students Learn
3) Let's go through a Lesson Study Cycle. Tell me intimate details about your thoughts and feelings with each part of the Lesson Study process this semester. *Walk them through the process by providing them with the following prompts:*
   (a) Identifying Student Learning Goals and Focus for the Lesson
   (b) Devising the Lesson Plan/Activities
   (c) Teaching the Lesson
   (d) Observing and Gathering Evidence
   (e) Debriefing the Lesson and Revising the Lesson
4) How did the Lesson Study experience impact you and your teaching practice? *Give them a chance to answer and then provide the following prompts:*
   (a) Did you make any changes to your teaching practice? (Refer to Question #3 Prompts) Please explain.
   (b) Do you feel more confident as a teacher? Please explain.
   (c) Do you view what is necessary to be an effective teacher differently after experiencing Lesson Study? Please explain.

5) Do you plan to do anything differently going forward as a result of your experience with Lesson Study? If so, please explain.

6) What would you tell me to do or what advice would you give me if I was going to attempt to implement Lesson Study at my college? *Give them a chance to answer and then provide them with a follow up questions:*
   (a) How would you change Lesson Study in order to improve this professional development experience?
   (b) Would you recommend Lesson Study as a professional development approach for community college faculty? Please explain.

APPENDIX F

CODEBOOK – REFLECTIVE JOURNALS

01.Group Collaboration
01.COL-TEA.01 = Team
01.COL-CLL.02 = Collegiality

02.Emotions Lesson Study Experience
02.EMO-LEP.01 = Lesson Plan
02.EMO-LSM.02 = Lesson Study Meeting
02.EMO-LOA.03 = Lesson Study Outside Preparation Activity
02.EMO-INS.04 = Instruction

03.Collaborative Reflection
03.REF-DLG.01 = Dialogue
03.REF-PER.02 = Perspectives
03.REF-FEE.03 = Feedback

04.Student Focus/Cognitive Empathy
04.SFO-LEX.01 = Learning Experience

05.Benefits
05.BEN-GEN.01 = General
05.BEN-LES.02 – Lesson
05.BEN-INS.03 = Instruction

06.Change
06.CHA-INP.01 = Instructional Practice
    06.CHA-INP.01 > PRP = Preparation
    06.CHA-INP.01 > TEA = Teaching Approach
    06.CHA-INP.01 > SLG = Student Learning Goals
    06. CHA-INP.01 > EOI = Evaluation of Instruction
06.CHA-IST.02 = Insight
06.CHA-MOT.03 = Motivation/Future Goals
06.CHA-CNF.04 = Confidence

07.Learning from Practice
07.LFP = Learning from Practice

08.Challenge
08.CHL-GRC.01 = Group Consensus/Size
08.CHL-WKI.02 = Work Intensive/Stress
08.CHL-WKI.02 > LES = Lesson Study
08.CHL-WKI.02 > WRE = Work Environment
08.CHL-WKI.02 > DIS = Dissertation Study
08.CHL-TRL.03 = Teaching Research Lesson/Being Evaluated
08.CHL-GRD.04 = Group Dynamics
08.CHL-PRI.05 = Personal Issues

09.Recommendations
09.REC-LSI.01 = Lesson Study Innovation

10.Initial Thoughts on Teaching Practice
10.ITT-PTP.01 = Initial Personal Teaching Process
10.ITT-AOI.02 = Initial Areas of Improvement
10.ITT-AOS.03 = Initial Areas of Strength

APPENDIX G

CODEBOOK DESCRIPTIONS – REFLECTIVE JOURNALS

01.Group Collaboration
01.COL-TEA.01 = Team
01.COL-CLL.02 = Collegiality

Participants depicted collaboration as a group of faculty members coming together to accomplish a common goal of creating a quality learning experience for students. The researcher coded this depiction using the term "team" and an example of this code is "I'm proud of the accomplishments we have made as a group. I feel like everyone is on the same page and eager to see the lesson in action." The "team" code also represents each member contributing towards the betterment of each other such as is depicted by the participant's comment "I learned so much from them and really enjoyed collaborating with them" and "It is so great to be able to learn from other more seasoned instructors."

Participants also depicted collaboration as becoming more familiar and comfortable with each other as well as supporting each other. The researcher coded this depiction using the term "collegiality" and examples of this code are "I feel very supported by my colleagues. It was great how everyone was there to help and offer words of encouragement," "I also have enjoyed the camaraderie with my colleagues," and "Our relationships have improved overall."

02.Emotions Lesson Study Experience
02.EMO-LEP.01 = Lesson Plan
02.EMO-LSM.02 = Lesson Study Meeting
02.EMO-LOA.03 = Lesson Study Outside Preparation Activity
02.EMO-INS.04 = Instruction

Participants depicted their feelings regarding their experience with different facets of the Lesson Study process. The researcher coded this depiction using the term "lesson plan" to represent participants' comments concerning their feelings about the process of creating the lesson as well as the components of the lesson. Examples of this code are "but I like the creative challenge of improving a lesson," "I don't like the Intro or Ice Breaker…I don't really think that it's going to work. I would like to think of something different," and "I do think we're making great progress toward a good lesson."

The researcher also coded this depiction using the term "Lesson Study meeting" to represent participants' comments concerning their feelings about the Lesson Study meetings such as "I enjoyed our meeting today" and "I thoroughly enjoyed being in lesson study this semester."

The researcher also coded this depiction using the term "Lesson Study outside preparation" to represent participants' comments concerning their feelings about their outside preparation activities. Examples of these codes are "I got the Cornell and Outline notes done, whew!" and "After just having an opportunity to meet with Miguel and outline a tentative lesson, I'm feeling a lot better."

Finally, the researcher also coded this depiction using the term "instruction" to represent participants' comments concerning their feelings about the instruction of a lesson. Examples of this code are "Overall it was a good opportunity, albeit exhausting," and "I really liked that we included actual practice of each of the styles we chose to include in the lesson plan."

03.Collaborative Reflection
03.REF-DLG.01 = Dialogue
03.REF-PER.02 = Perspectives
03.REF-FEE.03 = Feedback

Participants depicted collaborative reflection as faculty members together communicating and reflecting about their teaching practice. The researcher coded this depiction using the term "dialogue" to represent the discussion and brainstorming that takes place through the process of communicating in lesson study. Examples of this code are "We had a lot of discussion regarding the activities and even the questions in the activities," and "I feel like the lessons went well and I like that we can debrief and talk about how we can do things differently if we want." There were also indications from some participants of compromise during discussions such as "I brought up the idea of allowing the students to do just Cornell or outline method as their primary demonstration to be followed up with a translation into mind mapping. I still think that's a great idea and will also save us time, however my colleagues seem to be pretty adamant about not doing that, so we'll have to figure out a way to streamline the process – probably start with outline format, have them translate to Cornell and then do a group activity with mind mapping. It will be good that way too." There were also indications from some participants of conflict during their discussions such as "I felt a little attacked, but did not really argue with anyone about it. I just stated my opinion that I thought that students should have something to take notes on during the lesson." This code represents the back and forth discussions that take place in lesson study.

The researcher also coded this depiction using the code "perspectives" to represent the new ideas that are shared and learned through the process of communicating in lesson study. An example of this code is "I have enjoyed hearing what others are doing, what worked/didn't work, etc."

In addition, the researcher also coded this depiction using the code "feedback" to represent the critiques and comments faculty members received in regards to their personal teaching practices. An example of this code is "I like getting feedback from different people."

04.Student Focus/Cognitive Empathy
04.SFO-LEX.01 = Learning Experience

Some participants depicted a focus or attention on the student's learning experience and attempting to empathize with the student's learning experience. The researcher coded this

depiction using the code "learning experience" to represent comments referring to an attempt to understand the student learning experience through the eyes of the students. This code represented comments such as "I really like them, but sometimes I wonder if students will accept and believe them. The reason being is that they are actors in the segments. One of the common things that I hear from some students is that discrimination doesn't happen anymore. I know these videos are already being utilized by some of the lesson study group in their classes. I really hope the students like the videos and use them as a learning opportunity," and "I think the first one will engage students and get them thinking about the importance of taking notes as well as cause them to evaluate how they take notes. The second video is short and to the point and is about a topic that most students need help with. I think they will like both of them." This code also depicts actions the instructor took to attempt to understand the students' perspectives regarding their learning experiences such as "I also asked my students what they thought and they had similar feedback."

05.Benefits
05.BEN-GEN.01 = General
05.BEN-LES.02 – Lesson
05.BEN-INS.03 = Instruction

Participants provided many comments referring to a perceived benefit of participating in lesson study. The researcher coded this depiction using the code "general" to represent comments that were general in nature referring to a positive aspect of the lesson study experience. Examples of this code are "Overall, this was a great experience," "As always I feel that the whole experience has been very helpful and inspiring," and "but overall I feel that lesson study is incredibly valuable for all involved."

The researcher also coded this depiction using the code "lesson" to represent comments referring to the benefits of a finalized lesson plan. Examples of this code are "I'm very happy to have this note taking lesson for future classes," "I think it was a much better lesson than what I previously had," and "I really feel like our lesson plan was great that we developed." This code also encompasses comments regarding the benefits of creating a lesson such as "I thought Lesson Study was a valuable way to create more meaningful lessons that engage students."

In addition the researcher also coded this depiction using the code "instruction" to represent comments referring to lesson study benefiting and improving instruction. Examples of this code are "I think that lesson study provides a great opportunity for the less experienced teachers to learn," "I'm feeling a little disappointed that Lesson Study is over. I believe Lesson Study helped me become a better teacher this past year and a half," "I'm grateful for the opportunity to evolve my teaching," and "It's rewarding to improve as a teacher." This code also encompasses comments regarding the participant's positive experience with teaching a research lesson such as "I have learned so much about myself as a teacher and how to teach from it. It has been an amazing experience!"

06.Change
06.CHA-INP.01 = Instructional Practice
    06.CHA-INP.01 > PRP = Preparation
    06.CHA-INP.01 > TEA = Teaching Approach
    06.CHA-INP.01 > SLG = Student Learning Goals
    06. CHA-INP.01 > EOI = Evaluation of Instruction
06.CHA-IST.02 = Insight
06.CHA-MOT.03 = Motivation/Future Goals
06.CHA-CNF.04 = Confidence

Participants also depicted a variety of changes that took place for them while participating in lesson study. One of the changes the researcher coded as "instructional practice" to represent the variety of changes that took place in the participants' daily behaviors in their role of instruction. The researcher identified four distinct sub-codes within the "instructional practice" code. The researcher used the sub-code "preparation" in order to represent any changes in instructional behavior regarding preparing to teach a lesson. This sub-code encompasses behaviors such as thinking about the lesson and participating in more planning activities. Examples of this sub-code are "Lesson study definitely impacted me in several ways. The way that I develop lessons is much more thorough now," "Because of lesson study I am trying to think of different ways to engage individuals when they come in for individual sessions," "As a result of lesson study I approach lesson planning much earlier," "I have noticed that since I became a part of this group, I am now actively taking notes when I watch t.v. I am actively thinking about clips, etc that I can use to teach lessons," and "I have a lot of my lessons already prepared. I do find myself thinking more about my lessons and how to improve them." The researcher also used the sub-code "teaching approach" in order to represent any change in instructional behavior regarding the teaching of lessons. Examples of this sub-code are "As part of being a part of the lesson study, another improvement I have made in my teaching style is to not have the students be in the same group every class period," "I changed other lectures this week because of the lesson study that we are creating. I modeled my Reading and Memory lecture off of the lesson study to make it more engaging," and "I have decided to try to slow down and give students more time to share. This is a result of being part of the lesson plan study!" The researcher also used the sub-code "student learning goals" to represent any change in some of the instructors' approach of focusing on student learning goals or outcomes. An example of this sub-code is "I think I will always approach lesson planning differently as a result of lesson study. I always ask myself: What is the objective and how am I engaging students?" The final sub-code use by the researcher is "evaluation of instruction" which represents changes in instructional behavior regarding the evaluation of the teaching and learning experience. An example of this sub-code is "I believe I am a better observer of student behavior as a result of observing students in other teachers' classrooms using protocols prescribing what behaviors to observe and monitor. I am constantly noticing students' behavior even more and I am able to make sound judgments on whether students are bored or engaged with a lesson."

The researcher also depicted change with the code "insight" which represented new insight that instructors experienced as a result of participating in lesson study. Examples of this code are "This semester lesson study has taught me a lot but one thing I have really noticed is how current everything needs to be for our students. Information that is only 2-5 years old is not current enough for the sometimes," and "I also have noticed that it is better to have too much planned than too little because you can always cut stuff out, but it's not always easy to add to a lesson on the fly," "I have learned that true lesson preparation should be done weeks in advance, not days in advance. If I want to produce a quality lesson I must put the time into research and creativity," and "I realized this week that I move too fast on topics when teaching."

The researcher also depicted change with the code "motivation/future plans" to represent any positive change in inspiration or motivation that the instructor experienced. Examples of this code are "Being part of the lesson study group as I have previously touched on has inspired me to be more creative," "I would like to review every lesson utilizing the lesson study model and have them available in our group drive as a faculty and adjunct resource. Ultimately we might be able to create our own workbook from these lessons rather than purchasing text books," "being in lesson study has been very inspirational and has made me be more creative in my classes," and "I plan on doing this activity when I teach it on Wednesday (Referring to Memap)."

Finally the researcher also depicted change with the code "confidence" to represent any positive change in the level of confidence for the participants. Examples of this code are "I find that it has been helpful in building confidence," "I felt like some of my ideas meshed with the other more seasoned instructors which gave me a bit more confidence in being a part of this group," and "I feel more confident in my lesson planning and instruction compared to last year."

07.Learning from Practice/Context Focused
07.LFP = Learning from Practice

Participants also depicted learning that took place through their observation and teaching of a lesson. The researcher coded this depiction using the code "learning from practice/context focused" to represent the learning that took place through the application of their teaching practice within their work environment. Examples of this code are "What I am hoping students gain out of the diversity lecture is awareness. I am interested to see what happens with our diversity lesson study because it is more involved than I typically go in my class," "I thought the lecture and PPT were informative and had just the right information. The students were fascinated with the *World Clock website*. They were very shocked at the births and the deaths that happen all around the world. The *What Would You Do* videos seemed engaging to the students as well," "Well, I was able to observe the lesson plan over the past week. I thought the lesson plan worked even better than I was expecting. The majority of the students seemed to be very engaged throughout the entire class. I have only taught one class last year on note taking and this seemed to be much more engaging," and "I was glad to see that the breakfast club section

of the lesson went well. There was some discussion that students would not be able to relate to this. The students were pretty active regarding the video and seemed to be able to relate to it. One of the students even brought up a different *what would you do* video and we watched that. I was happy to see that level of involvement."

08.Challenge
08.CHL-GRC.01 = Group Consensus/Size
08.CHL-WKI.02 = Work Intensive/Stress
08.CHL-WKI.02 > LES = Lesson Study
08.CHL-WKI.02 > WRE = Work Environment
08.CHL-WKI.02 > DIS = Dissertation Study
08.CHL-TRL.03 = Teaching Research Lesson/Being Evaluated
08.CHL-GRD.04 = Group Dynamics
08.CHL-PRI.05 = Personal Issues

Participants also depicted a variety of challenges that took place for them while participating in lesson study. The researcher coded this depiction using the term "group consensus/size" to represent comments from some participants referring to challenges with the size of the lesson study group and difficulties with coming to consensus on decisions. Examples of this code are "There are times that I feel frustrated with lesson study . . The hardest part is when you think you have come up with something really good and bring it to the group and they don't like it. The size of the group seems to always allow someone to disagree" and "limit the groups to 3 or 4 members because it can take a long time to come to a consensus if there are too many people."

The researcher also coded this depiction of challenges using the code "work intensive/stress" to represent the amount of work and stress experience by the participants in lesson study. Three distinct sub-codes were identified that encompassed the "work intensive/stress" codes. One of the sub-codes used by the researcher was "lesson study" in order to represent the stress experienced by some participants as a result of the amount of work involved in lesson study. An example of this sub-code is "I am feeling a little lost on what I should be doing and exhausted in general. I think If I were to do lesson study again I would only be able to commit to one round within the semester. I am finding this, in addition to all of the other things I am doing, is getting to be too much to manage." Another sub-code used by the researcher is "work environment" in order to represent the amount of work and stress experienced as a result of the work environment. Examples of this sub-code are "Today I'm feeling a little overwhelmed, as I'm sure every teacher is feeling. Papers that need to be graded are piling up, as are various other end-of- the-semester tasks" and "I was anxious and worried about getting the Cornell and Outline notes done for the lesson. Sometimes I find it difficult to get the research or assignments done because my schedule is full." The final sub-code used by the researcher is "dissertation study" in order to represent the amount of work and stress experience as a result of needing to complete dissertation research related activities. An example of this sub-code is "My only thoughts this week are that it's been a little tough finding time to give out the surveys. I wasn't able to do them in the Mon/Wed. class, as I forgot on

Monday and Library came on Wed. I'm hoping to have time today (Thurs) – will make time, but am a little concerned about forgetting."

The researcher also coded this depiction of challenges using the code "teaching research lesson/being evaluated" to represent participants' discomfort with being observed and evaluated. Some participants referred to the discomfort felt as a result of being observed during the teaching of a research lesson. Examples of this code are "Right now I'm feeling anxious about doing another lecture. And a little overwhelmed. I'm hoping we can see if anyone else wants to do the second one" and "Presenting was scary!"

In addition, the researcher also coded this depiction of challenges using the code "group dynamics" to represent the different personalities within a group that at times conflict with each other. An example of this code is "I sometimes get frustrated with how nice we are to each other. I think sometimes we need to be more critical to get the best to our students."

Finally, the researcher also coded this depiction of challenges using the code "personal issues" to represent the challenges one participant was experiencing as a result of personal issues outside of work. An example of this code is "I missed Instructor C's instruction this week. I had an emergency with my Mother. Luckily I was able to watch her video though."

09.Recommendations
09.REC-LSI.01 = Lesson Study Innovation

Participants shared recommendations for improving the lesson study experience. The researcher used the code "lesson study innovation" to represent participants' comments regarding improving the lesson study experience. An example of this code is "However, in terms of efficiency, I think we might want to limit the groups to 3 or 4 members." Two participants provided the recommendation that adjuncts would benefit from the Lesson Study experience. Examples of this depiction are "Lesson study would have been even more helpful as a new adjunct" and "I think adjuncts should be included when possible."

10.Initial Thoughts on Teaching Practice
10.ITT-PTP.01 = Initial Personal Teaching Process
10.ITT-AOI.02 = Initial Areas of Improvement
10.ITT-AOS.03 = Initial Areas of Strength

One of the reflective journal prompts allowed participants to describe their personal teaching process as well as their strengths as instructors and areas of improvement. The researcher coded this depiction using the term "initial personal teaching process" to represent participants' comments describing their personal teaching process such as "I review the topic and text and then organize the content in terms of lecture and activities. I

typically show a PowerPoint or Prezi with the content and do an activity such as a worksheet, group work or class discussion."

The researcher also coded this depiction using the term "initial areas of improvement" to represent participants' comments regarding areas that they believed they wanted to improve in their instructional practice. An example of this code is "I would like to improve my overall lesson plan. I like having a structured lesson plan. My classes are much more organized and I feel the students like when each class is structured and makes sense. Having a good flow and well thought out lesson is very beneficial to the students."

The researcher also coded the depiction using the term "initial areas of strength" to represent participants' comments regarding their strengths as instructors. An example of this code is "I think I am pretty knowledgeable about the topics. I intertwine personal stories to the material to make it more relevant. I utilize activities and videos to tap into different learning styles." Many instructors described their strength in connecting with students as seen by comments such as "My primary strength is connecting with the students and teaching principles of life that help the students make sense of the world" and "I think I am pretty good at connecting with students (per their report) and helping them build their confidence in their abilities. I don't know if I would say I have a "strong proficiency" in a particular area but I do get feedback that students feel like I care and I do think that makes a difference in their success, especially since CPD is often one of the first classes they are taking."

APPENDIX H

CODEBOOK – SEMI-STRUCTURED INTERVIEWS

01.Group Collaboration
01.COL-TEA.01 = Team
01.COL-CLL.02 = Collegiality

02.Structure
02.STR-PRO.01 = Lesson Study Process
02.STR-LEP.02 = Lesson Plan
02.STR-PTP.02 = Personal Teaching Process/Style

03.Collaborative Reflection
03.REF-DLG.01 = Dialogue
03.REF-PER.02 = Perspectives
03.REF-FEE.03 = Feedback

04.Student Focus/Cognitive Empathy
04.SFO-LST.01 = Learning Styles
04.SFO-DSD.02 = Different Student Class Dynamics
04.SFO-LEX.03 = Learning Experience

05.Benefits
05.BEN-GEN.01 = General
05.BEN-LES.02 - Lesson
05.BEN-INS.03 = Instruction

06.Change
06.CHA-INP.01 = Instructional Practice
    06.CHA-INP.01 > PRP = Preparation
    06.CHA-INP.01 > TEA = Teaching Approach
    06.CHA-INP.01 > SLG = Student Learning Goals
    06. CHA-INP.01 > EOI = Evaluation of Instruction
06.CHA-IST.02 = Insight
06.CHA-MOT.03 = Motivation/Future Goals
06.CHA-CNF.04 = Confidence

07.Learning from Practice/Context Focused
07.LFP = Learning from Practice in Context

08.Challenge
08.CHL-GRC.01 = Group Consensus/Size
08.CHL-WKI.02 = Work Intensive/Stress
08.CHL-WKI.02 > LES = Lesson Study
08.CHL-WKI.02 > WRE = Work Environment
08.CHL-WKI.02 > DIS = Dissertation Study
08.CHL-BEL.03 = Belonging as Equal
08.CHL-SLO.04 = Student Learning Outcomes

08.CHL-TRL.05 = Teaching Research Lesson/Being Evaluated
08.CHL-GRD.06 = Group Dynamics

09.Recommendations
09.REC-LSI.01 = Lesson Study Innovation
09.REC-NWM.02 = New Member

APPENDIX I

CODEBOOK DESCRIPTIONS – SEMI-STRUCTURED INTERVIEWS

01.Group Collaboration
01.COL-TEA.01 = Team
01.COL-CLL.02 = Collegiality

Participants depicted collaboration as a group of faculty members coming together to accomplish a common goal of creating a quality learning experience for students. The researcher coded this depiction using the term "team" and an example of this code is "collaborating with colleagues and coming up with good lesson plans." The "team" code also represents each member contributing towards the betterment of each other such as is depicted by the participant's comment "you're not just growing by yourself, but you're growing with a team.

Participants also depicted collaboration as becoming more familiar and comfortable with each other as well as offering support and encouragement. The researcher coded this depiction using the term "collegiality" and examples of this code are "I definitely think there's a growth in the relationships with the group members for sure," "It definitely allowed us to get to know each other a little bit better too," and "I felt like everybody was so awesome and encouraging and supportive." The "collegiality" code also represents members understanding each other's strengths and being comfortable referring students to each other such as is depicted by the comment "I really feel I'm part of a team, and that was huge for me because when I'm working with a student that is really, really struggling with career stuff, I could say, you know what, I want you to work with this counselor."

02.Structure
02.STR-PRO.01 = Lesson Study Process
02.STR-LEP.02 = Lesson Plan
02.STR-PTP.03 = Personal Teaching Process/Style

Some participants depicted an organized structure within the lesson study process that included identifying a topic and goal for a lesson, planning the lesson, teaching and observing the lesson, and debriefing the lesson. The researcher coded this depiction of an organized process using the term "lesson study process," and an example of this code is "For me, it's been – well, first of all the structure of it. It has a pretty inherent structure."

Some participants viewed the research lesson as detailed and organized. The researcher coded this depiction of a detailed and organized lesson using the term "lesson plan," and an example of this code is "Well, I think the lesson plan itself—the fact that we get really detailed."

Participants also depicted their individual approaches to teaching which included their preparation, instruction and evaluation. The researcher coded this depiction of each instructor's individual teaching practice using the term "personal teaching process/style," and an example of this code is "So you asked me about my process my process is the day before if not sooner, go through the PowerPoint, tweak it put in different activities,

probably research I do a lot of research on what kind of activities. I'm always trying to figure out some random game I can play with them in there, . . ." This code also encompasses the instructor's personal teaching styles and teaching philosophies, and an example of this code is "I think they would describe me as positive, I've heard that word, and genuine and sometimes inspiring.."

03.Collaborative Reflection
03.REF-DLG.01 = Dialogue
03.REF-PER.02 = Perspectives
03.REF-FEE.03 = Feedback

Participants depicted collaborative reflection as faculty members together communicating and reflecting about their teaching practice. The researcher coded this depiction using the term "dialogue" to represent the discussion and brainstorming that takes place through the process of communicating in lesson study. Examples of this code are "the in-depth reflection, discussion on the lesson design, impact on students," and "I think it's just that brainstorming and building off each other." This code represents the back and forth discussions that take place in lesson study.

The researcher also coded this depiction using the code "perspectives" to represent the new ideas that are shared and learned through the process of communicating in lesson study. An example of this code is "and you get ideas that you never have thought of yourself."

In addition, the researcher also coded this depiction using the code "feedback" to represent the critiques and comments faculty members received in regards to their personal teaching practices. An example of this code is "even when you do teach, I didn't teach this semester, but I think you get the feedback; that gets very constructive and good."

04.Student Focus/Cognitive Empathy
04.SFO-LST.01 = Learning Styles
04.SFO-DSD.02 = Different Student Class Dynamics
04.SFO-LEX.03 = Learning Experience

Some participants depicted a focus or attention on the student's learning experience and attempting to empathize with the student's learning experience. The researcher coded this depiction using the code "learning styles" to represent comments referring to students' individualized learning styles. An example of this code is "Well, just that we're really careful about bringing in all different types of learning styles."

The researcher also coded this depiction using the code "different student class dynamics" to represent comments referring to how each class has a very different dynamic that can impact the learning experience. Examples of this code are "Well, yeah.

I mean I think it depends of the class." and "Cause my three classes were so different than my class last year. It matters what classroom you're in."

In addition, the researcher coded this depiction using the code "learning experience" to represent comments referring to an attempt to understand the student learning experience through the eyes of the students. This code represented comments regarding engaging students such as "They are less engaged. They have trouble being involved. They have trouble participating, speaking their opinion, . . ." and also represents comments referring to the students experience with college such as "and a lot of them are scared, a lot of them don't think they can make it to begin with, a lot of them are worried and they have different emotions so I feel that I can put their minds at ease and make them have some fun."

05.Benefits
05.BEN-GEN.01 = General
05.BEN-LES.02 = Lesson
05.BEN-INS.03 = Instruction

Participants provided many comments referring to a perceived benefit of participating in lesson study. The researcher coded this depiction using the code "General" to represent comments that were general in nature referring to a positive aspect of the lesson study experience. Examples of this code are "I think lesson study has been amazing," and "just pure lesson study is powerful".

The researcher also coded this depiction using the code "Lesson" to represent comments referring to the benefits of a finalized lesson plan. Examples of this code are "I will be using these lessons for years," and "I thought the notes lesson really turned out awesome." This code also encompasses comments regarding the benefits of creating a lesson such as "and I love the lesson creation".

In addition the researcher also coded this depiction using the code "Instruction" to represent comments referring to lesson study benefiting and improving instruction. Examples of this code are "but I feel like it has been super educational and it has taught me a lot about myself as a teacher," and "I think it's a great thing, and I think all teachers should be doing it."

06.Change
06.CHA-INP.01 = Instructional Practice
    06.CHA-INP.01 > PRP = Preparation
    06.CHA-INP.01 > TEA = Teaching Approach
    06.CHA-INP.01 > SLG = Student Learning Goals
    06. CHA-INP.01 > EOI = Evaluation of Instruction
06.CHA-IST.02 = Insight
06.CHA-MOT.03 = Motivation/Future Goals
06.CHA-CNF.04 = Confidence

Participants also depicted a variety of changes that took place for them while participating in lesson study. One of the changes the researcher coded as "instructional practice" to represent the variety of changes that took place in the participants' daily behaviors in their role of instruction. The researcher identified four distinct sub-codes within the "instructional practice" code. The researcher used the sub-code "preparation" in order to represent any changes in instructional behavior regarding preparing to teach a lesson. This sub-code encompasses behaviors such as thinking about the lesson and participating in more planning activities. Examples of this sub-code are "just doing more lesson planning in general" and "I think it makes me think about it all the time". The researcher also used the sub-code "teaching approach" in order to represent any change in instructional behavior regarding the teaching of lessons. Examples of this sub-code are "I know I have built off of things that I've learned when we've met that I've implemented into my lesson study this year versus last year," and "before I wasn't putting as much into my lessons in terms of activities." The researcher also used the sub-code "student learning goals" to represent any change in the instructors' approach of focusing on student learning goals or outcomes. An example of this sub-code is "You have to really think, What is my objective? Then how am I gonna get that across." The final sub-code use by the researcher is "evaluation of instruction" which represents changes in instructional behavior regarding the evaluation of the teaching and learning experience. An example of this sub-code is "the next one, focus on understanding how students learn, that was really, really – that was a big thing that was really cool for me."

The researcher also depicted change with the code "insight" which represented new insight that instructors experienced as a result of participating in lesson study. Examples of this code are "it definitely made more cognizant of, first of all, spending more time on lesson planning," and "meeting with them and doing lesson plan, I found out I could go outside the book which I didn't realize."

The researcher also depicted change with the code "motivation/future plans" to represent any positive change in inspiration or motivation that the instructor experienced. Examples of this code are "what sparked my creativity," and "It makes me strive to create better learning opportunities for students whether that be in the classroom or on the campus or different ways for them to learn." This code also encompasses comments regarding continuing Lesson Study in the future such as "I'm hoping that we continue. Yeah. I'd like to do a lesson study for all of our lessons for college success and then have that available for us and the other faculty and adjuncts."

Finally the researcher also depicted change with the code "confidence" to represent any positive change in the level of confidence for the participants. Examples of this code are "I feel more confident in the classroom," and "I became more confident." This code also encompasses comments where instructors say they grew such as "I mean and I've said this before on video and tape that me being a newbie coming in that I've—I feel like I've grown a lot this semester."

07.Learning from Practice/Context Focused
07.LFP = Learning from Practice in Context

Participants also depicted learning that took place through their observation and teaching of a lesson. The researcher coded this depiction using the code "Learning from Practice/Context Focused" to represent the learning that took place through the application of their teaching practice within their work environment. Examples of this code are "While we're observing it and we can see if it works or doesn't work," and "Plus I was thinking that positive thinking might be too personal because they get into affirmations and transforming their own thoughts and that kind of think. What really ended up happening is diversity was very personal."

08.Challenge
08.CHL-GRC.01 = Group Consensus/Size
08.CHL-WKI.02 = Work Intensive/Stress
08.CHL-WKI.02 > LES = Lesson Study
08.CHL-WKI.02 > WRE = Work Environment
08.CHL-WKI.02 > DIS = Dissertation Study
08.CHL-BEL.03 = Belonging as Equal
08.CHL-SLO.04 = Student Learning Outcomes
08.CHL-TRL.05 = Teaching Research Lesson/Being Evaluated
08.CHL-GRD.06 = Group Dynamics

Participants also depicted a variety of challenges that took place for them while participating in lesson study. The researcher coded this depiction using the term "group consensus/size" to represent comments referring to challenges with the size of the lesson study group and difficulties with coming to consensus on decisions. Examples of this code are "sometimes I just felt like we were just in quicksand or mud where you just, you can't get anywhere, can't make a decision," and "maybe three to four people instead of six people because it just might be a little more efficient without having so many perspectives."

The researcher also coded this depiction of challenges using the code "work intensive/stress" to represent the amount of work and stress experience by the participants in lesson study. Three distinct sub-codes were identified that encompassed the "work intensive/stress" codes. One of the sub-codes used by the researcher was "lesson study" in order to represent the stress experienced as a result of the amount of work involved in lesson study. An example of this sub-code is "I would definitely make it a little smaller. Then this semester was really intensive because we did the two lessons." Another sub-code used by the researcher is "work environment" in order to represent the amount of work and stress experienced as a result of the work environment. An example of this sub-code is "especially because one of the things was being just overwhelmed and being too busy. Again, we're different, because we're service faculty, and that's not fair, because right when I would like, Okay, let me research those videos, and then they'd say, your appointment's here." The final sub-code used by the researcher is "dissertation study" in

order to represent the amount of work and stress experience as a result of needing to complete dissertation research related activities. An example of this sub-code is "because I think sometimes that was the hardest thing this semester, is that we had to do journal entries for him."

The researcher also coded this depiction of challenges using the code "belonging as equal" to represent one participant's comments regarding not feeling like an equal part of the lesson study group. An example of this code is "I wrote down that I didn't feel like part of the team."

The researcher also coded this depiction of challenges using the code "student learning outcomes" to represent one participant's comments regarding the difficulty of observing and measuring concretely students' learning. An example of this code is "it was a little bit more concrete, but the last one that we did on discrimination was a little bit more vague I want to say."

The researcher also coded this depiction of challenges using the code "teaching research lesson/being evaluated" to represent participants' discomfort with being observed and evaluated. Some participants referred to the discomfort felt as a result of being observed during the teaching of a research lesson. An example of this code is "on the other side of that, it's a little nerve wracking when you're teaching cuz you're getting observed by your colleagues and you're nervous." Some participants referred to the discomfort felt as a result of sharing during lesson study meetings such as when a participant shared "so I'm almost dreading when you come to me (referring to asking to share in LS meetings)."

Finally the researcher also coded this depiction of challenges using the code "group dynamics" to represent the different personalities within a group that at times conflict with each other. An example of this code is "I think getting the personalities a little bit in sync, getting the group in sync takes me and you need to account for it because it doesn't, like I said, that first lesson that we ever did just took forever." This code also encompasses phases of group dynamics such as found in the example "we did storming and norming."

<u>09.Recommendations</u>
09.REC-LSI.01 = Lesson Study Innovation
09.REC-NWM.02 = New Member

Participants shared recommendations for improving the lesson study experience. The researcher used the code "lesson study innovation" to represent participants' comments regarding improving the lesson study experience. An example of this code is "I would say that, and that everybody's committed to actually doing it."

Participants also shared recommendations for improving the experience of new members. The researcher used the code "new member" to represent participants' comments regarding bettering the experience for members who are new to lesson study. An example

of this code is “and I get to see K teach it before I do, which, as a newbie, is nice. That would be a good thing in the future to move forward with, I think.” This code also encompasses advice that should be provided to new members, such as “somebody who’s not experienced, I would say, don’t get offended at first if you feel like.”

APPENDIX J

CODEBOOK – LESSON STUDY DEBRIEF MEETINGS

01. Collegiality/Encouragement
01.CLL- PRA.01 = Praise
01.CLL- SUP.02 = Support
01.CLL- HUM.03 = Humor

02. Benefits
02.BEN-LES.01 = Lesson General
02.BEN-LAI.02 = Lesson Activity/Instruction
02.BEN-GAI.03 = Growth as Instructor

03. Student Focus/Cognitive Empathy
03.SFO-LEX.01 = Learning Experience

04. Challenges
04.CHL-TEC.01 = Technology
04.CHL-TRL.02 = Teaching Research Lesson/Being Evaluated
04.CHL-FLO.03 = Flow with Facilitation of Lesson
04.CHL-WKI.04 = Work Intense

05. Recommendations/Perspectives
05.REC-TEA.01 = Teaching Practice
05.REC-CRM.02 = Classroom Management
05.REC-LSI.03 = Lesson Study Innovation/Process

06. Evaluations/Feedback
06.EVA-PFT.01 = Positive Feedback on Teaching Practice
06.EVA-CTP.02 = Critique Teaching Practice
06.EVA-CID.03 = Critique Idea
06.EVA-DID.04 = Defend Idea

07. Change in Teaching Practice
07.CHA-NEP.01 = New Perspective/Accept Idea
07.CHA-TEA.02 = Teaching
07.CHA-MOT.03 = Motivation/Future Goals
07.CHA-CNF.04 = Confidence

08. Learning from Practice/Context Focused
08.LFP-IFP.01 = Insight from Practice

09. Structure
09.STR-LSP.01 = Lesson Study Process

APPENDIX K

CODEBOOK DESCRIPTIONS – LS DEBRIEF MEETINGS

01.Collegiality/Encouragement
01.CLL-PRA.01 = Praise
01.CLL-SUP.02 = Support
01.CLL-HUM.03 = Humor

Participants depicted collegiality as offering positive recognition and appreciation to each other. The researcher coded this depiction using the term "praise" and examples of this code are "You're such a good teacher," "Again, thanks a lot, Instructor B, for doing that. I know it's not an easy thing to do to have people watch," and "That was a great idea Instructor A."

Participants also depicted collegiality as offering support and encouragement. The researcher coded this depiction using the term "support" and examples of this code are "You guys are very encouraging. I'm super lucky," "I look forward to having Instructor C present," and "I don't think you were off, you were on."

Collegiality was also depicted through the humorous comments that participants said in Lesson Study meetings. The researcher coded this depiction using the term "humor" and examples of this code are "Instructor C: Yes. I have to go get a new outfit or something [referring to when she teaches the research lesson]". Instructor E: "There's an excuse. There you go" and "I keep thinking of little me, and I keeping getting, Austin Powers."

02. Structure
02.STR-LSP.01 = Lesson Study Process

Participants also depicted tasks performed during the Lesson Study Process. The researcher coded this depiction using the code "structure" to represent all the comments referring to tasks that were part of the process of Lesson Study such as "Do you just want me to write it in the email to you or?"

03. Evaluations/Feedback
03.EVA-PFT.01 = Positive Feedback on Teaching Practice
03.EVA-CTP.02 = Critique Teaching Practice
03.EVA-CID.03 = Critique Idea
03.EVA-DID.04 = Defend Idea

Participants shared specific positive feedback regarding the instructor's facilitation of the lesson. The researcher coded this depiction using the term "positive feedback on teaching practice" to represent instructors' perspectives and feedback regarding what the instructor did well in their facilitation of the lesson such as "I thought the way you demonstrated it was great," and "I feel you did a good job of making that activity part of the lesson because then you asked, What'd you think it means that diversity is the tip of the iceberg?"

Participants also shared their critiques and criticisms regarding the instructor's facilitation of the lesson. The researcher coded this depiction using the term "critique of teaching practice" to represent instructors' perspectives and feedback regarding what the instructor did not do well in their facilitation of the lesson. This code encompasses unbeneficial instructor actions as well as unbeneficial actions by students receiving the lesson such as "I would've used a bigger ball. That's the only thing I would say because they were chucking it at each other," "Yeah, I feel like I really dropped the ball in the learning style portion of the slides," and "I just noticed that there wasn't really many seats taking any notes. There was one girl with her notebook out, was it."

Some participants also share their critiques and criticisms regarding recommendations and ideas that were presented in Lesson Study. The researcher coded this depiction using the term "critique of idea" to represent instructors' perspectives and feedback regarding their negative appraisal of a recommendation or idea such as "Why wouldn't you collect 'em?" "How long would that take [referring to Insturctor E's rubric]" and "I think it's too leading if you do that."

04. Student Focus/Cognitive Empathy
04.SFO-LEX.01 = Learning Experience

Some participants depicted a focus and attention on the student's learning experience and attempting to empathize with the student's learning experience. The researcher coded this depiction using the code "learning experience" to represent comments referring to an attempt to understand the student learning experience through the eyes of the students. This code represented comments such as "I think it was they were afraid. I think us being there had a big, big impact on it," and "I think as soon as that comes up – I now for me personally, and I was looking back to school, college, especially. When I was typically the only person of color in class. When stuff like that came up, I'm gonna be honest, I clammed up." This code was also used to depict the change in student behavior as a result of being observed such as represented by the comment "I think well observers probably had something to do with it because it's kind of personal. Then the classroom probably had something to do with it. Maybe that standing up was a little too much exposure."

05. Benefits
05.BEN-LES.01 = Lesson General
05.BEN-LAI.02 = Lesson Activity/Instruction
05.BEN-GAI.03 = Growth as Instructor

The researcher coded this depiction using the code "lesson general" to represent comments referring to the benefits of a finalized lesson plan. Examples of this code are "No, I have to say I think we created a really good lesson. Instructor B: We did," "It was a really good lesson. I think we did a good job," and "It's something I will be using for years. I can tell you that already."

In addition the researcher also coded this depiction using the code "lesson activity/instruction" to represent comments referring to lesson study creating effective lesson activities that engaged students in learning as well as producing the effective facilitation of the activity. Examples of this code are "Instructor D: Well, the thing was that it was such a great activity. You could tell that everyone was doing it. Instructor B: Yeah, they really got into it," Yeah, I thought the mindmap went well too," and "I think it did exactly what it was supposed to do and was a nice intro and transition into what we were talking about. I think it worked pretty good."

The researcher also used the code "growth as instructor" to depict the growth that instructors experienced as a result of participating in Lesson Study meetings or teaching the research lesson as well as to represent comments referring to lesson study benefiting and improving instruction such as "I can't tell you how much this has helped me grow, and I think it has helped me improve my teaching . . ." and "It's a good experience, but then once it was over (referring to teaching the research lesson), I was like, wow, that helped me grow . . ."

06. Change in Teaching Practice
06.CHA-NEP.01 = New Perspective/Accept Idea
06.CHA-TEA.02 = Teaching
06.CHA-MOT.03 = Motivation/Future Goals
06.CHA-CNF.04 = Confidence

Participants also depicted a variety of changes that took place for them while participating in lesson study.

The researcher depicted change with the code "new perspective/accept idea" which represented participants accepting a new idea or recommendation. Examples of this code are "it just makes me realize that all the lessons need to be that interactive and that full," and "That's a really good point because it's an energy thing to have them do something right in the beginning. I had never thought about that."

The researcher also depicted the change with the code "teaching" to represent the variety of changes that took place in the participants' daily behaviors in their role of instruction. Examples of this code are "this is totally inspired by this semester and ever since we've created this one it's made me change everything (laughs) else," and "I probably was a little more deliberate. And maybe waited a little longer. Typically the same students talk and I move through it quicker. I wanted it to be more methodical for this one."

The researcher also depicted change with the code "motivation/future plans" to represent any positive change in inspiration or motivation that the instructor experienced as well as future plans that the instructor identified. Examples of this code are "So I actually like the template and I'm going to use it," and "I mean I'm going to try that again, to be more deliberate like that."

Finally the researcher also depicted change with the code "confidence" to represent any positive change in the level of confidence for the participants. Examples of this code are "And so it was just really neat to help boost a little confidence, too, I think" and "It's alright. We are facing fears."

07. Learning from Practice/Context Focused
07.LFP-IFP.01 = Insight from Practice

Participants also depicted learning that took place through their observation and teaching of a lesson. The researcher coded this depiction using the code "learning from practice/context Focused" to represent the learning that took place through the application of their teaching practice within their work environment. An examples of this code is "Yeah, I wish I would have like actually had a piece of paper in front of me because I actually just went up to the board and did one of these, like so then you can fold it over. And two of my students just couldn't understand it so I had to actually go to their group and like show them but I wish I would have had a visual aid like you did."

08. Challenges
08.CHL-TEC.01 = Technology
08.CHL-WKI.02 = Work Intense
08.CHL-TRL.03 = Teaching Research Lesson/Being Evaluated
08.CHL-FLO.04 = Flow with Facilitation of Lesson

Participants also depicted a variety of challenges that took place for them while participating in lesson study.

The researcher coded this depiction using the term "technology" to represent comments referring to difficulties with technology used in instruction such as "Oh yeah, we had technical difficulties," and "She goes, ooh, one of the videos wouldn't work."

The researcher also coded this depiction of challenges using the code "work intensive" to represent the amount of work experienced by the participants in lesson study. Instructors and students experienced some of the Lesson Study tasks as requiring a lot of work and time. Examples of this code are "I got such backlash from it, moaned and groaned every time [referring to students completing surveys]" and "I need a break. I need a break one semester."

The researcher also coded this depiction of challenge using the term "teaching research lesson/being evaluated" to represent comments referring to the anxiety and the discomfort experienced as a result of being observed by colleagues during the teaching of a research lesson such as "It's scary but then at the end, like for me, I was so nervous and just terrified," and "Instructor C: You facilitate because you're an archetypical leader. Instructor E: No problem, then I won't have to teach."

The researcher also coded this depiction of challenges using the term "flow with facilitation of lesson" to represent comments referring to some instructors not being familiar with the flow of the lesson as well as not having a sufficient amount of time to complete the lesson such as "My biggest challenge probably was just the flow of it just cuz I hadn't done it before. It wasn't rolling off the tongue as easy as other lectures."

09. Recommendations/Perspectives
09.REC-LSI.01 = Lesson Study Innovation/Process
09.REC-TEA.02 = Teaching Practice
09.REC-CRM.03 = Classroom Management

Participants also shared recommendations for improving the lesson study experience and lesson study process. The researcher used the code "lesson study innovation/process" to represent participants' comments regarding improving the lesson study experience such as "Kinda like more informative though than what we did this time [referring to assessing student learning]" and "Yeah, so in the spring. I like that idea instructor D, if we develop some lessons in the spring and then we don't teach until fall."

Participants shared many recommendations for improving their instructional practice. The researcher coded this depiction using the term "teaching practice" to represent instructors' perspectives and feedback regarding how to improve a lesson activity or instruction of an activity. Examples of this code are "If you have a class that isn't thinking forward or whatever you could put the prompts up there if you need to," and "Yeah, that first slide is a really good introduction to that because it has – you can talk about the ground rules, and then the next part is the tip of the iceberg. Diversity is the tip of the iceberg, so you can say . . ."

Some participants also shared recommendations for improving classroom management such as "Instructor D has a funny idea, he uses a pointer, the little red beam. When somebody gets on their phone you just . . ."

APPENDIX L

STUDENT SURVEY CODE DESCRIPTIONS/DIRECTIONS

ER = Evaluative Response

This code describes anytime a student makes a comparison between two things (referring to lessons within that particular class- across the class). This code is always used even though the comparison may pertain to the pedagogy, topic, or affect.

PR = Pedagogical Response

This code describes comments and references about teaching, the activities, the class, the lesson, student actions within an activity as well as specific things learned (must say learned, showed, etc.). If any of these items were identified by the student the comment was coded as a pedagogical response. If the student used the word "it" as a subject in a response to Question 2, the "it" was assumed to refer to the lesson since Question 2 asked about the lesson. If the student used the word "it" as a subject in a response to Question 5, the "it" was assumed to refer to the class learning experience in the lesson since Question 5 asked about the class learning experience in the lesson.

TR = Topical Response

This code describes comments and references about the topic. If the student used the word "it" as a subject in a response to Question 4, the "it" was assumed to refer to the topic since question 4 asked about the topic. Examples of this code would be ……

AR = Affective Response

This code describes comments and references about a student's feelings or emotions. This comment is used only when there is no other reference to the other three codes.

DIRECTIONS
All codes will be identified as positive, negative, or neutral. If there is no qualifier, the comment will be coded as neutral. If there is an affirmative qualifying word such as nice or great, the comment will be coded as positive. In addition, if the statement identifies a student activity the comment will be coded as positive since the Lesson Study group chose engagement as the theme for the lessons. If there is a negative qualifying word such as boring or bad, the comment will be coded as negative.

APPENDIX M

LESSON STUDY PLAN

Week of Fall 2013 Semester	Lesson Study Activity	Data Collection Tool
Week One (1.5 hours) 8/22/13	**LS Group Meeting Intro**: Introduce Lesson Study: History, Steps, Benefits and Challenges; Begin to Identify a Theme and Topics for Lesson Study;	1. *Video of Lesson Study Introduction and Planning Meeting* 2. Researcher Field Notes/Journal 3. Teacher's Sense of Self-Efficacy Scale Pre – (Appendix A)
Week Two (1.5 hours) 8/29/13	**LS Group Meeting**: Finalize Theme and Two Topics; Choose Days of Teaching and Observation; Decide on Student Learning Goals; Begin to create First Lesson Plan	1. *Video of Lesson Study Planning Meeting* 2. Reflective Journal (1st) Response from Counselors (Appendix B) & Researcher Field Notes/Journal
Week Three (1.5 hours) 9/5/13	**LS Group Meeting**: Create First Lesson Plan	1. *Video of Lesson Study Planning Meeting* 2. Reflective Journal (2nd) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (1st) on Lessons for the Week (Appendix C)
Week Four (1.5 hours) 9/12/13	**LS Group Meeting**: Create First Lesson Plan	1. *Video of Lesson Study Planning Meeting* 2. Researcher Field Notes/Journal 3. Student Survey (2nd) on Lessons for the Week (Appendix C)
Week Five (1.5 hours) 9/19/13	**LS Group Meeting**: Create First Lesson Plan	1. *Video of Lesson Study Planning Meeting* 2. Reflective Journal (3rd) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (3rd) on Lessons for the Week (Appendix C)
Week Six (1.5 hours) 9/26/13	**LS Group Meeting**: Finalize First Lesson Plan	1 *Video of Lesson Study Planning Meeting* 2 Reflective Journal (4th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3 Student Survey (4th) on Lessons for the Week (Appendix C)
Week Seven (1.5 hours) 10/3/13	**LS Group Meeting**: Create Evaluation Method	1. *Video of Lesson Study Planning Meeting* 2. Reflective Journal (5th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (5th) on Lessons for the Week (Appendix C)

Week Eight (2.5 hours Teach & Observe) 10/8 9-10:15 B 10/10 12-1:15 C **(1 hour Debrief First Instruction) 10/8 1:00-2:00pm** **(1.5 hours LS Debrief Meeting) 10/10/13**	**First LS Instruction & Observation**: Teach and Observe First Lesson **First LS Debrief & Edit**: Debrief First Lesson and Analyze Evidence **Second LS Instruction & Observation** Second Teach and Observation of Revised Lesson **Second LS Debrief**: Debrief of Revised Lesson and Analyze Evidence	1. Video First Lesson Study Debriefing Meeting 2. Reflective Journal (6th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (6th) on Lesson Created from Lesson Study (Appendix C)
Week Nine (1.5 hours LS Meeting) 10/17/13 **(1.5 hours Mentoring Session) 10/14-10/25**	**LS Group Meeting**: Begin to Create Second Lesson Plan **First & Second Peer Mentoring Sessions:**	*1.* Video Second Lesson Study Debriefing Meeting *2. Lesson Study Planning Meeting* 3. Semi-Structured Interview (First) with Counselors (Appendix D) 4. Reflective Journal (7th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 5. Student Survey (7th) on Lessons for the Week (Appendix C) *6. Video of First and Second Expert Mentoring Sessions*
Week Ten (1.5 hours) 10/24	**LS Group Meeting**: Create Second Lesson Plan	*1. Video of Lesson Study Planning Meeting* 2. Reflective Journal (8th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (8th) on Lessons for the Week (Appendix C)
Week Eleven (1.5 hours) 10/31	**LS Group Meeting**: Create Second Lesson Plan	*1. Video of Lesson Study Planning Meeting* 2. Reflective Journal (9th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (9th) on Lessons for the Week (Appendix C)
Week Twelve (1.5 hours) 11/7	**LS Group Meeting**: Create Second Lesson Plan	*1. Videotape of Lesson Study Planning Meeting* 2. Reflective Journal (10th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (10th) on Lessons for the Week (Appendix C)

Week Thirteen (1.5 hours) 11/14	**LS Group Meeting**: Finalize Second Lesson Plan	1. *Video of Lesson Study Planning Meeting* 2. Reflective Journal (11th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (11th) on Lessons for the Week (Appendix C)
Week Fourteen (2.5 hours Teach & Observe) 11/21 12-1:15 C 11/26 10:30 A **(1 hours Debrief) 11/26 1:00-2:00** **(1.5 hours LS Debrief Meeting) 11/21**	**Third LS Instruction & Observation**: Teach and Observe First Lesson **Third LS Debrief & Edit**: Debrief First Lesson and Analyze Evidence **Fourth LS Instruction & Observation** Second Teach and Observation of Revised Lesson **Fourth LS Debrief**: Debrief of Revised Lesson and Analyze Evidence	1. Video Third & Fourth Lesson Study Debriefing Meetings 2. Reflective Journal (12th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 3. Student Survey (12th) on Lessons for the Week (Appendix C)
Week Fifteen (1.5 hours LS Meeting) 12/5 **(1.5 hours for Each Mentoring Session) 11/25-12/6**	**LS Group Meeting**: Celebration Lunch **Third & Fourth Peer Mentoring Sessions:**	1. Reflective Journal (13th) Response from Counselors (Appendix B) & Researcher Field Notes/Journal 2. *Video of Third and Expert Mentoring Sessions*
Week Sixteen (1.5 hours) 12/12		1. Teacher's Sense of Self-Efficacy Scale Post (Appendix A) 2. Semi-Structured Interviews (Second) with Counselors (Appendix E) 3. Researcher Field Notes/Journal

APPENDIX N

STUDENT SURVEY INVENTORY BY CLASS SECTION

Weeks 1 through 7

INS	**Day/Time**	**Total in Class (as of 9/10)**	**Wk 1** ***9/2-9/5***	**Wk 2** ***9/9-9/12***	**Wk 3** ***9/1-9/19***	**Wk 4** ***9/2-9/26***	**Wk 5** ***9/3-10/3***	**Wk 6** ***10/7-10/10***	**Wk 7** ***10/14-10/17***
A	MW/ 12pm	28	25	0	24	19	20	21	0
A	MW/ 10:30am	26	22	0	19	19	19	14	0
A	TR/ 10:30am	30	22	25	0	0	0	22	0
B	MW/ 9am	23	0	10	0	8	8	12	5
B	MW/ 10:30am	23	0	15	0	8	12	7	5
B	TR/ 9am	24	22	22	0	18	17	20	18
C	MW/ 12pm	23	0	21	17	0	16	18	15
C	TR/ 12pm	27	24	25	20	25	21	22	22
D	MW/ 1:30pm	27	0	21	19	21	19	21	16
E	MW/ 9am	21	19	17	16	10	13	11	9

Weeks 8 through 12

INS	Day/Time	**Wk 8** *10/21-10/24*	**Wk 9** *10/2-10/31*	**Wk 10** *11/4-11/7*	**Wk 11** *11/11-11/14*	**Wk 12** *11/18-11/27*	**Total Surveys**
A	MW/ 12pm	19	0	0	18	17	162
A	MW/ 10:30am	16	0	0	0	5	114
A	TR/ 10:30am	21	0	0	22	25	137
B	MW/ 9am	0	9	0	0	4	56
B	MW/ 10:30am	0	1	0	0	5	53
B	TR/ 9am	0	0	0	0	0	117
C	MW/ 12pm	0	10	12	0	13	122
C	TR/ 12pm	0	0	18	0	14	191
D	MW/ 1:30pm	0	0	19	0	0	136
E	MW/ 9am	14	11	5	10	11	146
							1235

APPENDIX O

INSTITUTIONAL REVIEW BOARD APPROVAL

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	David Carlson FACULTY/AD
From:	Mark Roosa, Chair Soc Beh IRB
Date:	06/06/2013
Committee Action:	**Exemption Granted**
IRB Action Date:	06/06/2013
IRB Protocol #:	1305009226
Study Title:	Lesson Study, a Means for Fostering Collaborative Reflection: Effects on the Self-Efficacy and Teaching Practices of Developmental Education College Success Course Instructors

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) (2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.