The Power of Instructor-Student and Peer Rapport in Post-Secondary Student Achievement

by

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ABSTRACT

This paper addresses a local problem of practice at Arizona State University regarding the support for potentially underprepared students. The overarching goal of this study was to better understand the role rapport plays in student achievement. This study examines how the LEAD Project (Learn, Explore, Advance, Design), in particular student relationships with instructors and their peers, may or may not influence student achievement. LEAD students complete three courses as a group – Introduction to Human Communication (COM 100), Critical Reading and Thinking (UNI 110), and The LEAD Project (ASU 150). The innovation was designed to give students the opportunity to build relationships with their instructors and with each other, so class sizes are limited to 40 students. Additionally, instructors work together outside of class to develop curriculum, instructional plans, and how to best support individual students.

Guiding literature for this study included Self-Determination Theory (SDT) as well as related studies (Deci & Flaste, 1995). This theory describes human motivation as a factor of the extent to which one feels autonomy, competence, and relatedness. Though relevant in many contexts, past researchers used SDT as a tool for understanding students' motivation to learn (Black & Deci, 2000; Freiberger, Steinmayr, & Spinath, 2012; Reeve & Jang, 2006).

The study used a concurrent mixed-method action research design including interviews, questionnaires, and institutional data. Over 400 first-year students participated in the study. Students shared their perceptions of their rapport with their instructors and peers, and their perceived learning in each of the three LEAD courses.

Data were analyzed using correlation and linear regression approaches. Significant relations occurred between many instructor-student rapport scales, peer rapport, perceived learning, and course grades. Additionally, instructor-student rapport scales significantly predicted perceived learning.

Qualitative and quantitative findings were aligned with each other, and were consistent with previous studies. This study advances the body of knowledge about instructor-student rapport by extending the findings around its role in student achievement. Results also suggested the need to further explore the role of peer rapport and its influence on student achievement. Results from the study show instructor-student rapport was mediators of student achievement.

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SITUATIONAL AND LOCAL CONTEXT

After a tedious, monotonous, sixteen-hour drive from Oklahoma City, the Richardson family finally arrived at their destination – Tempe, Arizona. Spending all of this time confined with her parents and younger brother left Amanda both exhausted and motivated for the year ahead. "Can't they just drop me off and go back home already? Don't they know I can do this?" Amanda thought to herself as they checked in at the motel. Amanda is the first in her family to attend college and her parents could not be any prouder. Helping to get her moved into the residence hall on campus is as much an achievement for them as it is for her. Amanda did well in high school and thinks she wants to become an elementary school teacher. Living in a residence hall with the other Teachers College students should help to ease the transition from living at home to living on-campus. This new journey, and identity, as a college student is exhilarating and simultaneously horrifying. She will make choices about how to pay for school, if and when to skip class, what assignments to complete and how hard to work on those assignments. Amanda's success lies in her hands, and hers alone. Will Amanda go on to complete her degree and become one of the most awarded teachers in the state? Alternatively, will her homesickness get the best of her and result in failed courses, student loan debt, and a one-way ticket back home to Oklahoma?

Amanda is just one of over 11,000 new students at Arizona State University. Each student comes with a unique background and unique outlook on what (s)he hopes to gain from their college experience. Some students are eager to start their new journey, whereas others are apprehensive and unclear of any individual purpose. Apprehensiveness and other factors such as low income, test scores, and college engagement contribute to attrition by first-year college students (Tinto, 2006).

Amanda's scenario is repeated thousands of times each year as new, first-time freshmen begin their higher education journey. In fact, data at the national level suggests both retention and graduation rates vary nationally. Those institutions with higher requirements for admission (e.g., high school GPA, SAT scores, etc.) have higher freshmen retention and four-year graduation rates than institutions with high admittance rates (NCES, 2014). Similarly, private institutions have higher retention and graduation rates than public institutions (NCES, 2014).

According to Tinto (2006) one area which needs further research is the influence faculty can have on first-year student retention. He suggested that researchers seek to broadly understand retention themes, and that further research should be done to understand better the influence of resources allocated for the freshmen year experience. In this chapter, I discussed the surrounding contexts for my problem of practice at the larger, local, and personal levels.

Larger Context

When determining solutions to problems of practice, it was essential to consider the contexts that surround the problem or problems. Contexts worth evaluating included those related to system, social, and local.

System Context

System context addressed information that could hold true for overarching organizations and was not specific to local context. This problem of practice's system context addresses national and state systems, and accountability and change forces.

National and state systems. One gauge for the complexity of a system refers to the degree to which system units are connected, or in other words, how loosely or tightly coupled they are (Weick, 1976). The national university system is arguably in the middle of the coupling spectrum. This system is moderately coupled in the sense that there are some national standards that pertain to all U.S. universities, but outside of those standards, universities are free to operate independently. As mentioned, there are national standards that pertain to American universities. The U. S. government or more specifically the Department of Education sets these standards. This department measures a university's success by two main statistics, first-time full-time freshmen retention to their sophomore year, and four/six year graduation rates. Outside of these measurements, universities are primarily free to operate as they see fit and according to their state's governing boards, or in ASU's case, the Arizona Board of Regents (ABOR) (Arizona Board of Regents, 2013).

Universities within the ABOR system are tightly coupled as each university president reports directly to the Board of Regents. Three Arizona universities report to ABOR, Arizona State University, the University of Arizona, and Northern Arizona University. According to ABOR, ASU peer institutions include University of California-Los Angeles, Florida State University, and Michigan State University, among others (Arizona Board of Regents, 2009). ABOR governs the local university system and

regulates a broad range of policies. Policies dictate the difference between a degree program and a minor. Whereas other policies mandate undergraduate students must earn 120 credit hours to earn a baccalaureate degree. Moreover, ABOR policies specifically outline the expectations for each credit hour earned and differentiate contact time based on the course type (e.g., in-person, online, hybrid).

Accountability and change forces. Building on the idea of universities reporting to national or state groups, brings about the notion of accountability. Accountability is important in education, but policy makers traditionally focus solely on external accountability. External accountability systems can negatively affect outcomes, whereas internal accountability systems lead to improved results (Fullan, Rincon-Gallardo, & Hargreaves, 2015). Instead, policy makers should put more focus on internal systems and providing schools the necessary resources to create their own internal accountability system. Thus, internal accountability will lead to external accountability (Fullan et al., 2015).

Arguably, the national university system is greatly influenced by the need for isomorphism. In other words, the need to be like each other (DiMaggio & Powell, 1983). Regularly in practice, faculty and staff research what other institutions are doing to solve university problems. Although there are some national coercive isomorphic processes, I believe mimetic and normative isomorphic forces appear to be much stronger with respect to the university system as a whole. The strongest isomorphic pressure with the Arizona system is coercive. Unlike in the national university system, within the state university system schools are seeking to differentiate themselves rather than be more alike.

A third lens through which to observe university systems is through the lens of professional capital (Fullan et al., 2015). These authors suggest the best way to improve institutional outcomes, is not by having policy makers create standards (i.e., external accountability), but rather by encouraging internal accountability systems. Within the national and state university systems, it is far more often that policy makers seek to create forms for external accountability. As mentioned above, these standards typically include first-year retention rates, and four/six year graduation rates. However, the authors suggest accountability should "not [be] limited to mere gains in test scores but [instead be focused] on deeper and more meaningful learning for all students" (Fullan et. al., 2015, p. 4).

A final lens through which to assess university systems is the notion of scaling (Sutton & Rao, 2014). The authors suggest two approaches for scaling solutions and frame it as "Buddhism versus Catholicism" (Sutton & Rao, 2014, p. 33). They go on to explain that a Catholic-style approach to scaling means the goal is to re-create beliefs and practices. Contrarily, a Buddhist-style approach to scaling means the goal is to replicate a mindset, not specific practices. These scaling practices are apparent in education systems. An example of a Catholic-style approach is seen with state testing requirements because all students must take the same exam thus leading teachers to cover the same content as the test. However, within each district and school, individual teachers may take a Buddhist-style approaches. Though tasked with teaching to a new standard, how they decide to reach that standard is widely up to them.

Social Context

I describe the social context by examining literature that identifies overarching goals in education systems and literature that reviews whether students are seen as commodities or consumers. This literature directly relates to the social context surrounding The LEAD Project at Arizona State University.

Goals of education systems. One lens through which to examine the social context of this problem of practice is through the perspective of Labaree (1997). He explains that there are three overarching goals of public education in the United States. These goals include democratic equality, social efficiency, and social mobility. The goal of democratic equality is primarily to produce informed citizens, but it also suggests both equal treatment of all students and equal access to education. This goal is a public good, or, in other words, a commodity or service that is free to all people in a given area (e.g., a city park, public roads, etc.). The second goal identified is social efficiency. This goal seeks not to produce citizens, but a work force. For a society to thrive economically, its members must be educated on the skills needed in the community. Again, this goal is a public good. The final goal Labaree (1997) presents is social mobility. This goal suggests education be provided to individual consumers who are working towards their own goals and personal achievements. Unlike the first two goals, this goal offers a private good. Private goods can only be offered to a certain number of consumers and thus excludes others from receiving the service.

As Labaree (1997) further explains, democratic equality and social efficiency have been in a constant tug of war over the last century. As society's needs change, so does the goal of American education. Despite the pendulum between the first two goals, social mobility remains embedded within each goal. These shifting goals have led to education that is stratified. Stratified refers to the notion of levels and sub-levels within an education system. For example, grade levels are one form of stratification. Within each grade level students may be divided into smaller groups such as advanced algebra, algebra, and pre-algebra. As a student progresses through the system each level completed can serve as an exchange value for a position in society. For example, a student with a high school diploma, in a sense, can exchange that diploma for a given job requiring that level of education. Similarly, a student who completed a master's degree can exchange that degree for a different job in society. With that degree, and job, comes societal and economic status.

With all of this in mind, I believe Labaree (1997) would most align The LEAD Project with the goal of social mobility. This student group is otherwise unlikely to persist to graduation. If LEAD, as an intervention, increases the likelihood of student persistence to graduation, then their degree attainment may lead to an improved livelihood for themselves and their families. On the other hand, Labaree may also argue that since The LEAD Project's goal is to improve student persistence to graduation, the notion of exchanging a degree for a job could also mean the driving goal of LEAD is social efficiency.

Students as commodities or consumers. Another lens through which to examine the context surrounding this problem of practice is through the work of Levin (2005). Like Labaree (1997), Levin describes the shifting role of education, but is more specific to that of community colleges rather than the entire academic system. Levin suggests changes in education are driven by changes in funding sources. Historically, community colleges received funding from state and local sources. However, as time progressed, funding from state sources dramatically decreased and forced funding from local sources to increase. In addition, funding sources from students (i.e., tuition) has also had to increase. In navigating this complex economic system, Levin suggests that students can be viewed as either consumers or commodities. When students are viewed as consumers, institutions must assess the demand for programs and strive to apply those programs in a way that will be profitable to the institution. One example of this can be seen in offering applied degree programs that connect a degree with a specific career path. Contrarily, when viewing students as a commodity, each student equates to a certain dollar amount provided to the institution (i.e., tuition, state-funding allocation, federal funding allocation). One example of this exists in the trend to recruit international students. These students are attractive as commodities due to their higher tuition rates that in turn provide institutions with funding for under-resourced programs. Because of these economic changes, institutions have made the decision to no longer offer credit for remedial programs and require that these non-credit programs be financially self-sufficient. Despite the original community college mission of access for all, this lack of financial support for remedial programs is now excluding many demographic groups that are already marginalized.

Within The LEAD Project context, I believe Levin (2007) would argue students in the program are viewed as consumers. Students are given the choice whether to participate in the program or not, and no additional funds are received from this population. Thus, the program is very much consumer driven. Contrarily, if the program began charging an additional fee, students might then be viewed more as a commodity rather than a consumer. When students are viewed as consumers, the program can adjust in design and size to account for increased demand.

National Context

The national context includes numerical trends for enrollment, admissions, student success metrics, and costs of attendance. Universities report these numbers annually which allow for some comparison across institutions.

Enrollment. One gauge to measure trends in higher education is enrollment. Between fall 2000 and fall 2014, enrollment at public degree-granting postsecondary institutions grew from 10.5 million to 13.7 million, a growth rate of 30 percent (NCES, 2016). In fall 2014, U.S. resident undergraduate enrollment at public 4-year institutions student demographic distribution included 61% white, 12% black, 16% Hispanic, 7% Asian, 1% American Indian/Alaskan native, 4% two or more races, and less than 1% pacific islander (NCES, 2016).

Admissions. Among public 4-year institutions in 2014-2015, admissions policies were established so that 78% required secondary school records, 69% required secondary school grades, 76% required standardized test scores (e.g., ACT, SAT), 19% required secondary school class rank, and 11% required recommendation letters (NCES, 2016, p. 215).

Retention and graduation. Retention and graduation trends vary by type of institution. After the 2014 – 2015 academic year, 4-year public institutions with the highest selectivity retained first-year students at the rate of 96 percent. Alternatively, those with open admissions retained 62 percent of first-year students. Overall, 81 percent of first-year students at public 4-year institutions returned for their sophomore year (NCES, 2016).

Cost of attendance. In academic year 2014-15, the total cost of attendance for first-time, full-time students at public 4-year institutions was $22,750 for students living on campus, $13,920 for students living off campus with family, and $23,370 for students living off campus not with family (NCES, 2016). The percentage of first-time full-time undergraduate students at public 4-year institutions increased between 2008-09 (79%) and 2013-14 (83%). During academic year 2013-14 this same student group received multiple types of financial aid. Federal grants were issued to 38% of students (average of $4,629), 37% received state/local grants ($3,752), 45% received institutional grants ($5,476), and 50% received student loans ($6,701) (NCES, 2016, p. 252, 254, 256).

Local Context

Local context for this problem of practice had many layers. These layers included the university as whole, first-year success programs, academic units involved in LEAD, and the responsibility of monitoring and improving first-year retention.

About the University

This problem of practice was located at Arizona State University (ASU). ASU is home to over 90,000 students at five in-person campuses and online. Although it is a large institution now, at its inception in 1885, twenty-seven years before Arizona's statehood, it began as a school for teachers. As the Phoenix area grew, so did the university. In 1959, Arizona voters cast their ballots to change the school from what was then Arizona State College to Arizona State University. The largest campus is located in Tempe, Arizona. The charter statement reads:

> ASU is a comprehensive public research university, measured not by whom we exclude, but rather by whom we include and how they succeed; advancing research and discovery of public value; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves (Arizona State University, 2015).

The charter statement serves as a directional tool for both university staff and faculty to reference in whatever their work may be.

During the Fall 2016 term, 62.8% of students were Arizona residents (N = 45,163), 46.5% of undergraduate students were female (N = 27,384), and 50.5% of undergraduate students were White (N = 29,739). The first-year retention rate from Fall 2015 to Fall 2016 was 85.7%. The four and six-year graduation rates were 51.9% and 67.1%, respectively. Educating thousands of students leads the university to employ many faculty members. During the Fall 2016 term, the total faculty included 3,439 individuals where 55.3% were tenured or tenure-track (Arizona State University, 2018).

The university has two main offices under which all university faculty and staff report under, the Office of the President and the Office of the University Provost. ASU consists of seventeen separate colleges. Examples of colleges include the Mary Lou Fulton Teachers College, the W. P. Carey School of Business, Walter Cronkite School of Journalism and Mass Communication, and the College of Liberal Arts and Sciences. Each individual college has its own dean who reports to the provost. The provost reports to the president.

As a state institution, the university's funding comes partially from the state budget. Other sources of revenue include student tuition and fees, grants and contracts for research, financial aid grants from the U. S. government, and private gifts among others. For fiscal year 2015, the state of Arizona provided 17.2% of the overall funds needed to operate the university. The largest source of revenue was tuition and fees, which accounted for 58.9% of the overall funds needed to operate the university. University expense categories include salaries and wages, benefits, operating, and scholarships. The highest two categories of expenses include salaries and operating expenses which account for nearly 70% of total expenses (Arizona State University, 2014).

First-Year Success Programs

Executive leaders at Arizona State University place a strong emphasis on first-year success programs. Examples of such programs include academic courses (e.g., ASU 101, UNI 120), residence halls, and college specific offerings.

Academic courses. Many academic success courses exist, but the two most prominent include ASU 101 – The ASU Experience and UNI 120 – Academic Success. ASU 101 is a required one-credit course, during the fall term, for all first-time freshmen. Many colleges, and even majors, offer unique courses for their respective student groups. For example, students from the W. P. Carey School of Business are required to take WPC 101, while their accountancy students are required to take ACC 101. All ASU 101 instructors are tasked with teaching students about campus and college resources, productivity strategies, and diversity. It is also common for academic advisors to visit these courses and help students enroll in their spring courses. While all new first-year students are required to complete ASU 101, only students identified as at-risk are required to take UNI 120.

Students identified as potentially underprepared are required to take UNI 120. Students receive this designation based on a composite score of their high school rank and SAT/ACT score. Each year, approximately 20% of first-year students are identified as at-risk. Like ASU 101, UNI 120 is also one credit hour. This course focuses primarily on mindset theory, personal responsibility, and developing self-awareness. Instructors support student growth by helping students develop a growth mindset and connecting them with on-campus resources.

Residence hall programs. Residence halls are another tool used to aid in student success. University policy requires all first-year students live on-campus. Local students may choose to apply to live off campus but must demonstrate substantial financial need or familial obligations. Housing administrators appoint students to specific residence halls based on the college a student has chosen to attend. For example, all engineering students live in the same residence hall. First-year engineering students have similar workloads and are required to take the same courses. By also living together, they can more easily form study groups and peer support systems. This model allows college staff and housing staff to collaborate and provide specific support to each student group.

College programs. Colleges also offer specific support programs for first-year students. Some colleges offer camps for their students where up to 200 students can venture north to Prescott, Arizona for a weekend away together. For example, business students attend Camp Carey where they spend Friday to Sunday together working in groups, forming friendships, and connecting with college faculty and staff. Other programs include special tutoring centers, career preparation seminars, and networking events. Across all retention initiatives, faculty and staff gather data to measure program effectiveness.

Monitoring First-Year Success

The university president defines goals for the institution; one of the top-priorities is first-year student retention rising above 90%. Efforts to reach this goal are executed at every level within the university. The responsibility of monitoring student success and retention resides with university staff and administrators. Many colleges hire retention coordinators whose sole responsibility is managing support programs and analyzing retention data. Additionally, university administrators are responsible for monitoring retention trends and providing interventions for student groups with below average retention trends. However, it is the responsibility of the Office of the University Provost to track and achieve this goal. Analysts share these findings with university leadership on a regular basis, and semi-annually reports are given to the Arizona Board of Regents.

Reports categorize students by residency status and readiness-level. Students identified as potentially underprepared (i.e., at-risk) retain at a rate much lower than other student groups. The LEAD Project is one intervention offered to increase retention for underprepared students. The program's success has the potential to increase an under-prepared student's success, but also to moderately increase the overall retention rate for the entire freshmen cohort. In the next section, I describe my personal connections to the problem of practice and the larger context surrounding the problem.

Personal Context

My journey in higher education began when I was a freshman at Arizona State University. Despite being a high-achieving high school student, the odds were not in my favor as a first-generation, out-of-state student who was responsible for her own personal and school finances. Despite the odds, I was able to connect with my college personnel, classmates, and student groups on campus. Throughout my undergraduate career, I became increasingly passionate about higher education, and more specifically, how I could help other students succeed. I served in various student leader roles doing things like one-on-one academic coaching, helping incoming freshmen sign-up for classes at orientation, instructing a one-credit course, and even completing an undergraduate honors thesis focused on student achievement.

Conducting an honors thesis was my first experience as an education researcher. At the time, I worked closely with the required freshmen seminar course (WPC 101). The course had over 100 different sections, and facilitators which resulted in many different experiences. My studies in services marketing led to a curiosity about the perceptions of both the students and facilitators, and where gaps existed between those perceptions. I conducted a quantitative study of students and facilitators then used the results to recommend changes to the college administrators. My experiences as a student leader and researcher solidified my desire to pursue a career in higher education.

Currently, I work in the Office of the University Provost managing programs under the Vice Provost for Student Success. This role allows me to oversee programs with desired outcomes ranging from improving student career readiness to working with start-up companies that help students understand and develop a growth mindset. Many of my responsibilities change from day to day. However, a few things remain constant: problem solving, connecting with university and college stakeholders, and monitoring/evaluating each on-going program. I am regularly a liaison between executive administration, department heads, faculty, and students. One program, which encompasses all of these duties, is The LEAD Project.

About the Program

The LEAD Project is a collaboratively instructed, cohort-based yearlong program offered to underprepared first-year students at Arizona State University. The program is about to embark on its fourth academic year. The goals of the program are improving student GPAs and improving the number of students who return for the spring and next fall's semesters. The fall 2017 program included over 20 cohorts across all four ASU campuses. Each cohort ranges in size from twenty to forty students. Each cohort has three instructors, though most instructors serve multiple cohorts. Although the program lasts their entire first year, my research focuses only on student experience during the fall semester.

Fall courses include Introduction to Human Communication (COM 100), Critical Reading and Thinking (UNI 110), and The LEAD Project I (ASU 150). LEAD staff schedule courses strategically so that students see each other at the same time each day of the week. For example, one cohort's LEAD class schedule is available in Table 1.1.

Table 1.1: Example LEAD course schedule

Course	Title	Days	Time
COM 100	Introduction to Human Communication	MW	10:30 – 11:45am
UNI 110	Critical Reading and Thinking	TTh	10:30 – 11:45am
ASU 150	The LEAD Project I	F	10:30 – 11:30am

These courses total seven credit hours, or about half of a student's course load. Curriculum across LEAD courses all scaffolds to prepare students for their end-of-semester project, a student-led debate. Students work in teams, debate from each side of an issue, and serve as an audience member judge. This unique curricular experience results from the ongoing collaborative efforts of its teaching team.

About the Teaching Team

The teaching team includes individuals varying in teaching experience, job title, and across many academic units. Rather than refer to individual's specific job titles, all individuals teaching a LEAD course are instead referred to as "coaches." During the Fall 2017 term, the LEAD coaches included approximately 40 individuals. Coaches collaborated to create a combined syllabus that encompasses three unique courses (i.e., COM 100, UNI 110, and ASU 150) and built lessons that align with the curriculum of the other courses in the program. For example, COM 100 can teach the same learning outcomes as non-LEAD courses, but teach specifically to preparing for the debate. When teaching public speaking, students can practice their debate material to learn the skills needed to speak in public.

Ongoing collaboration occurred during one-hour weekly meetings. During this meeting, coaches discussed both curriculum and how to best support individual students. Instructors discussed which students had been absent and any behavior patterns they have noticed in their class. As issues arose, a course of correction was discussed and an instructor moved forward with assisting the student.

About the Coach Training

Coach training occurred prior to the new semester. The Fall 2017 training included online and in-person components. Online training exists in Blackboard and included readings, videos, and discussion boards. The online component focused on student diversity and suggested pedagogies. The in-person session built on this context, but extended to also include team-building activities, discussion about LEAD, and curriculum planning.

Problem of Practice

The purpose of this mixed-method action research study is to examine the role of rapport on student success within the LEAD context. Both my prior research and the literature suggests instructor-student rapport mediates student learning. However, minimal research exists exploring the role of peer rapport in student learning or academic achievement. LEAD classrooms offer a context where students build rapport with multiple instructors and their peers, thus making it an ideal context to study the role of rapport.

Research Questions

Research questions for this study include qualitative and quantitative approaches to understanding the role of instructor-student rapport and peer rapport. Student achievement will include measures for perceived learning and course grades. The guiding research questions for this study are:

1a. How does instructor-student rapport mediate student achievement?

1b. To what extent does instructor-student rapport mediate student achievement?

2a. How does peer rapport mediate student achievement?

2b. To what extent does peer rapport mediate student achievement?

CHAPTER 2

THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE PROJECT

Given the importance of motivation for my problem of practice, this study was guided primarily by Self-Determination Theory (Deci & Flaste, 1995). In addition to self-determination theory, other researchers examined how implementing self-determination can improve student motivation. In this chapter, I describe self-determination theory, related literature, results of initial research cycles, and implications for this study.

Description of Self-Determination Theory

The primary theory guiding this study came from the work of Deci and Ryan – Self-Determination Theory (SDT). Their research theory examines human motivation, why humans did what they did. Within initial SDT research, three tenets evolved: autonomy, competence, and relatedness. This theory posits that humans feel motivated to act when they can exercise choice, feel competent, and feel connected to others. In the upcoming sections, I describe each of these as well as related literature and implications for this study.

Autonomy

Autonomy refers to an individual's sense of responsibility for their thoughts and behaviors. As Deci and Flaste (1995) explain, autonomy includes the notions of both intrinsic and extrinsic motivation. The term intrinsic motivation refers to the act of behaving a certain way without the presence of reward or punishment. Contrarily, the term extrinsic motivation refers to the act of behaving a certain way due to the presence of reward or punishment. For Deci and Flaste (1995), autonomy deals with the surrounding forces of control. Either an individual feels in control of their own actions or

feels their actions are being controlled by an outside force. When controlled by an outside force, individuals could choose either to comply with the direction or defy the direction (Deci & Flaste, 1995).

When first examining the roles of intrinsic and extrinsic motivation, one study examines the use of monetary reinforcement on the behavior of students completing a popular puzzle (Deci & Cascio, 1972). The treatment group in this study received one dollar for each puzzle successfully completed, whereas the control group received no reward. After a 30 minute period of puzzle activity, the researcher left the room for exactly eight minutes. Within the eight minutes of time spent alone, participants could either keep playing with the puzzle or entertain themselves with interesting magazines left in the room. Participants who received financial rewards for completed puzzles quit playing when the reward period was over. Those who were not paid, generally kept playing. All participants complied with the instructions, but those who were not rewarded had a higher sense of autonomy, or in other words did not feel controlled by the use of the monetary reward (Deci & Cascio). Findings from this study suggest rewarding task completion decreases intrinsic motivation.

Deci (1975) found similar results in a later study when examining the use of punishment as extrinsic motivation. Researchers asked elementary school children to read a certain text. Researchers asked participants in the control group to read the text whereas researchers instructed treatment group participants to read the text and then complete an exam based on their knowledge of the text. Both groups completed a test on the material immediately after reading the text, and then again one week later. Participants in the treatment group scored well on rote memorization, but poorly on

overall concepts on their first recall task. Contrarily, participants in the control group scored well on the overall concepts. Scores on the "week after" recall tasks were lower for both groups, but the treatment group scores decreased more than the control group participants who read the material without the intent to perform well on a recall task.

Results of these experiments highlight the role of autonomy within motivation. Losing touch with intrinsic motivation leads to alienation, and outside rewards led to decreased control interest (Deci & Cascio, 1972). Humans experience intrinsic motivation when given the opportunity to make choices about their work activities. When an option of choice was not present, the sense of autonomy decreased and so did intrinsic motivation (Deci & Cascio).

One example of this occurs in a study on health care. When a doctor instructed a patient to take a new medicine every morning, there was no sense of choice (i.e., no autonomy) and patients were less likely to take the new medication as prescribed. The patient felt controlled, not autonomous, and thus often chose to defy the control. However, when a doctor suggested a new medication and offered the patient a choice regarding what time of day would work best for them to take the medication, compliance increased. Simply by adding choice and increasing sense of autonomy, the doctor increased the patient's likelihood of regularly taking the new medication (Deci & Flaste, 1995).

Use of constraints. The use of autonomy is one tool to influence human motivation. Another human motivation tool utilizes the opposite of autonomy – constraints. Constraints include the addition of rules, guidelines, or directions that limit the individual's choices. Researchers explored the roles of autonomy and constraints to

better understand their roles in human motivation. For example, Deci, Nezlek, and Sheinman (1981) studied the use of limitations in an elementary art class. When giving students instruction for the day, teachers used either controlling language or autonomy-supportive language. Controlling verbiage included giving explicit instruction about what to do, and what not to do (e.g.,, "Do not mix the colors."). Alternatively, autonomy-supportive instruction meant the teacher considered the student perspective and included that recognition within the instructions (e.g.,, "I know it would be fun to mix the colors, but then the students in the next class wouldn't have any paint to use."). This use of limitations suggested one should "align yourself with the person being limited" because it "encourages responsibility without undermining autonomy" (Deci & Flaste, 1995, pp. 43). To analyze the student painting data, researchers mixed the paintings from each group and solicited outside experts to rate each painting on creativity and technical merit. Students who received autonomy-supportive instructions scored higher than the students who received controlling instructions. These findings suggest the use of constraints in an art classroom decreases student performance.

Competence

The use of rewards and punishments partially explain human behavior, but do not account for playful or exploratory behaviors (White, 1959). The second driving factor of human motivation within self-determination theory is the experience of competence. The need to feel competent drives people to both try new actions and practice familiar actions. Humans have demonstrated an innate need to feel effective (White).

Feedback. White (1959) found the feeling of competence results from oneself or feedback from others. Self-determination researchers expanded these findings by further

studying the role of feedback on human motivation (Deci, 1973). Similar to autonomy research studies, feedback can also be offered in either a controlling or an autonomy-supportive manner. Feedback categorized as controlling includes directive language and responds specifically to limitations within the context. In contrast, autonomy-supportive feedback recognizes effort, products, and avoids adherence to limitations (Deci & Flaste, 1995). For example, an English teacher giving feedback on her student's book reports could say, "You used proper grammar, discussed all required topics, and met the word count requirement. – A," or she could say something like, "I can tell you worked very hard on this assignment. You've done excellent work. - A." The first feedback example demonstrates speaking to the student's adherence to limitations, or compliance to the controls. The latter example utilizes autonomy-supportive feedback by focusing on the student, not compliance to constraints.

The above example only addresses the use of positive feedback. When appropriately used, negative feedback can also positively influence motivation. Deci and Flaste (1995) suggest considering the actions of a new doctor. In their example, they suggest a doctor miscalculated a dosage and prescribed 100mg rather than 10mg of a medication. Fortunately, a more experienced doctor recognized the mistake and the patient was not harmed. This situation necessitates the use of negative feedback to remedy the new doctor's mistake. However, Deci and Flaste (1995) recommend a specific strategy in presenting feedback to prevent the further decrease of the new doctor's sense of competence. Rather than tell the new doctor he/she made a mistake that could have killed the patient, it may better the new doctor's practice to ask for his/her thoughts on the situation (Deci & Flaste, 1995). The new doctor already knows he/she

made a huge error and is likely experiencing a decreased sense of competence so rather than tell the doctor things he/she already knows, it would be more effective to ask his/her thoughts and feelings. By discussing the situation, it opens the door for the experienced doctor to offer instruction and support without the new doctor feeling controlled or stupid.

Competition. Another factor influencing feelings of competence are competitions. At first glance, it appears competition would serve as an extrinsic motivator to influence behavior. In some instances, this is the case, but feedback given to Olympic silver medalists paints a different picture. Despite earning the title of second best athlete in the world, announcers often speak of silver medalists as the person who lost. With respect to the feeling of competence, competitions can result in an increased sense of competence in one person or one group, but a decreased sense of competence in other people. Although competition may motivate behaviors during the competition, non-winners are likely to experience a decrease in intrinsic motivation concluding the competition.

Both autonomy and feelings of competence influence intrinsic motivation and in turn human behavior. To be intrinsically motivated, one must understand how to achieve a desired outcome, have choice in behavior, and feel competent. However, autonomy and competence do not fully explain motivation. The last piece of the puzzle, proposed by Deci and Flaste (1995), includes interpersonal connectedness, or relatedness.

Interpersonal Connectedness

Of the three areas influencing human motivation, researchers consider interpersonal connectedness the most complex (Deci & Flaste, 1995). Interpersonal connectedness involves internationalization, the true self, and aspirations.

Internalization. Many theorists note the importance of human relationships and belonging (Baumeister & Leary, 1995; Maslow, 1943). As individuals engage with groups, both their identities and values shift to reflect those of the group. Adoption of values then leads to developing a sense of responsibility (Deci & Flaste, 1995). Individuals internalize this sense of responsibility through introjection or integration. Introjection refers to adopting a sense of responsibility because someone suggested it, whereas integration refers to gaining a feeling a responsibility independently. Ryan and Grolnick (1986) studied the role of internalization by examining parental involvement and students' value of schoolwork. The researchers found when parents or teachers utilized autonomy-supportive language, students were more likely to integrate the value for schoolwork and thus feel responsible for their own success. By comparison, when parents and teachers utilized controlling language, students experienced an introjected sense of responsibility to do well rather than internally valuing schoolwork.

Deci, Eghrari, Patrick, and Leone (1994) conducted another study that examined the role of integration. Researchers asked all participants to examine spots of light on a computer screen, but instruction type differed between the control and experiment groups. The control group received direct instruction whereas the treatment group received instruction combined with autonomy-supportive language. The treatment group also received additional information about the rationale for doing the activity,

acknowledged their feelings about the activity, and they were not told anything to make them feel pressured to perform well. Specific to the treatment group, researchers found "subsequent behavior was accompanied by their feeling free, enjoying the task, and believing that it was personally important. They were doing the behavior with a real sense of volition" (Deci & Flaste, 1995, pp. 102). In summary, developing a sense of responsibility can result from controlling forces (introjection) or from integrating values into individual's identity (integration).

The true self. Deci and Flaste (1995) explain the second concept influencing interpersonal connectedness as the pursuit of the true self. Individual's true selves develop over time and were either supported, or harmed, by the social world around them. Deci and Flaste explain this well when they state:

But integration and development of true self require that peoples' intrinsic needs be satisfied. When the social world within which people develop is autonomy supportive - when it provides optimal challenges and the opportunity for choice and self-initiation - true self will flourish. When the social world accepts people for who they are, providing love as they explore their inner and outer environments, true self will develop optimally. (p. 112)

To represent the true self individuals must both know and act on their intrinsic motivations. Sometimes, parents discipline their children by withdrawing their love when a child misbehaves. From this, children learn to appease their parents to receive love. This practice leads to stifling development of their true self.

Individual's egos, and self-esteem, integrate within their true self. Self-esteem valuations can derive from the true self or be contingent upon specific behavior. Self-

esteem valuations contingent on behavior are referred to as ego-involved. For example, the self-esteem valuations of a high school student known for her track and field abilities, specifically her 400-meter time. If her feeling of self-worth primarily results from her 400-meter time, her self-esteem would be considered contingent and ego-involved.

Aspirations. The last area included within interpersonal connectedness is aspirations. Like motivation, aspirations can be either extrinsic or intrinsic (Sheldon, Ryan, Deci, & Kasser, 2004). Extrinsic aspirations include desires for wealth, fame, and physical attractiveness, whereas intrinsic aspirations include desires for having satisfying personal relationships, contributing to the community, and growing as an individual (Deci & Flaste, 1995). Sheldon et al. (2004) found those with extrinsic aspirations were more likely to have poor mental health, even when they believed they could achieve their aspirations. Those who had extrinsic aspirations and feared they would not reach them had even more instances of poor mental health. Contrarily, those found to be the most mentally healthy were focused on intrinsic aspirations.

Literature Related to Self-Determination Theory

Self-determination theory describes human motivation as resulting from feelings of autonomy, competence, and relatedness. Feelings of autonomy evolve from offering choices and avoiding controlling language. Similarly, feelings of competence grow from oneself or through non-controlling feedback. Feelings of relatedness come from group engagement and internalizing a sense of responsibility. In this section, I describe studies examining the use of self-determination theory in school settings, and how specific

strategies influence students' intrinsic motivation. I explore the use of autonomy supportive teaching, feedback, and finally teacher relatedness.

Autonomy-Supportive Teaching

As previously explained, autonomy-supportive teaching refers to giving students the opportunity to make choices rather than trying to control every aspect of the learning (Deci & Flaste, 1995). Researchers Reeve and Jang (2006) conducted an experiment to measure how teacher behavior related to student outcomes. Study participants include 144 pre-service teachers who received extra-credit for their participation in the study. Participants were put in pairs where one participant acted as a teacher and the other as a student. Researchers asked teacher participants to teach the student-participants how to complete a puzzle. Researchers recorded these interactions and later measured teacher-participant behaviors and the number of puzzles completed, i.e., performance. Video reviewers recorded times teacher-participants spent on specific behaviors, and occurrences of specific behaviors like what seating arrangement style they used. Additionally, researchers asked student-participants to complete a survey at the end of the activity. The survey measured perceived autonomy, interest-enjoyment, and engagement.

Results of this study show students' perceived autonomy positively correlates with the outcome variables interest-enjoyment, engagement, and performance. Specific teacher behaviors had statistically significant correlations to students' perception of autonomy. Certain teacher behaviors were identified as autonomy-supportive whereas others were identified as controlling. Autonomy-supportive behaviors included offering encouragement, the amount of time the student worked, and the amount of time the student talked. Controlling behaviors included the teacher asking controlling questions

and making should/have to statements. This research study adds to the body of research, and teaching practices, by sharing evidence of the role of teacher behavior on student performance.

Another study examines the use of autonomy-supportive style in the classroom where three types of autonomy (organizational, procedural, and cognitive autonomy) were explored (Stefano, Perencevich, DiCintio, & Turner, 2004). Results showed that for learning to occur, students must be motivated to learn. This motivation likely came after a student began engaging with the material. To foster engagement, and thus learning, teachers must first create an environment that encourages autonomy. Stefano et al. (2004) suggests three types of autonomy may influence motivation: organizational, procedural, and cognitive. Giving students organizational autonomy refers to allowing students to choose details such as classroom rules or assignment due dates. Procedural autonomy refers to giving students choices for how to present their material (e.g., a formal paper, poster, or digital presentation). Finally, cognitive autonomy refers to giving students ownership of their own learning. Stefano et al. (2004) explains the importance of autonomy by stating, "Activities that support organizational or procedural autonomy may be necessary but insufficient to promote student engagement and intrinsic motivation. Cognitive autonomy support may be the essential ingredient without which motivation and engagement may not be maximized" (p. 109). This research adds to the body of literature by describing types of classroom autonomy.

A final study in this area examines students' engagement in relation to teachers' autonomy support (Reeve, Jang, Carrell, Jeon, & Barch, 2004). These researchers first provided professional development activities for 20 teachers and then measured teachers'

autonomy-supportive behaviors, involvement, and structure. Student engagement was measured as two variables: task involvement and structure involvement. Authors used multiple regression analyses to relate teachers' autonomy-support to student engagement. Results show student engagement significantly increases in autonomy-supportive classrooms.

Implications for autonomy-supportive teaching. Understanding different types of autonomy-supportive behavior helps teachers create autonomy-supportive classrooms. Autonomy-supportive teaching means much more than just giving students choices. The aforementioned research suggests the importance of the type of choice as well. Reeve and Jang (2006) found autonomy-supportive teaching behavior significantly related to student's perceptions of autonomy and that letting students decide organizational or procedural items did not meaningfully influence intrinsic motivation. Reeve et al. (2004) claims, "The motivating style of one person influences the motivation, emotion, learning, and performance of others" (p. 149). Autonomy-supportive teaching is one aspect that may increase student motivation. Competence and relatedness are also important to consider.

Competence

The second area addressed in self-determination theory is competence. Teacher feedback is one tool to influence student's perception of competence. One study examined the importance of competence as both a student's perception of their own competence, but also whether or not a student feels competence is important in a given content area (Elliot, Faler, McGregor, Campbell, Sedikides, & Harackiewicz, 2000). The researchers refer to the latter as competence valuation. Each of these competence scores

derive from teacher feedback and influence intrinsic motivation. Participants included 97 undergraduate students who earned extra credit in return for their participation. Again, researchers used puzzles to assess the effects of competence. Researchers provided either positive or negative feedback to participants about their performance. Correlation and regression results show statistically significant relations where positive feedback leads to increased competence valuation and increased intrinsic motivation. Contrarily, negative feedback led to decreased competence valuation and decreased intrinsic motivation. Participants' competence valuation, and higher perceptions of competence, predicted their levels of task enjoyment. This study highlights the importance of not only student feelings of competence, but also the extent to which a student values content specific competence.

A second study examined how competence related to feedback style influenced student's intrinsic motivation (Pat El, Tillema, & Van Koppen, 2012). Researchers measured student perceptions of formative feedback given in both monitoring and scaffolding styles. Monitoring feedback refers to giving students information about their current performance relative to expectations by the end of their assignment. Scaffolding feedback refers to providing students information about how to complete next steps through either direction and/or advice. Participants included 1,008 students from ten secondary vocational schools in the Netherlands. Researchers found both monitoring and scaffolding feedback styles significantly positively related to student interest. However, results also show "a relation between perceptions of formative feedback and interpersonal teacher behavior" (Pat El et al., p. 452). These results indicate teacher monitoring and scaffolding feedback mediates a student's sense of competence.

Researchers in another study explored the effects of student self-reports on intrinsic motivation, perceived competence, and perception of teacher's ability evaluation, i.e.,, teacher's assessment of student work (Freiberger, Steinmayr, & Spinath, 2012). Researchers examined second-grade student perceptions of their mathematical abilities (n = 459). Participants came from 11 elementary schools in southern Germany. Results show student perceptions of their teacher's evaluation of their ability relates to both student achievement and intrinsic motivation. Additionally, student competence beliefs relate to both achievement and intrinsic motivation. Finally, researchers found a statistically significant interaction effect between the independent variables of teacher's ability evaluations and student's competence beliefs on the dependent variable of intrinsic motivation by using a stepwise regression. These findings suggest the importance of both teacher's ability evaluations and student competence beliefs play key roles in student achievement.

Spinath & Spinath (2005) conducted a longitudinal study examining learning motivation and competence beliefs in 789 German middle school students. Over a two year period, participants completed a self-report questionnaire every six months. Researchers analyzed data through ANOVA and structural equation modeling and found that student learning motivation and competence beliefs both decreased over time. Further, no statistically significant causal relations existed between learning motivation and competence beliefs. However, this study was not specific to any given content area, e.g., mathematics, English. Further research should be done to explore whether causal relations exist in specific content areas.

Implications for competence in the classroom. Teacher's feedback about student ability and relationships influences student intrinsic motivation. Researchers emphasize the importance of the role of feedback by stating:

Unrealistic or lack of feedback sets children up for future failure experiences. Instead, only if children are able to evaluate their abilities realistically they are able to choose adequate tasks and perceive their own learning progress. This, in turn, is likely to foster children's actual abilities and positive self-evaluations" (Spinath & Spinath, 2005, p. 100). To increase student motivation, teachers should understand and use monitoring and scaffolding feedback.

Relatedness and Rapport

The final area within self-determination theory is relatedness. Unlike autonomy and competence, relatedness has not yet been widely studied. Because relatedness research was not readily available, studies with similar purposes have been included in this section. Similar studies look at the extent to which teachers have been perceived as caring and how a sense of belonging may influence college freshmen retention (Hoffman, Richmond, Morrow, & Salomone, 2003; Morrow & Ackermann, 2012; Wentzel, 1997; Zumbrunn, McKim, Buhs, & Hawley, 2014).

Wentzel's (1997) longitudinal study followed 250 middle school students. Students completed a questionnaire at the beginning of their sixth-grade year and again at the end of their eighth-grade year. This study sought to understand how student perceptions of the extent to which teachers cared about them influenced their individual motivation to learn. Results suggest the extent to which students perceived that a teacher cared influenced student motivation. Wentzel explains, "Teachers who care were

described as demonstrating democratic interaction styles, developing expectations for student behavior in light of individual differences, modeling a 'caring' attitude toward their own work, and providing constructive feedback" (p. 415-416).

Additional studies examine how a student's sense of belonging relates to returning for their sophomore year at the university (Hoffman et al., 2003; Morrow & Ackermann, 2012; Zumbrunn et al., 2014). Results from these studies suggest faculty support as a key variable that influences student retention. Morrow and Ackermann (2012) assert, "Students who felt comfortable and accepted in class not only tended to have higher efficacy beliefs, but also felt that the course content was more useful than their peers with weaker perceptions" (p. 677). In the Zumbrunn et al. study, researchers asked first-year college students to complete a survey designed to measure their sense of belonging. Researchers built regression models to assess whether any variable would predict students' intention to return or their actual return for their sophomore year. Perceived faculty support was a statistically significant predictor of students' intention to return. Similarly, perceived peer support was a statistically significant predictor of students' actual return for their sophomore year.

A related, and developing, theme in the literature defines and explores the role of rapport. Gremler and Gwinner (2008) reviewed previous rapport-building research to identify behavior themes warranting further exploration, and then used critical incident theory to define specific rapport-building behaviors. The review of literature led to four rapport-building behavior themes including attentive, courteous, imitative, and common grounding. Review of the critical incident data collected expanded common rapport-

building strategies from four themes, to five themes with fourteen specific behaviors. These themes are behaviors are available in Table 2.1.

Table 2.1: Rapport Themes and Behaviors

Theme	Behaviors
Uncommonly attentive behavior	Atypical actions Personal recognition Intense personal interest
Common grounding behavior	Identifying mutual interests Finding other similarities
Courteous behavior	Unexpected honesty Civility Empathy
Connecting behavior	Using humor Pleasant conversation Friendly interaction
Sharing of information	Giving advice Imparting knowledge Asking questions to understand customer needs

Building on the work of Gremler and Gwinner (2008), other researchers shifted the context of rapport from retail to education. Frisby and Myers (2008) explored the extent to which rapport related to participation, affective learning, motivation, and student satisfaction in university classrooms. Participants included 281 undergraduate students enrolled in communication coursework. The primary data collection tool included a questionnaire based on the scales listed above. Rapport measures included two sub-scales, enjoyable interaction and personal connection. Example sub-scale items read, "In thinking about my relationship with this person, I enjoy interacting with this instructor," and "This instructor has taken a personal interest in me." The researchers analyzed data by conducting correlations between each construct and found positive

correlations throughout, including instructor-student rapport and affective learning, state motivation, and satisfaction.

Instructor-student rapport research continues with the work of Wilson, Ryan, and Pugh (2010). In this study, researchers collaborated with students to draft an instructor-student rapport scale aimed at quantifying students' perceived rapport with an instructor. Using the co-developed items, and pre-developed immediacy items, they surveyed close to 200 undergraduate students. Example items include: "My professor and I get along," "My professor is understanding," and "I want to take other classes taught by my professor." Results showed that 34 of the 44 items were valid and that rapport added explanatory power in addition to the immediacy scale. Findings in this study indicated instructor-student rapport measures mediate student perceptions of the instructor, course, and perceived learning. Wilson and Ryan continue their research to further validate the instructor-student rapport scale and understand the role of rapport in the university classroom (Wilson & Ryan, 2013; 2014).

Other recent studies also explore the role of instructor-student rapport in the university classroom (Frisby, Beck, Smith Bachman, Byars, Lamberth, & Thopson, 2016; Frisby, Berger, Burchett, Herovic, & Strawser, 2014; Frisby & Housely Gaffney, 2015; Webb & Barrett, 2014). Despite varying methods across studies, results all point to the mediational role of rapport on student learning.

Implications for relatedness. Morrow and Ackermann (2014) explain the need for further research on non-cognitive factors and their relation to student retention. They suggest practitioners should then use these findings to inform best practices and direct resources to the practices that have the greatest impact on retention. Throughout related

literature, a common theme emerges – teachers influence students' intrinsic motivation. However, further research is needed to understand which specific teacher behaviors foster intrinsic motivation and what role peer relationships play on student achievement.

Literature on First-Year Success Initiatives

As seen above, an extensive body of research studies exist to define self-determination theory and to explore its pragmatism in educational settings. Because the innovation reviewed in this study is a first-year success initiative, I describe research studies on similar programs below. Some researchers review the role of motivation whereas others aim to understand which factors are the most predictive of a student's academic success (De Clercq, Galand, Dupont, & Frenay, 2013; Dresel & Grassinger, 2013). First-year success initiatives include the use of faculty support, peer support, and learning communities.

Faculty Support

One study sought to identify if differences in academic motivation exist between gender groups or academic major (Koseoglu, 2013). Researchers used the Academic Motivation Scale (AMS) to explore intrinsic, extrinsic, and amotivation among 728 first-year students at a non-profit university (Koseoglu, 2013). Participants completed a one-time questionnaire in class. Analysis included descriptive statistics, one-way ANOVA, and independent sample t-tests. ANOVA results show statistically significant differences in each motivation type for male and female students. ANOVA results also showed differences in motivation between academic majors.

In another study, researchers examined college students' perceptions of autonomy support, self-efficacy, achievement goals, and their relations to intrinsic motivation and

attitude to STEM courses (Simon, Aulls, Dedic, Hubbard, & Hall, 2015). Participants included 1,309 junior college students who previously attended one of four local public schools. Study data includes questionnaire responses and institutional data for eight subscales: (1) autonomy support, (2) self-efficacy, (3) intrinsic motivation, (4) positive affect, (5) negative affect, (6) master-approach, (7) performance approach, and (8) achievement. Researchers analyzed the data using descriptive statistics and structural equation modeling. Analysis indicated male student achievement benefited from higher autonomy support and female student achievement benefited from higher perceptions of self-efficacy and achievement goals.

Peer Support

Research exploring the role of peer support in the classroom is limited. Results from one study indicated maintaining high school relationships and fostering new college friendships are associated with transitioning to college (Swenson, Nordstrom, & Hiester, 2008). Another study explored peer relationships' association with academic achievement (e.g., GPA) and persistence (Swenson Goguen, Hiester, & Nordstrom, 2011). Participants included 271 first-year students at two northeastern US universities. Data collection tools included a pre/post questionnaire and institutional data (e.g., GPA). Questionnaire subscales included intimate friendship (high school and college friends), inventory of peer attachment, and Quality of Relationships Inventory (QRI). Data analysis included correlation and various regression methods. Both having trust and sharing common interests with a college friend were found to positively relate to student achievement.

Learning Communities

The intervention reviewed in one study, grouped students into learning communities with varying frequencies of group meetings with their faculty advisor during their first semester at university (Potts, Schultz, & Foust, 2004). Learning communities consisted of ten or fewer students taking three courses together, but with other students also in each course. Participants included 308 new freshmen at the University of Wisconsin-River Falls during the fall 1998 term. Student success data included term GPAs for fall 1998 and fall 2001, and retention to the fall 2001 term. Individual learning community numbers were too small for robust statistical analysis. Results indicated no statistically significant changes in academic performance or persistence between groups from time one to time two.

Hoffman, Richmond, Morrow, & Salomone (2003) sought to create an instrument to measure students' sense of belonging. Researchers conducted 24 focus groups, where 12 groups were in learning communities, and 12 groups were not in learning communities. Each focus group consisted of 15 to 30 students. This study compared students in learning communities to students enrolled in otherwise unconnected first-year courses. Focus group data was transcribed and then later coded and reviewed for themes. Results showed that students' sense of belonging to their peers and faculty was higher in learning communities.

Results from another study show at-risk first-year business students who participated in a first-year seminar and academic cohorts retained at much higher rates than their peers (Potts & Schultz, 2008). Participants included 223 first semester

freshmen. The contradictory findings of learning communities suggests the need for further research.

Prior Research Cycles Leading to the Current Study

My research questions and methods have changed since starting my doctoral journey in May 2015. As I conducted more research cycles, my research questions and methods evolved for my next cycle. I overview changes in my research questions and methods in the coming sections.

Preliminary Findings

I began programmatic assessment from August – December 2014 (n = 47). Initial research efforts utilized a student questionnaire designed to measure program satisfaction and perceived learning. As my doctoral education and LEAD have progressed, so have the research efforts. Both the data and my studies suggested the importance of relatedness between instructors and students. For this reason, the next research cycle included a modified Self-Determination Theory scale as a measure of students' perceived autonomy support.

Fall 2015 – Cycle 0

When beginning my journey as a doctoral student, my ideas lacked clear guiding questions. My context and personal interests suggested a study of the potential effects of The LEAD Projects. At this time, I had little understanding of guiding theoretical perspectives or related literature. Similarly, I had minimal experience with data collection or analysis. My Fall 2015 research cycle, predominantly exploratory, utilized a student questionnaire with both quantitative and qualitative items. This questionnaire included items designed to measure utilization of on-campus resources, satisfaction with LEAD,

and perceived learning. Quantitative results showed students believed they learned course material, were satisfied with their experience, and utilized campus resources. Qualitative results pointed at the importance of relationships with instructors and peers.

Beginning in the Fall 2015 (n = 200) the student questionnaire expanded to include the six-item abbreviated Learning Climate Questionnaire (LCQ), and the addition of student interviews. This cycle found statistically significant relations between student perceptions of autonomy support and learning for each of the three LEAD courses. For example, there was a significant relation between perceived autonomy support for UNI 110 and perceived learning in UNI 110 where $t(198) = 21.03$, $p < 0.001$. Additionally, questionnaire results indicated relationships among peers could mediate student success. For example, in an open-ended question asking students their three favorite things about LEAD, nearly every student listed both their instructors and classmates. When asked, "The LEAD Project helped me form relationships with other students." Students strongly agreed (M = 4.21, sd = 0.88). Similarly, when asked, using a six-point scale, "The LEAD Project helped me form relationships with instructors," students reported a high level of agreement (M = 4.09, sd = 0.86). Student interview results highlighted the impact of rapport between the student and instructor on the student's motivation to learn. These findings again suggested the importance of relatedness and instructor-student rapport, and additionally highlighted the importance of peer relationships.

Spring 2016 - Cycle 1 Methods

Both results from Cycle 0 and my newfound understanding of theoretical principles inspired new research questions and methods. During Cycle 1, I wanted to

further explore perceptions of autonomy support with student learning. My research questions in Spring 2016 asked:

1. To what extent does the LEAD program influence student's perceived learning?
2. To what extent does autonomy-supportive teaching style influence students' perceived learning?
3. In what ways do teachers influence student motivation to learn?

In an effort to find answers for these questions, I adjusted the student questionnaire to include the Learning Climate Questionnaire to measure perceived autonomy support for each individual LEAD course. I also expanded my methods to include student interviews. Results from Cycle 1 again indicated relationships between students and instructors, and students with their peers, may mediate success in the course.

Fall 2016 – Cycle 2 Methods

Noting Cycle 1 results' emphasis on the role of relationships, I went back to the literature on a hunt for existing studies or scales that I could reference in my own study design research. During this cycle, I found literature that defined rapport, rapport behaviors, and even scales to measure instructor-student rapport (Frisby & Martin, 2010; Grimler & Gwinner, 2008, Wilson & Ryan, 2014). This literature supported the addition of sub-scales to the student questionnaire to measure instructor-student rapport (i.e., student engagement and perceptions of teacher), and the creation of a new scale for peer rapport. This cycle helped to assess reliability and validity for the student questionnaire and guided the research questions for the study proposed above.

Research efforts expanded to include classroom observations, student journal entries, and additional constructs (e.g., student engagement, perceptions of teacher, and

peer rapport) within the student questionnaire to further explore instructor-student rapport and peer rapport. This research cycle served as instrument validation and tested for internal-reliability for newly added scales including instructor-student rapport (i.e., student engagement, perceptions of teacher) and peer rapport. Detailed results for Cycle 2 are described in the next section.

Cycle 2 Results

Multiple previous research cycles lead to the study proposed here. The pre-dissertation cycle occurred during the Fall 2016 term. The primary instrument in this cycle was a student questionnaire. Participants in this cycle included 285 first-year students enrolled in the LEAD Project. Participants were equally split between gender, but not ethnicity. Over 40% of participants identify has Hispanic (n = 116), 36.5% as white (n = 104), 10.9% black (n = 31), 6.7% as two or more races (n = 19), and 3.5% as Asian (n = 10).

Peer Rapport

The peer rapport scale was adapted from previous rapport research (Frisby & Martin, 2010; Grimler & Gwinner, 2008). This sub-scale included eleven items and utilized a six-point Likert-scale where strongly disagree = 1, disagree = 2, somewhat disagree = 3, somewhat agree = 4, agree = 5, and strongly agree = 6. Sub-scale validity and reliability were assessed using factor analysis and Cronbach's test for internal reliability.

To assess validity of the peer rapport sub-scale, items were factor analyzed using principal component analysis with Varimax rotation. The analysis resulted in one factor

that explained 53.35% of the variance within the eleven sub-scale items, and with an Eigenvalue of 5.868.

Table 2.2: Peer Rapport Factor Analysis Loadings

Item	Loadings
I know many of my classmate's names.	.596
I have things in common with my classmates.	.797
Most of the time my classmates are respectful of me as an individual.	.617
I am friends with some of my classmates.	.753
I am comfortable asking my classmates for help with coursework.	.742
There are students in this class that I care about.	.811
I look forward to seeing my classmates.	.835
I sometimes study or do coursework with my classmates	.750
LEAD helped me form relationships with other students.	.803
In LEAD classes, I feel like I am part of a group.	.837
I can talk with my classmates about things that really matter to me.	.341

The factor analysis confirms the scale consists of one factor, but further analysis was done to assess internal reliability. Assessing for internal reliability, the overall scale yields an α of 0.827. Individual item descriptive statistics and reliability are available in Table 2.3.

Table 2.3: Peer Rapport Item Descriptive Statistics

Item	n	Mean	Std. Dev.	α if item deleted
I know many of my classmate's names.	284	5.29	0.881	.817
I have things in common with my classmates.	281	4.68	1.020	.803
Most of the time my classmates are respectful of me as an individual.	283	5.22	0.860	.817
I am friends with some of my classmates.	283	5.10	0.863	.809
I am comfortable asking my classmates for help with coursework.	283	5.11	0.892	.810
There are students in this class that I care about.	282	5.00	1.025	.801
I look forward to seeing my classmates.	282	4.84	1.096	.797
I sometimes study or do coursework with my classmates	283	4.51	1.410	.799
LEAD helped me form relationships with other students.	283	4.85	1.149	.800
In LEAD classes, I feel like I am part of a group.	283	4.88	1.080	.797
I can talk with my classmates about things that really matter to me.	282	4.75	3.256	.915

Ten of the eleven items yield lower internal reliability scores if the item were to be deleted. The high internal reliability among these ten items, along with the factor loadings indicate the items belong on the same sub-scale. Results from both the factor analysis and internal reliability suggest the removal of one item from the sub-scale. The item "I can talk with my classmates about things that really matter to me," did not align with other items in the scale.

Results reported below focus on descriptive and correlation statistics. The questionnaire included identical scales for autonomy support, perceptions of teacher, student engagement, and perceived learning. Each scale was included on the questionnaire a total of three times, once for each LEAD class: Introduction to Human Communication (COM 100), Critical Reading and Thinking (UNI 110), and The LEAD Project I (ASU 150). Results are discussed for each individual class.

COM 100 Results

COM 100 sub-scales include autonomy support, perceptions of teacher, student engagement, peer rapport, and perceived learning. An additional score included in the analysis was course grade. Scale descriptive statistics are reported in Table 2.4.

Table 2.4: COM 100 – Sub-Scale Descriptives and Internal Reliability

Sub-Scale	# Items	n	Mean	Std. Dev.	α
Autonomy Support	6	277	5.11	.96	.951
Perceptions of Teacher	9	281	5.49	.75	.971
Student Engagement	6	277	4.93	1.10	.951
Peer Rapport	11	278	4.93	.85	.827
Perceived Learning	8	274	4.36	.60	.915
Course Grade	-	284	2.93	.91	-

All questionnaire scales used a six-point Likert-scale. Sub-scale means ranged from 4.36 (perceived learning) to 5.49 (perceptions of teacher). All α scores were above .80 with the highest α of .97 for perceptions of teacher.

Sub-scale scores for autonomy support and rapport were compared to student perceptions of learning and course grades [Table 2.5]. Results showed statistically significant correlations between each sub-scale and perceived learning. However, none of the sub-scales significantly related to COM 100 course grades.

Table 2.5: COM 100 – Sub-Scale Correlations Table

	Perceived Learning	Course Grade
Autonomy Support	.540**	.040
	(.000)	(.511)
	n = 268	*n* = 276
Perceptions of Teacher	.499**	.064
	(.000)	(.283)
	n = 271	*n* = 280
Student Engagement	.454**	.093
	(.000)	(.125)
	n = 268	*n* = 276
Peer Rapport	.194*	.062
	(.001)	(.302)
	n = 269	*n* = 277

**p < 0.05 **p < 0.001*

Students perceived learning and course grades also do not correlate at a significant level ($r = .079$, $p = .194$, $n = 273$). Results are further examined for the second LEAD course, UNI 110.

UNI 110 Results

Like COM 100, UNI 110 utilized the same sub-scales (e.g., autonomy support, perceptions of teacher, student engagement, and perceived learning). Sub-scales used the same six-point Likert-scale ranging from strongly disagree to strongly agree. Means for UNI 110 sub-scales ranged from 4.49 (perceived learning) to 5.29 (perceptions of

teacher). Internal reliability scores ranged from .841 (student engagement) to .956 (perceptions of teacher) [Table 2.6].

Table 2.6: UNI 110 – Sub-Scale Descriptives and Internal Reliability

Sub-Scale	# Items	n	Mean	Std. Dev.	α
Autonomy Support	6	277	4.90	1.08	.947
Perceptions of Teacher	9	280	5.29	.86	.956
Student Engagement	6	275	4.60	1.11	.841
Peer Rapport	11	278	4.93	.85	.827
Perceived Learning	8	281	4.49	.63	.933
Course Grade	-	284	3.46	.85	-

Student perceptions of autonomy support and rapport were compared to perceived learning and course grades via correlational analysis. For UNI 110, each sub-scale yielded statistically significant correlations for both perceived learning and course grade. Full correlation results are available in Table 2.7.

Table 2.7: UNI 110 – Sub-Scale Correlations Table

	Perceived Learning	Course Grade
Autonomy Support	.551**	.342**
	(.000)	(.000)
	n = 274	*n* = 276
Perceptions of Teacher	.591**	.220**
	(.000)	(.000)
	n = 277	*n* = 279
Student Engagement	.506**	.174**
	(.000)	(.004)
	n = 277	*n* = 274
Peer Rapport	.224**	.180**
	(.000)	(.003)
	n = 276	*n* = 277

**p < 0.05 **p < 0.001*

Further analysis also shows a statistically significant correlation between student perceptions of learning and UNI 110 course grade ($r = .289$, $n = 280$, $p < .001$).

ASU 150 Results

Sub-scales for ASU 150 include autonomy support, perceptions of teacher, student engagement, and perceived learning. Sub-scale means for ASU 150 range from 4.54 (perceptions of teacher) to 5.28 (autonomy support). The lowest internal reliability score occurred for the student engagement sub-scale where α was .786. All other internal

reliability scores were above .8. Sub-scale descriptive statistics and internal reliability scores are available in table 2.8.

Table 2.8: ASU 150 – Sub-Scale Descriptives and Internal Reliability

	# Items	N	Mean	Std. Dev.	α
Autonomy Support	6	279	5.28	.79	.949
Perceptions of Teacher	9	280	4.54	.49	.942
Student Engagement	6	276	4.89	.91	.786
Peer Rapport	11	278	4.93	.85	.827
Perceived Learning	8	281	4.46	.61	.924
Course Grade	-	284	3.18	1.0	-

Again, sub-scales are compared to perceived learning and course grade [Table 2.9]. Each sub-scale significantly correlated to perceived learning ($p < .001$). However, only autonomy support and perceptions of teacher significantly related to course grade. Student engagement and course grade significantly related to each other, but at a slightly lower level of $p < .05$. Peer rapport and course grade did not relate to each at a significant level.

Table 2.9: ASU 150 – Sub-Scale Correlations Table

	Perceived Learning	Course Grade
Autonomy Support	.470**	.164**
	.000	.006
	276	279
Perceptions of Teacher	.470**	.164**
	.000	.006
	276	279
Student Engagement	.449**	.136*
	.000	.024
	273	276
Peer Rapport	.257**	.061
	.000	.308
	275	277

$*p < 0.05$ $**p < 0.001$

Results from the Fall 2016 research cycle show internal reliability and significant correlations between autonomy support, perceptions of teacher, student engagement, and peer rapport with perceptions of learning and course grades.

Intervention in this Study

The intervention being examined in this study was student participation in a new curricular program for potentially underprepared first-year students. The intervention consisted of three courses which students took together as a group, and where the instructors all worked together and met weekly. The program occurred in the Fall 2017 semester. The purpose of the program was multifaceted. Students formed relationships and built a sense of connectedness to each other, with their instructors, and the program. Additionally, instructors learned about student demographics and needs, and practiced characteristics of autonomy-supportive teaching as exemplified in the work of Deci and

Flaste (1995). Within autonomy-supportive teaching, instructors addressed the three components suggested by Deci and Flaste: (a) student autonomy, (b) student competence, and (c) personal relatedness to peers and faculty.

Rationale

The local context of the problem of practice in this study highlights a need for improved strategies to support underprepared first-year students. The theoretical perspective of self-determination theory, in particular the use of autonomy-supportive teaching, has been found to improve student success (Reeve & Jang, 2006). Training instructors on autonomy-supportive and rapport building strategies may influence student academic success and persistence. The unique context, combined with unsubstantial literature explaining the roles of instructor-student or peer rapport on academic achievement make this the ideal time and place to explore the mediational role of rapport. Additional supporting literature is available in Appendix A and Appendix B.

CHAPTER 3

THE RESEARCHER AND HER RESEARCH METHODS

In this chapter, I first share my perspectives as a researcher including ontology, epistemology, theoretical perspective and methodology. I then discuss the setting and innovation included in this study. Data measures and analysis methods conclude the chapter. Research questions for this study include:

1a. How does instructor-student rapport mediate student success?

1b. To what extent does instructor-student rapport mediate student success?

2a. How does student-student rapport mediate student success?

2b. To what extent does student-student rapport mediate student success?

Exploration of the Researcher

The nature of the doctorate of education program combined with my local context resulted in an intimate intertwining of myself as an individual with my research project. I am both a producer and product of ongoing research efforts. Though I am producing information, I am also a product of my interventions. The more research cycles I conducted, the more I grew and changed. As I grew and changed, my research questions and methods changed as well. To understand this study, I think it important the reader first understand me, the researcher. In coming sections, I share my research paradigm views, my role as the researcher, and my research questions.

Research Paradigm

In an effort to communicate my research methods, I first describe my ontological, epistemological, and methodological beliefs and perspectives. My approach to understanding and finding the truth is grounded in reason. My primary motivation to do

research is to effect positive change. When I conduct research, I seek to measure the social landscape as best I can from my point of view. I believe the best kind of research is research that results in practical plans to better people's lives. In other words, research should solve social problems. In relationship to my research, I am embedded in the context in which I am trying to effect change.

Ontology. I walk the line between believing reality can be an evident truth and believing reality is a unique perception by an individual. This internal dichotomy of beliefs about what reality is pulls me back and forth between the quantitative and qualitative paradigms.

I do not believe in 100% generalizable findings. My interpretation of research findings and the reader's interpretation of the study are subject to each of our own unique perspectives. I bring a lifetime's experience with me. That experience does not simply disappear because I decided to embark on a research project. Similarly, I believe as a reader, it is impossible to disconnect from all prior life experiences. My presence as a researcher effects study participants and vice versa. I do not think it is possible to separate the researcher and participants. The study inherently connects the two. Reality varies by individual, context, and time. Thus knowledge, and the value of that knowledge, can also vary.

Epistemology. I believe knowledge can be produced through many methods. Different research questions warrant different research methods. The best fit method for knowing reality is the one that will help me to solve problems and create change. For me, this means that sometimes strictly quantitative or qualitative approaches are the best fit and other times a mixed approach is needed.

Theoretical perspective. I am neither a positivist nor a constructivist. I believe knowledge can be generated by quantitative, qualitative, arts-based, and critical methods among others. I make choices about which research method to use based on the alignment of the research method with my research questions. My views align best with the theoretical perspective of Deweyan pragmatism (Ivankova, 2015).

Methodology. All of the above perspectives lead to the best-fit methodology as mixed-method action research. This methodology allows me to use many different instruments. I can choose the best-fit instrument based on the research question and my current context. Measures will include semi-structured interviews, questionnaires, student journal entries, and institutional data.

Role of the Researcher

For the purposes of this study, I served in three overarching roles: (1) director, (2) program manager, and (3) instructor. I am the director of student success initiatives in the Office of the University Provost at Arizona State University. This role allows me to explore student data and experiences as it relates to their earning a degree. I work to establish new programs that aim to increase the percent of students who make it to graduation. The nature of this position requires substantial relationship building and problem solving. I build and maintain relationships with each of the university's 17 colleges and many of the smaller academic units within those colleges. With each new program that is implemented I am responsible for creating and implementing training sessions, monitoring student progress, and supporting college faculty and staff throughout the process.

My role in this research project was that of program manager. My job was to support and lead all of those involved, though none of the participants report directly to me. Responsibilities included providing training, scheduling weekly meetings, ensuring program records were up to date, and regularly connecting team members with university partners who could assist a student with whatever current problem they faced. For example, Andy's COM 100 instructor shared that Andy's course performance was suffering and that he was rarely able to attend class due to a debilitating case of pneumonia. As a business student, Andy could apply to the college's medical withdraw advisor to withdraw from his classes with minimal repercussions. In this instance, I put the COM 100 instructor in contact with the medical withdrawal advisor.

My role is this study was also as an instructor in the program. I taught one one-credit course for LEAD students – The LEAD Project I (ASU 150). The primary objectives of these courses was to help students develop their skills in personal responsibility, growth mindset thinking, teamwork, and general success strategies.

Setting

This study took place at a large public research university in the southwestern United States. With the goal of making higher education accessible, the institution admits students with varying levels of readiness to perform at the college level. In the coming sections I discuss details of the local context, participants, and the innovation.

Local Context

Arizona State University is home to over 90,000 students in the Phoenix area and online. ASU includes four physical campus locations as well as an online school. The mission of the university is to increase access to education, thus priding itself on those it

includes rather than those it excludes. U.S. News and World Report recently ranked the institution the number one school for innovation for the third year in a row. Additionally, it was ranked the number four school for international students (White, 2016). As a state supported institution, emphasis is placed on improving higher education in Arizona. However, the institution is also making strides to improve access to higher education at a global level. ASU collaborates with Starbucks to offer online courses free to Starbucks employees, and with EdX to launch the Global Freshmen Academy (GFA). GFA includes online first-year courses for anyone with internet access. Although the coursework can be completed free of charge, students have the option of purchasing course credit through ASU at a rate comparable to local community colleges.

Just as the university is unique, so are its students. During the Fall 2016 term, 81.8% of students were undergraduates (N = 58,848) and 18.2% were graduate students, (N = 13,098) (Arizona State University, 2018). Undergraduate students were 46.5% female, 49.5% minorities, and only 50.5% were Caucasian. The first-time freshmen cohort consisted of 10,415 students of whom 6,164 were from Arizona high schools (59%). This student group had an average high school GPA of 3.49 and average SAT and ACT scores of 1136 and 25.0 respectively. The previous freshmen cohort, Fall 2015, was retained at a rate of 85.7% (Arizona State University, 2018).

The financial need of students is high. According to the ASU Foundation, 47% of Arizona children are considered low-income with 25% having annual incomes lower than $25,000 (“Financial aid facts”, n.d.). University tuition and fees have radically increased since 2007, by as much as 90% (“Financial aid facts”). Although tuition is lower than peer institutions, the high financial need of Arizona students still makes

affording college challenging for many. It is common for ASU students to be employed either full- or part-time while also being a full-time student.

Innovation

The problem of practice in the study results from previous research cycles and other studies. Both of which suggest instructor-student rapport and peer rapport may mediate student achievement.

Problem of Practice

The purpose of this action research study was to examine the role of rapport in student success at Arizona State University (ASU). The LEAD program supports students entering college who the university has identified as potentially underprepared. Initial research cycles for this program indicated students most enjoyed the relationships they built with their classmates and instructors. Previous cycle results also indicated that students' performance in LEAD classes was higher than students in the same courses, and with the same instructor, but who were not participating in the LEAD program. Both previous research cycles and additional studies show instructor-student rapport may mediate student achievement (Frisby & Housley, 2015; Frisby & Martin, 2010; Frisby & Myers, 2008; Wilson, Ryan, & Pugh, 2010). For further details regarding previous research cycles, please see Chapter 2. This context creates the need for innovative programs that support student success.

About the LEAD Project

One new program is The LEAD Program (LEAD). LEAD is a cohort-based program for students during their first year at the university. Students invited to participate in the program are those with low ACT/SAT scores or low high school GPAs.

Students from this group are more likely to have high financial need and be first-generation college students. This action research study assessed the role of rapport on success for students participating in The LEAD Project during the Fall 2017 term.

Student experience. The LEAD Project provides potentially under-prepared, first-year students with a cohort learning experience across three courses in the same term. I describe each course in more detail in the sections below. Program administrators strategically schedule LEAD courses to enable students to attend one class together each weekday, which results in quick rapport building among students and instructors. LEAD creates small communities for students where they build relationships with each other and their instructors. Both student rapport and instructor collaboration set the stage for robust student academic skill development.

LEAD curriculum gives students opportunities to gain experience in the skills employers most desire. Course learning outcomes remain unchanged, but the path to reach those outcomes is unique. Curriculum design ensures students practice leadership, teamwork, verbal and written communication, personal responsibility, and critical thinking. Thanks to the rapport developed among students, even the quietest student feels comfortable. This comfort with each other helps students to feel safe asking questions, contributing to discussions, and even public speaking. The semester project for fall 2017 is a student-led debate. Students work together to define issues, collect evidence for both sides of those issues, and then participate in multiple debates in roles of the affirmative, opposed, and as judges. The union of relationships and skill building results in increased rates of academic success. Please see previous cycle's results later in Chapter 3. These

experiences spread across three courses: (1) Critical Reading and Thinking, (2) Introduction to Human Communication, and (3) The LEAD Project I.

Critical reading and thinking course (UNI 110). This three-credit course gives students the opportunity to practice information literacy. Students begin the semester with an assignment where they define a personal opinion and describe where and when they formed that opinion. Students then learn about library resources, how to search for peer-reviewed journal articles, and criteria for credible sources. They use these skills throughout the remainder of the semester as they write two research papers, and eventually participate in three in-class debates. These skills intertwine with those presented in their Introduction to Human Communication course.

Introduction to human communication course (COM 100). Students discuss and practice a wide range of communication topics in this three-credit course. Some of these topics include intercultural communication, interpersonal and relational communication, and public speaking. This curriculum requires students to complete weekly reading reviews and two multiple-choice exams. During class, students practice speaking in small groups and presenting to the whole class. Both UNI 110 and COM 100 learning outcomes also intertwine with the last LEAD course.

The LEAD project I (ASU 150). The primary objective of this one-credit course is to help students develop self-awareness and a sense of personal responsibility. Students write journal entries each week. Journal prompt themes include personal strengths, habits, motivations, and plans for change. Students also complete a team project that emphasizes the importance of the teamwork process rather than just the final product.

Instructor experience. The instructor team met weekly for one hour. Instructors spent this time collaborating on curriculum and strategizing how to best support students. The instructors worked together to offer project-based learning where the activities in each individual course all supported successful completion of the semester project.

Instructors were sometimes trained by their department for their core curriculum, but not necessarily pedagogy or student success strategies. It was essential that this group of instructors understand the goals of the LEAD program, the special needs of this student group, and build trusting relationships with their fellow cohort instructors. Instructor training was implemented during July and August 2017. Approximately 40 instructors, from multiple academic units, were included in this study. These instructors participated in both online and in-person trainings.

Online training occurred during the months of July and August 2017. Online training consisted of four modules each exploring a new question. Module questions are (1) Who are first-generation students? (2) What does it mean to be smart? (3) What motivates human behavior and (4) How can you get students to learn what you want them to? Online modules include pre and post reflections, readings, and videos. Each module should take about two hours to complete.

In-person training occurred on Friday August 11th, the week prior to the start of class. Training topics included LEAD courses and their learning outcomes, team building activities, and rapport-building strategies.

Fidelity of Implementation

As the program manager and researcher, I aimed to implement the innovation as planned. However, it is possible implementation may not occur fully to which it was

planned due to individual instructor differences in adoption and fidelity. Over 30 individual instructors implemented the program innovation. I and other returning LEAD instructors supported new instructors through personal communication and one-hour weekly meetings. Though much support was available, instructors may have different interpretations of the expectations for the student program and may choose to implement program goals in unique ways. All students had the same course schedule structure and the same learning outcomes, but had different experiences depending on their specific instructors thus some variation likely occurred across the innovation.

Data Collection Methods

Data collection used a concurrent mixed-methods action research methodology and multiple individual methods including questionnaires, digital interviews, and institutional data from July 2017 to December 2017. Participants included first-year students involved in the LEAD program at Arizona State University Tempe campus. The following sections include details of the research design, instruments, and procedures for data collection.

Participants

This study utilized purposeful sampling. This strategy is common in qualitative action research studies. Purposeful sampling occurs when selecting participants based on a certain criteria such as experience in a certain program (Ivankova, 2015). Participants included students involved with LEAD. Though LEAD exists at each ASU campus, this study limited participation to the Tempe campus. I chose to exclude the other campuses from this study due to variations in coursework, class size, and environmental factors that could affect student perceptions.

Student participants included approximately 400 first-year students. Demographic data collection included college, residency status, gender, and ethnicity. These students were from specific colleges including business, liberal arts, and university college. All participants were classified as potentially under-prepared due to low scores on standardized tests and/or low secondary school GPA. Of this group, many resident participants chose to live at home rather than on-campus while attending the university. Further, many of these students have important roles with their family such as taking care of younger siblings or being responsible for some of the household's income.

Research Design

This study utilized a concurrent mixed-method action research design. I utilized both quantitative and qualitative instruments. Measures used with student participants included a questionnaire, and two digital interviews. An alignment between the research questions and data collection methods is available in Table 3.1.

Table 3.1: Alignment of Instruments and Research Questions

Research Questions	Questionnaire	Interview 1	Interview 2	Institutional Data
1a. How does instructor-student rapport mediate student success?		✓		
1b. To what extent does instructor-student rapport mediate student success?	✓			✓
2a. How does peer rapport mediate student success?			✓	
2b. To what extent does peer rapport mediate student success?	✓			✓

Instruments

Qualitative measures included two digital interviews. The primary quantitative instrument was a questionnaire. Additional quantitative data was included through institutional data on student demographics, academic success, and university persistence. I discuss details for each of these instruments below.

Figure 3.1: Instrument Timeline

Digital interviews. Course curricula included weekly reflective journal entries. I provided students a new prompt each week for a total of 10-12 entries over the duration of the semester. Prompts were designed to help students reflect, become more self-aware, and ideate positive changes in their lives. Journal entries are graded on depth of thought and sufficient detail inclusion, but do not have a length requirement and are not graded for grammar. An example of a grading rubric is available in Appendix C.

Two of the semester writing reflections (e.g., student journal entries) served as instruments, digital interviews, for this study [Table 3.2]. I piloted both prompts during the fall 2016 term and have adjusted them based on the previous research cycle. Though students received grades on each entry, their grade did not reflect their choice to participate in this part of the study.

Table 3.2: Digital Interview Questions

Theme	Prompt
Instructor Rapport	In what ways are your ASU professors influencing your learning this semester? Which professor do you feel like you are learning from the most? What do you enjoy about their teaching style? What do you enjoy about the environment of the class?
Student Rapport	In what ways have your relationships with your classmates influenced your learning this semester? Who has played a significant role either positively or negatively? In what ways have you positively or negatively impacted the success of those around you? What changes (if any) do you hope to make with your friendships in future semesters?

I used purposive sampling for this part of the study. Only students in my section of ASU 150 were invited to participate. All students in my class were verbally invited to participate in the digital interviews. Students were provided consent forms specific to this part of the study.

Entry analysis included deductive coding, theme generation, and eventual member checking. I describe further analysis details in a following section.

Questionnaire. Participants completed the questionnaire during the last week of classes in November 2017. The questionnaire included four scores for each of the three classes. For example, students answered questions specific to COM 100 regarding their (1) perceptions of their teacher, (2) engagement, (3) autonomy-support, and (4) learning. The student questionnaire constructs surround rapport and perceived learning. Rapport is split into two categories including instructor-student rapport and peer rapport.

Instructor-student rapport. The student questionnaire included multiple sub-scales aimed at measuring instructor-student rapport. The first sub-scale measured perceived autonomy support. The additional two sub-scales come from the work of Wilson and Ryan (2013). These sub-scales include student perceptions of their connection to their instructor, and their teachers. In this study, I refer to refer to these sub-scales as *Connection to Teacher* and *Perceptions of Teacher*. These sub-constructs come from the work of Wilson and Ryan (2010, 2013) in their Professor-Student Rapport Scale (PSRS).

Autonomy support. This sub-scale comes from the Learning Climate Questionnaire and has been used in previous research cycles for this study (Black & Deci, 2000). The full list of items is available below in Table 3.6. Autonomy-supportive behavior will be measured through the abbreviated version of the Learning Climate Questionnaire (LCQ). The LCQ seeks to measure autonomy-support, which is described as a student's perception of their instructor's ability to relate to students, give students choices about their learning, and increase the student's subject knowledge. Further detail regarding autonomy-supportive teaching is available in Chapter 2. This measure was used as an alternate measure for rapport and as a measure of concurrent validity.

Again, items utilized a six-point Likert-scale ranging from "strongly disagree" to "strong agree" [Table 3.3]. Example items include, "I feel that my COM 100 instructor provides me choices and options." and "My COM 100 instructor conveyed confidence in my ability to do well in the course."

Table 3.3: Perceptions of Autonomy-Support Items

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I feel that my COM 100 instructor provides me choices and options.	1	2	3	4	5	6
I feel understood by my COM 100 instructor.	1	2	3	4	5	6
My COM 100 instructor conveyed confidence in my ability to do well in the course.	1	2	3	4	5	6
My COM 100 instructor encouraged me to ask questions.	1	2	3	4	5	6
My COM 100 instructor listens to how I would like to do things.	1	2	3	4	5	6
My COM 100 instructor tries to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6
I would recommend my COM 100 instructor to a friend.	1	2	3	4	5	6

Connection to teacher. Similar to the perceptions of teacher sub-scale, the connection to teacher sub-scale also used a six-point Likert-scale ranging from "strongly disagree" to "strongly agree." This sub-scale included six individual items. Example items include, "My professor encourages questions and comments from students," and "I really like to come to class." A full list of items is available below in Table 3.4.

Table 3.4: Connection to Teacher Questionnaire Items

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
My professor encourages questions and comments from students.	1	2	3	4	5	6
My professor is confident.	1	2	3	4	5	6
My professor enjoys his/her job.	1	2	3	4	5	6
My professor cares about students.	1	2	3	4	5	6
My professor is enthusiastic.	1	2	3	4	5	6
My professor is a role model.	1	2	3	4	5	6

Perceptions of teacher. This 9-item sub-scale measuring perceptions of teacher utilized a 6-point Likert-scale where ratings include 1=strongly disagree, 2=disagree, 3=slightly disagree, 4=slightly agree, 5=agree, and 6=strongly agree. Though previous studies used a five-point Likert-scale, this study used a six-point Likert-scale for increased variance and to be consistent across all subscales. The neutral option has been removed to encourage participants to select a directional position. Items included statements such as "My professor is compassionate," and "My professor is reliable." The full sub-scale and items are available in Table 3.5 below.

Table 3.5: Perceptions of Teacher Questionnaire Items

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
My professor is compassionate.	1	2	3	4	5	6
My professor is confident.	1	2	3	4	5	6
My professor enjoys his/her job.	1	2	3	4	5	6
My professor cares about students.	1	2	3	4	5	6
My professor is enthusiastic.	1	2	3	4	5	6
My professor is a role model.	1	2	3	4	5	6
My professor wants to make a difference.	1	2	3	4	5	6
My professor is receptive.	1	2	3	4	5	6
My professor is reliable.	1	2	3	4	5	6

Peer rapport. This sub-scale seeks to measure student perceptions of rapport with their LEAD classmates. Within Self-Determination Theory research, existing scales only measure instructor-student relatedness, but not peer relatedness. To further the body of research exploring relatedness and rapport, I reference the work of rapport researchers when building the peer rapport sub-scale. These items come from previous rapport research each with internal reliability above 0.9 (Frisby & Martin, 2010; Grimler & Gwinner, 2008, Wilson, Ryan, & Pugh, 2010). These researchers utilized a seven-point Likert-scale ranging from 1=strongly disagree to 7=strongly agree. The current study

utilized a six-point Likert-scale both to maintain consistent question structure and to eliminate a neutral response thus encouraging participants to select a directional position. Anchor descriptions remain the same from previous studies where the scale range was "strongly disagree" to "strongly agree."

I chose to alter scale items slightly for this study so students could more easily understand the items and to adjust for findings from a previous research cycle. Original items were not worded in a way that is organic to student dialogue and thus can be challenging to understand. For example, a previous scale item read, "In thinking about this relationship, I have a harmonious relationship with my classmates." Instead, I adjusted the item to read, "Most of the time my classmates are respectful of me as an individual." Similarly, a previous scale item read, "My classmates relate well to me," but I adjusted it to read, "I have things in common with my classmates." An additional change includes the removal of one item from the original scale. Results from a previous research cycle indicated items loaded onto one factor, and had high internal reliability. The original rapport scale utilized eleven items, but analysis from a previous research cycle indicated the peer rapport sub-scale should only include ten of the eleven items. The list of scale items for this study is available in Table 3.6.

Table 3.6: Peer rapport perceptions

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I am comfortable asking my classmates for help with coursework.	1	2	3	4	5	6
I know many of my classmate's names.	1	2	3	4	5	6
I have things in common with my classmates.	1	2	3	4	5	6
Most of the time my classmates are respectful of me as an individual.	1	2	3	4	5	6
I am friends with some of my classmates.	1	2	3	4	5	6
In LEAD classes, I feel like I am part of a group.	1	2	3	4	5	6
I look forward to seeing my classmates.	1	2	3	4	5	6
There are students in this class that I care about.	1	2	3	4	5	6

Perceptions of learning. The final scale measures students' perceived growth for course learning outcomes. This section of the questionnaire asks students to reflect on their perceived amount of knowledge gained. Sub-scales exist for each of the three courses (e.g., COM 100, UNI 110, and ASU 150). Each sub-scale includes eight-items (i.e., learning outcomes) and utilized a five-point Likert-scale where 1=Nothing, 2=Very Little, 3=Some, 4=Quite a Bit, and 5=A Great Deal. The prompt question reads, "How much do you feel like you learned about each of the following topics?" The sub-scale specific to COM 100 is listed in Table 3.7.

Table 3.7: Student Learning Perceptions Scale for Introduction to Human Communication

	Nothing	Very Little	Some	Quite a Bit	A Great Deal
How culture influences communication	1	2	3	4	5
How to perform well in a public speaking situation	1	2	3	4	5
How different channels effect what meaning is made	1	2	3	4	5
The difference between verbal and nonverbal communication	1	2	3	4	5
How nonverbals effect how I am perceived as a communicator	1	2	3	4	5
How identities reflect and inform communication styles	1	2	3	4	5
How to be an effective listener	1	2	3	4	5
How to be an effective communicator	1	2	3	4	5

Instructors in a LEAD class will administer the student questionnaire during the final week of the term. Students who wish not to participate in the study, are still encouraged to complete the questionnaire for program evaluation purposes. Student grades were not affected by their choice to participate in this part of the study. The full questionnaire is available in Appendix D.

Institutional data. With the IRB's approval, participants provided the last four digits of their university ID number on their questionnaire. This information allowed me to pair participant's survey responses with their corresponding institutional data. Institutional data was used to identify participant demographics (e.g., gender, residency status, and ethnicity) and success measures. Student success measures included grades for

each Fall 2017 LEAD course (e.g., COM 100, UNI 110, and ASU 150), overall semester grade point average, and if the student continued their enrollment at the university in the following term as of the second week of classes, approximately January 17th, 2018. Course grades were coded as 4=A, 3=B, 2=C, 1=D, and 0=E. Continued university enrollment will be coded as 1 for continued enrollment and 0 for discontinued enrollment.

Procedures and Timeline

The full timeline for data collection procedures is available below in Table 3.8. Further details are included in the following sections.

Table 3.8: Data Collection Procedures Timeline

Timeframe	Actions	Procedures
June – July	Prepare rapport training	Review literature for key rapport-building behaviors. Develop training learning outcomes. Develop training activities.
August	Implement instructor training	Instructors will attend a two-day training program to prepare for working with LEAD.
October	Digital Interview #1	Inform students about the study in class. Distribute consent forms in class. Collect student interview answers.
November	Digital Interview #2	Collect student interview answers.
November	Student Questionnaire	Distribute questionnaires to instructors. Train instructors on questionnaire distribution process. Collect completed questionnaires.
December	Record questionnaire data	Input questionnaire data to SPSS.
January	Collect institutional data	Pull participant's data relating to demographics and course performance.

Recruitment

After obtaining IRB approval, participants were invited to join the study. Student recruitment in the qualitative part of the study occurred in October 2017, and again in November 2017 for participation in the quantitative part of the study. Interview participants were invited in-person in my ASU 150 class. Questionnaire participants were invited in-person by their respective ASU 150 instructors. The first page of the questionnaire packet included the recruitment and consent form.

Data Analysis

I used multiple analysis strategies to review and interpret the collected data. Different strategies were used to understand different types of data collected all with the ultimate goal of triangulation across methods and participants. Additional methods to ensure trustworthiness included peer review and member checks.

Analysis Design

Analysis was conducted for each data source including interview transcripts, and questionnaires combined with institutional data.

Qualitative data analysis. Interview transcripts were analyzed by using deductive coding techniques. My process included multiple reviews of the files and then the use of HyperResearch for the coding process. After coding, I reviewed codes and quotations to develop themes. To ensure the trustworthiness of the data, themes were shared with two student participants to confirm that my findings were aligned with their perceptions. Results were also shared with a peer debriefer.

Quantitative data analysis. I analyzed questionnaire and institutional data using SPSS. Instructor-student rapport sub-scale scores for each of the three fall 2017 LEAD courses were generated for autonomy-supportive teaching, connection to teacher, and perceptions of teacher. These sub-scales explore student perceptions of their instructors. Additionally, a peer rapport score was generated to explore student perceptions of each other. Both instructor-student and peer rapport measures are necessary to understand the role of relatedness in student success. Each construct was assessed for internal consistency using Cronbach's α.

Construct scores were compared to student outcomes including perceptions of learning and course performance. To analyze the role of rapport I used several statistical tests including descriptive and inferential statistics. Inferential tests included correlations and regression modeling. These metrics determined the relationships between rapport and student outcomes. Later tests will determine, if and, the extent to which instructor-student rapport and/or peer rapport mediates student outcomes.

Procedure and Timeline

The procedures of analysis will include reading through qualitative data and eventual theme generation, statistical analysis of quantitative data, and eventual triangulation between the overall findings from each data source. The full timeline for data analysis procedures is available below in Table 3.9.

Table 3.9: Data Analysis Procedures and Timeline

Time frame	Actions	Procedures
October	Analyze interview #1	Download and combine participant files. Read through all entries two times. Code entries using HyperResearch. Re-read to confirm coding. Develop themes. Develop inferences. Confirm themes and inferences with 3 participants.
November	Analyze interview #2	Download and combine participant files. Read through all entries two times. Code entries using HyperResearch. Re-read to confirm coding. Develop themes. Develop inferences. Confirm themes and inferences with 3 participants.
January	Analyze student questionnaire and institutional data	Match questionnaire and institutional data to individual participants. Add data file to SPSS. Clean-up data for analysis. Analyze data using SPSS. Create construct scores. Determine reliability measures.
January - February	Analyze collective findings	Review themes developed from each data source. Look for overarching patterns and/or differences. Generate overall conclusions.

This timeline was used as a guide to ensure study completion in a timely manner.

Reliability and Validity

Potential threats to validity include instrumentation and nonequivalence. Instrumentation can be a threat to validity when a study changes the measurement instrument or allows raters to see which group the participant is in. To minimize this

threat, instruments were piloted prior to the study. Nonequivalence can be a threat when participant groups are selected that have other factors outside the study also influencing their performance (e.g., teacher, class placement). In this study, the impact of certain instructors may influence participant performance, but statistical analysis can control that variable if necessary.

CHAPTER 4

RESULTS, ANALYSIS, AND FINDINGS

The fourth chapter includes reports of study results and findings. The chapter begins by describing the qualitative and quantitative findings gathered in this study. Qualitative methods consisted of two digital interviews, and quantitative methods included a questionnaire. Late in the chapter, I explore the ways in which the data answers the research questions. I describe the answers to the research questions as well as how the mixed method approach leads to triangulation of the data and conclude with answers to the research questions.

Qualitative Results

Qualitative instruments sought to answer two of the study's research questions: (1a.) How does instructor-student rapport mediate student success? (2a.) How does student-student rapport mediate student success? These research questions are meant to capture student experiences across their course work.

Interview Participants

Although only the students in my ASU 150 section were invited to participate in the qualitative part of the study, students shared their experiences from many classes, not just ASU 150. ASU 150 is a one-credit course designed to give students experience in personal responsibility, self-awareness, teamwork, and other skills. Of the 33 students in class who were invited to attend, 19 agreed to participate in this part of the study. Of the 19 who agreed to participate, only 14 had completed both digital interviews. Participants were primarily business students, with one exception a student who was studying sustainability. Nine of the participants (69%) were male, and four were female (31%).

Half of the participants were Hispanic, four were White, and the remaining three participants were Black, Native American, and two or more races. This unequal split is representative of the total students invited to participate as the class consisted of more males than females. All interview participants were first-time freshmen.

Table 4.1: Interview Participant Table

Pseudonym	Gender	Residency	Ethnicity
Jose	Male	Non-Resident	White
Louis	Male	Non-Resident	Hispanic
Gerald	Male	Arizona Resident	Two or more races
Catherine	Female	Arizona Resident	Hispanic
Bronson	Male	Arizona Resident	Hispanic
Martina	Female	Arizona Resident	Hispanic
Nicole	Female	Non-Resident	Black
Jack	Male	Non-Resident	White
Jacob	Male	Arizona Resident	White
Kyle	Male	Arizona Resident	White
Tamara	Female	Non-Resident	Native American
Liam	Male	Arizona Resident	Hispanic
Delilah	Female	Non-Resident	Hispanic
David	Male	Arizona Resident	Hispanic

Interview #1 Results

The first digital interview was designed to better understand student perceptions relating to the first research question, (1a) How does instructor-student rapport mediate student success? Interview questions consisted of the following:

How are your classes going so far this semester?

Which class(es) are you the most motivated to attend/do the work for?

Which class(es) are you lacking the motivation to put time/effort into?

For each of these classes, what is your relationship like with your professor?

What are your relationships like with your classmates?

To what extent does your level of motivation connected to how much you like the professor and/or your classmates?

Codes and Themes. Data were first coded into two over-arching categories: motivated, and unmotivated. Sub-codes emerging from the motivated data included course/topic, instructor, peers, and self. These codes also emerged from the motivated data. However, two additional codes also emerged, level of difficulty, and understanding of purpose.

Motivated Codes. The motivated code occurred 34 times. These items were then coded a second time to better understand the source of motivation. Motivation sub-codes included (1) course/topic, (2) instructor, (3) peers, and (4) self.

Table 4.2: Motivated Sub-Code Frequencies and Examples

Sub-Code	Frequency	Example
Course/Topic	12	ASU150 is my favorite course because of how much it has helped me develop and prepare myself for success. - David
Instructor	19	I have found that I have more motivation towards my communication class than any other. I believe that a big factor in this is that I find Dr. Jordan to be an exceptional teacher who makes coming to class enjoyable and instills in her students a genuine desire to learn the course material. - Jose
Peers	11	In all of my classes I have good relationships with at least half of my classmates. In all of my class four of them I pretty much the same classmates in these classes and it helps when I need help with homework or a need help studying for a test. There are some of my classmates that I am also friends with outside of class which helps because coming into college I didn't know anyone at ASU. - Martina
Self	10	Coming into college I was concerned with how I would handle the work load and I feel proud of myself because compared to high school, I am doing great. I have gotten over a lot of bad work habits when it comes to school because I now realize that college is the real deal and if I want to have a successful life, I need to do what needs to be done. - David

Unmotivated codes. The unmotivated code occurred 26 times. Similar sub-codes emerged in this group, but with the addition of level of difficulty and understanding the purpose of the course.

Table 4.3: Unmotivated Sub-Code Frequencies and Examples

Sub-Code	Frequency	Example
Course/Topic	3	The classes aren't terrible, they're just not in my interest. - Catherine
Instructor	10	Now I have an F and I have to make it up by doing a lot better on the other exams. I have no relationship with the professor, and that could be why I don't feel the need to try as hard in his class. - Jacob
Level of Difficulty	11	Another class that lacks effort in is my English class. It is a class that moves very slow and gets super boring very easily. It hard for me to stay focused when were doing nothing all the time. Every assignment is so stretched out that it almost like I never do work for the class. Its and easy A in my opinion witch has its perks but is very disengaging. - Jack
Peers	8	There is no relationship between other students and myself or any students with each other. The class is very quiet and if you do speak to someone it's the person next to you asking about information about the class. - Bronson
Self	8	There is only one class that I don't have a good grade in and that is Introduction to Philosophy and that is because I'm lacking the motivation. Therefore, I am not putting in the work I need to do well on the exams. - Jacob
Understand Purpose	8	I do most of the work in them and try my best, but I just don't find them interesting or relevant to my life. It's hard finding the actual purpose of the class. - Catherine

Interview #2 Results

The second digital interview was designed to better understand student perceptions relating to the second research question, (2a) How does peer rapport mediate student success? Interview questions consisted of the following:

> In what ways have your personal relationships influenced your learning this semester?
>
> Who has played a significant role either positively or negatively?
>
> In what ways have you positively or negatively impacted the success of those around you?
>
> What changes (if any) do you hope to make with your personal relationships in future semesters?

Similar to the first interview, questions were meant to capture student experiences across their coursework. Questions were not specific to ASU 150.

Codes and Themes. Within this dataset, various types of relationships emerged as the overarching theme. Types of relationships were coded as classmates, family, friends, and other.

Table 4.4: Peer Rapport Sub-Code Frequencies and Examples

Sub-Code	Frequency	Example
Classmates	7	The personal relationships that I have made this semester have impacted my learning much more than I had originally anticipated. Most of my academic relationships have come from my cohort in my LEAD classes simply because we have mostly all the same classes and go through similar academic experiences. My friendships have impacted my academic success mostly by creating study groups which are very helpful especially in the days leading up to a quiz, test, or project. The helpful insight that I have gained from my friends have introduced me to new ideas that I have never before given thought to. - Jose
Effects of Relationships	6	When other people can see my hard work, I feel like what I am doing isn't going unnoticed. I really enjoy that and everyone is always asking me what is due, what should we do. Which I admit sometimes can be annoying, but I enjoy helping me try to get a clearer understanding for the work their doing. I feel like the people I have met this semester have influenced me to keep doing what I have always done. - Delilah
Family	2	This semester, I have become closer with my family, specifically my mom and my sister. I think that school had a big influence on that as well. They helped me through the process of starting my classes, coming up with ideas to complete an assignment, and just generally helping keep myself in the right path and supporting all of my decisions. By getting closer to my family, I think that they really opened up my eyes by always telling me to do something I love to do, don't get into something just for the money. - Catherine
Friends	6	This first semester the personal relationships I have made have made thing easier to adjust. Having someone who you can count on as a friend as we all go through this journey of adjusting to college is very nice. Chances are if your going through it most of the other kids here are too. This makes it easy to communicate and get out what you've been holding in to make adjusting go much smoother. - Jack
Other	7	For a few weeks, I have definitely been stressed but my dog has played the most significant role in the best way. Coming home and hanging out with my dog Anakin is probably the best part of my day. Anakin is so loyal, happy, and such a good dog. My sister says his heart is only big enough for me. - David

Qualitative Data Trustworthiness

Multiple measures were taken to ensure the trustworthiness of the data and interpretations. Major themes were sent via email to two student participants. Participants were asked to share their level of agreement with the findings. Both participants agreed that the results aligned with their personal experiences. Additionally, qualitative results align with the quantitative results which supports data triangulation.

Quantitative Results

Quantitative data were gathered via a questionnaire consisting of multiple sub-scales. Rapport sub-scales include peer rapport, autonomy support, engagement, and perceptions of teacher. Additionally, sub-scales were used to measure students' perceived learning. All items utilized a Likert-scale.

Survey Participants

During the last week of classes, ASU 150 instructors invited their students to participate in the study by completing a paper questionnaire. Of the 587 students enrolled in the program being studied, 448 chose to participate, and 405 are included in results. Forty-three participants were excluded due to incomplete questionnaires or insufficient information to connect their questionnaire data with their institutional data (e.g., course grades).

Survey participants consisted of 38% non-residents (n = 153) and 62% Arizona residents (n = 252). Gender was close to evenly split where 46% of participants were female (n = 188) and 54% were male (n = 217). Participants consisted of 48.1% White (n = 195), 30.1% Hispanic (n = 122), 8.6% Black (n = 35), 6.9% Asian (n = 28), 4.9 % two or more ethnicities (n = 20), and 1.2 % Native American (n = 5).

Instructor-Student Rapport

Three scales were included in the student survey to measure instructor-student rapport. These sub-scales include autonomy-support, classroom engagement, and perceptions of teachers. Each sub-scale was listed for the three courses students completed together. Participants were asked to share their perceptions of three of their instructors: (1) Introduction to Human Communication, (2) Critical Reading and Thinking, and (3) The LEAD Project I. Thus, results exist for a total of nine instructor-student rapport scales. Internal reliability for each sub-scale was high. Descriptive statistics for instructor-student rapport sub-scales are available in Table 4.5.

Table 4.5: Instructor-Student Rapport Sub-Scale Descriptive Statistics

Sub-Scale	# Items	N	Mean	Std. Dev.	α
Autonomy Support					
COM 100	6	400	4.2675	1.58003	0.978
UNI 110	6	396	5.0905	.89436	0.951
ASU 150	6	401	5.0632	.94599	0.961
Student Engagement					
COM 100	6	400	4.3204	1.64718	0.974
UNI 110	6	399	5.0919	.99133	0.952
ASU 150	6	399	4.9795	1.07990	0.941
Perceptions of Teacher					
COM 100	9	401	4.6825	1.38369	0.976
UNI 110	9	400	5.3633	.76966	0.965
ASU 150	9	402	5.3496	.82120	0.966
Perceived Learning					
COM 100	8	398	3.7195	1.21418	0.978
UNI 110	8	394	4.4518	.66454	0.946
ASU 150	8	401	4.2768	.81843	0.965

Note – Scale ranged from 1 = Strongly Disagree to 6 = Strongly Agree

Autonomy support. The six-item autonomy support scale comes from the work of Black and Deci (2010). Again a six-point Likert-scale was used with values ranging from 1 = Strong Disagree to 6 = Strongly Agree. Descriptive statistics for autonomy support sub-scales are available in Appendix E. The sub-scale was included three times in the questionnaire, once for each of the three courses in the program (i.e., COM 100, UNI 110, and ASU 150). Because the scale is repeated for each course, results are also outlined by course even though the sub-scale is the same.

COM 100. The sub-scale for autonomy support by COM 100 instructors had an internal reliability of $\alpha = 0.978$. Item means have little variation where the highest were 4.36 ($n = 401$, $sd = 1.628$; $n = 404$, $sd = 1.621$) and the lowest mean was 4.13 ($n = 404$, $sd = 1.746$), for a difference of only 0.23. Mean values close to four represent the perception of "Somewhat Agree" Two items shared the highest mean, these items were "My COM 100 instructor conveyed confidence in my ability to do well in the course," and "My COM 100 instructor encouraged me to ask questions."

UNI 110. Internal reliability for autonomy support by UNI 110 instructors was 0.951. Mean values for this sub-scale were all greater than five. Or in other words, represent student perceptions of "Agree." The item with the highest mean value ($M = 5.22$) was "My UNI 110 instructor encouraged me to ask questions," ($n = 399$, $sd = 0.932$). The lowest mean value ($M = 5.00$, $sd = 1.02$) occurred for item, "My UNI 110 instructor provides me choices and options."

ASU 150. This sub-scale yielded similar results to that of UNI 110 where item means were all greater than five (i.e., Agree). Cronbach's α for this sub-scale was 0.961. The item with the highest mean was "My ASU 150 instructor encouraged me to ask questions," (M = 5.17, sd = 0.947). Two items shared the lowest mean of 5.01. These items were "I feel understood by my ASU 150 instructor," and "My ASU 150 instructor tries to understand how I see things before suggesting a new way to do things."

Connection to teacher. This sub-scale included six items and utilized a Likert-scale ranging from 1 = Strongly Disagree to 6 = Strongly Agree. This sub-scale comes from the work of Wilson and Ryan (2010, 2013). Student perceptions of classroom engagement were measured for the same three classes as autonomy support. The sub-scale was also included three times in the questionnaire, once for each of the three courses in the program (i.e., COM 100, UNI 110, and ASU 150). Even though the scale is the same, results are discussed for each individual course. Full details for sub-scale and item descriptive statistics are included in Appendix F.

COM 100. This six-item sub-scale had an internal reliability of α = 0.974. The item with the highest mean was "My COM 100 instructor encourages comments from student," (M = 4.58, sd = 1.529). Contrarily, the item with the lowest mean was "I really like going to my COM 100 class," (M = 4.02, sd = 1.864). All item means were greater than four and less than five (i.e., somewhat agree). The range for items in this sub-scale was 0.56.

UNI 110. Items in this sub-scale had a somewhat smaller range than that of COM 100. Means for items in this scale had a range of 0.44. Internal reliability for this sub-scale was $\alpha = 0.952$. The item with the highest mean ($M = 5.32$, $sd = 0.846$) was "My UNI 110 instructor encourages comments from students." The item with the lowest mean was "I really like going to my UNI 110 class," ($M = 4.88$, $sd = 1.285$).

ASU 150. This sub-scale had the lowest internal reliability of the classroom engagement sub-scales, where Cronbach's Alpha was 0.941. The range between means was 0.58. The highest and lowest mean values mirrored that of COM 100 and UNI 110. The item was the highest mean was "My ASU 150 instructor encourages comments from students," ($M = 5.25$, $sd = 0.900$). The item with the lowest mean was "I really like going to my ASU 150 class," ($M = 4.67$, $sd = 1.509$).

Perceptions of teacher. This sub-scale also comes from the work of Wilson and Ryan (2010, 2013). The perceptions of teacher sub-scale included nine items and asked participants to state their level of agreement for characteristics of their teacher (e.g., compassionate, friendly, and reliable). This sub-scale also used a six-point Likert-scale ranging from 1 = Strongly Disagree to 6 = Strongly Agree. This sub-scale was included three times in the questionnaire, once for each of the three courses in the program (i.e., COM 100, UNI 110, and ASU 150). Because the scale is repeated for each course, results are also outlined by course even though the sub-scale is the same. Item-level descriptive statistics are listed in Appendix G.

COM 100. This nine item sub-scale had an internal reliability of α = 0.976. Item means ranged from 4.28 to 4.94, for a total range of 0.66. These mean values indicate participants either somewhat agreed or agreed to their teacher portraying the item. The item with the highest mean was "is friendly," with a mean of 4.94 and standard deviation of 1.322. The lowest mean was 4.28 which occurred for the item "is a role model," (*sd* = 1.746).

UNI 110. Results for this sub-scale were higher that of COM 100. The internal reliability was slightly higher, with a Cronbach's Alpha of 0.965. Mean item values were all greater than five. The item "is a role model" had the lowest mean (*M* = 5.18, *sd* = 1.008). The item with the highest mean was "Enjoys their job," (*M* = 5.47, *sd* = 0.807).

ASU 150. The results for this sub-scale mirror the results found in the UNI 110 sub-scale. The internal reliability is nearly identical (α = 0.966). All item means were greater than five (i.e., Agree). Two items shared the highest mean of 5.43. These items were "enjoys their job," and "is enthusiastic," (*sd* = 0.833; *sd* = 0.821). Just as in COM 100 and UNI 110, the item with the lowest mean was "is a role model," (*M* = 5.19, *sd* = 1.108).

Peer Rapport

The peer rapport scale included eleven items and utilized a six-point Likert-scale ranging from *Strongly Disagree* = 1 to *Strongly Agree* = 6. The scale had an internal reliability of α = 0.934 where every item contributed to the reliability. Full descriptive statistics for each item in the peer rapport scale are provided in Table 4.6. Five items had mean values above five (i.e., Agree). The item with the highest mean (*m* = 5.07, *n* = 405, *sd* = 1.102) was "I know many of my classmate's names." The remaining six items had

mean values between four and five (i.e., Somewhat Agree or Agree). The item with the lowest mean was "I sometimes study or do coursework with my classmates," with a mean of 4.34 (n = 404, sd = 1.42).

Table 4.6: Peer Rapport Item Descriptive Statistics

Item	N	Mean	Std. Dev.	α if item deleted
I know many of my classmate's names.	405	5.07	1.102	.933
I am friends with some of my classmates.	405	5.06	1.008	.925
Most of the time my classmates are respectful of me as an individual.	404	5.05	.985	.932
I am comfortable asking my classmates for help with coursework.	402	5.05	1.002	.926
I sometimes joke with my classmates	405	5.04	1.100	.928
There are students in this class that I care about.	404	4.75	1.182	.925
I have things in common with my classmates.	404	4.54	1.158	.926
I look forward to seeing my classmates.	404	4.54	1.187	.922
In LEAD classes, I feel like I am part of a group.	405	4.51	1.230	.924
LEAD helped me form relationships with other students.	405	4.47	1.279	.924
I sometimes study or do coursework with my classmates	404	4.34	1.420	.928

Student Learning

Two values were collected to measure student learning; one method was through the questionnaire by asking the amount of perceived learning. The second measure used was through institutional data on the participant's recorded course grades. A summary of descriptive statistics for perceived learning and course grade scores is outlined for each class in Table 4.7.

Table 4.7: Student Learning Descriptive Statistics

Course	Perceived Learning			Course Grade Points		
	n	M	Std. Dev.	n	M	Std. Dev.
COM 100	398	3.72	1.214	405	9.65	2.599
UNI 110	394	4.45	0.665	405	10.34	2.898
ASU 150	401	4.28	0.818	405	3.43	0.983

Perceived learning. The perceived learning measures included three sub-scales (e.g., COM 100, UNI 110, and ASU 150). This sub-scale utilized a Likert-scale where 1 = *Nothing*, 2 = *Very little*, 3 = *Some*, 4 = *Quite a bit,* and 5 = *A great deal*. Items reflected learning outcomes for each course and had been used in previous research cycles to ensure reliability. Each sub-scale included eight course-specific learning outcomes. The questionnaire included learning perceptions for all three courses. Descriptive statistics for items in each course sub-scale are provided in Appendix H.

COM 100. Internal reliability for this sub-scale was high (α = 0.978). All item means were between three and four, representing student learning perceptions of "some" and "quite a bit." The item with the lowest mean was "How culture influences communication," (*M* = 3.53, *sd* = 1.302). The item with the highest mean (*M* = 3. 85, *sd* = 1.257) was, "The difference between verbal and nonverbal communication."

UNI 110. This sub-scale also had a high internal reliability value with a Cronbach's α score of 0.946. Item means had little variance with a range of only 0.14. All item means had a value of four representing the valuation "Quite a bit." The lowest mean occurred for the item "how to think critically," (*M* = 4.38, *sd* = 0.817). The item "How to support an argument with evidence," had the highest mean (*M* = 4.54, *sd* = 0.708).

ASU 150. The final sub-scale for perceived student learning had high internal reliability (α = 0.965). Items in this sub-scale had similar mean values to the items in UNI 110, with all means above four (i.e., Quite a bit). The range between means was very small with a difference of only 0.13. The highest item mean was 4.33 (*sd* = 0.904) for item, "The impact my choices can have on my success." The lowest mean occurred for item "The value of working in groups" which had a mean of 4.20 (*sd* = 0.960).

Course grades. A second measure for student learning included institutional data for participant's final course grades (e.g., COM 100, UNI 110, ASU 150). Course grades are represented numerically through grade points earned. The institutional utilizes a + / - scale for grade point calculations. Final course grades are letters with corresponding numerical values. These grades include A (4.00), B (3.00), C (2.00), D (1.00), and E (0.00). Grades with the additional notation of a plus or minus are adjusted by the value 0.33. For example, a student earning a B+ would result in 3.33 grade points, whereas a student earning an A- would earn 3.66 grade points. Total grade points earned is an institutional measure calculated by multiplying the student's final course grade by the number of course credits. If these students completed a three-credit course, their grade points would be multiplied by three, for total grade points of 9.99 (B+) and 10.98 (A-).

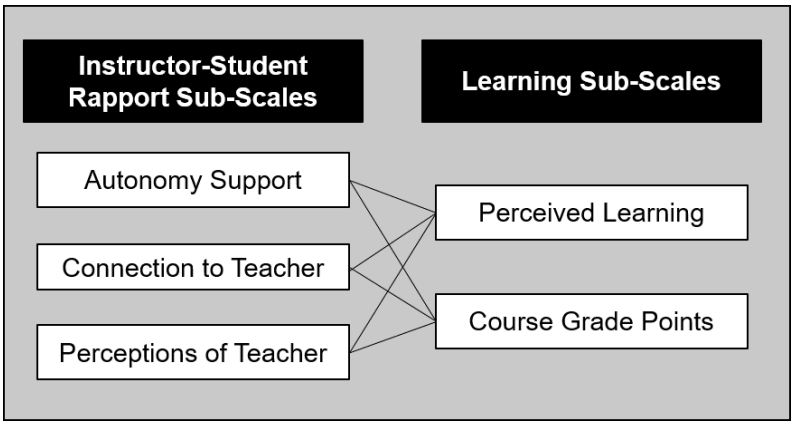
Overall results for grade points in the three courses were calculated for 405 participants. The mean grade for COM 100 was 9.651 (*sd* = 2.599), or in other words a B+ average in a three-credit course. UNI 110 average grade points was slightly higher at 10.338 (*sd* = 2.898), which represents an A- average in a three-credit course. The mean grade for ASU 150 was 3.425 (*sd* = 0.983). This represents a B-average in a one-credit class.

Correlational Analysis

Correlational values were calculated to explore the extent to which rapport sub-scales (i.e., autonomy support, connection to teacher, perceptions of teacher, peer rapport) related to learning sub-scales (i.e., perceived learning, course grade points). The following sections explore relationships between instructor-student rapport with perceived student learning and course grades. For each of the three courses, six

correlations were calculated. Figure 4.1 depicts the correlations described for each course.

Figure 4.1: Correlation Sub-Scale Diagram



Instructor-student rapport. Correlational analysis was conducted to explore the extent to which instructor-student rapport relates to student learning and course grades for each course in the student (e.g., COM 100, UNI 110, and ASU 150). Instructor-student rapport included three sub-scales which each used the same Likert-scale. The three sub-scales were self-determination, connection to teacher, and perceptions of teacher.

COM 100. Results for correlations between the instructor-student sub-scales and perceived learning and course grades for COM 100 all yielded statistically significant relations. Correlations between instructor-student rapport and perceived learning were positive. Contrarily, correlations between instructor-student rapport and course grade were significant, but negatively correlated. Detailed results for these correlations are available in Table 4.8.

Table 4.8: COM 100 Instructor-Student Rapport Sub-Scale Correlations

	Perceived Learning	Course Grade
Autonomy Support	.823**	-.285**
	(.000)	(.000)
	n = 394	*n* = 400
Student Engagement	.819**	-.291**
	(.000)	(.000)
	n = 394	*n* = 400
Perceptions of Teacher	.809**	-.325**
	(.000)	(.000)
	n = 395	*n* = 401

**p < 0.05 **p < 0.001*

UNI 110. The above correlations were also calculated to explore the extent to which instructor-student rapport related to learning in UNI 110. Significant correlations occurred between instructor-student rapport and both perceived learning and course grade, all of which were positive correlations. These results are unlike that of COM 100 instructor-student rapport which negatively correlated to course grade. Details for these correlations are provided in Table 4.9.

Table 4.9: UNI 110 Instructor-Student Rapport Sub-Scale Correlations

	Perceived Learning	Course Grade
Autonomy Support	.597**	.250**
	(.000)	(.000)
	n = 389	*n* = 396
Student Engagement	.540**	.281**
	(.000)	(.000)
	n = 391	*n* = 399
Perceptions of Teacher	.566**	.202**
	(.000)	(.000)
	n = 393	*n* = 400

**p < 0.05 **p < 0.001*

ASU 150. Similar to UNI 110 correlations, ASU 150 instructor-student rapport also significantly related to perceived learning and course grades. Self-determination correlated to course grade ($r = 0.136$, $p < 0.05$). Correlations scores for each pairing are available in Table 4.10.

Table 4.10: ASU 150 Instructor-Student Rapport Sub-Scale Correlations

	Perceived Learning	Course Grade
Autonomy Support	.640**	.136*
	(.000)	(.006)
	n = 399	*n* = 401
Student Engagement	.627**	.152*
	(.000)	(.002)
	n = 397	*n* = 399
Perceptions of Teacher	.634**	.152*
	(.000)	(.002)
	n = 400	*n* = 402

**p < 0.05 **p < 0.001*

Peer rapport. The peer rapport sub-scale included nine items which utilized a Likert-scale. Peer rapport positively correlates with perceived learning in all three courses (e.g., COM 100, UNI 110, and ASU 150). Details for these correlations are available in Table 4.6. All correlations are statistically significant where $p < 0.001$. Peer rapport also positively correlates with course grades, but is only statistically significant for UNI 110 ($r = .130$, $p < 0.001$).

Table 4.11: Peer Rapport Correlations with Learning and Grades

	Perceived Learning	Course Grade
COM 100	.187**	.082
	(.000)	(.101)
	n = 391	*n* = 397
UNI 110	.256**	.130**
	(.000)	(.010)
	n = 387	*n* = 397
ASU 150	.293**	.077
	(.000)	(.125)
	n = 393	*n* = 397

**p < 0.05 **p < 0.001*

Regression Analysis

To further explore the extent to which peer rapport and instructor-student rapport relate to the dependent variables of student learning and course grades, two linear regression models were calculated for each course (COM 100, UNI 110, and ASU 150). Independent variables in each model included peer rapport, self-determination, connection to teacher, and perceptions of teacher.

COM 100. Two linear models were built to explore the extent to which rapport mediates student achievement where the dependent variables were perceived learning and course grade. The first model had an adjusted R^2 of .709 (*SE* = .656). All three instructor-student rapport independent variables were statistically significant predictors of perceived learning. However, peer rapport did not significantly predict COM 100 perceived learning ($\beta = -.709$, $p > .05$).

Table 4.12: Linear Regression Model for COM 100 Perceived Learning

Model	B	SE B	β	t	p
Peer Rapport	-.027	.039	-.020	-.709	.479
Self-Determination	.309	.061	.402	5.037	.000
Student Engagement	.147	.067	.200	2.205	.028
Perceptions of Teacher	.237	.063	.271	3.729	.000
Constant	.806	.200		4.025	.000

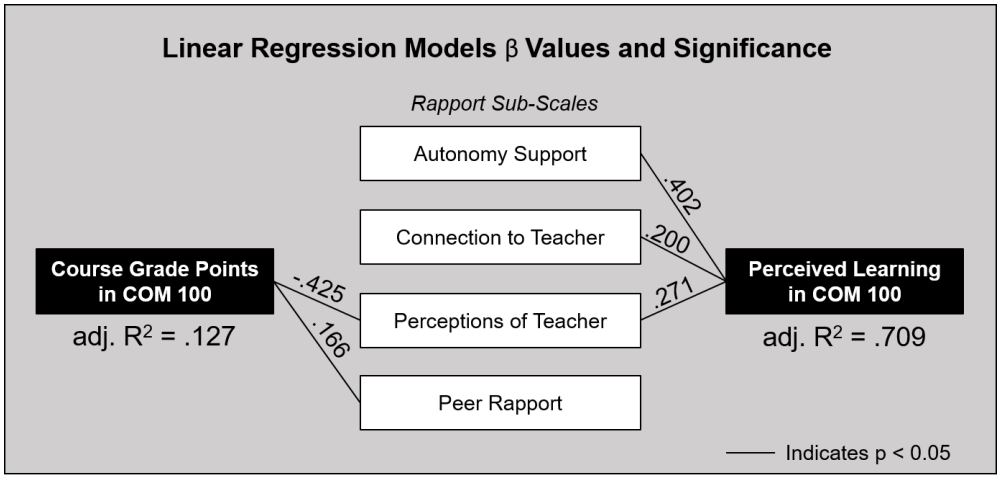
The strength for the second COM 100 model was not as strong as the perceived learning model (R^2 = .127, SE = 2.410). Though the strength of the model was weak, two independent variables significantly predicted COM 100 course grade ($p < .01$). These variables were peer rapport (β = .166) and perceptions of teacher (β = -.425).

Table 4.13: Linear Regression Model for COM 100 Course Grade

Model	B	SE B	β	t	p
Peer Rapport	.476	.142	.166	3.345	.001
Self-Determination	.033	.226	.020	.144	.885
Student Engagement	.062	.244	.040	.254	.800
Perceptions of Teacher	-.790	.233	-.425	-3.393	.001
Constant	10.711	.734		14.587	.000

In looking at the models together, significant predictors occurred for both perceived learning and course grade. A visual for these connections is below in Figure 4.2.

Figure 4.2: Linear Regression Models for COM 100



UNI 110. Similar models as those ran for COM 100 were also calculated for UNI 110. Dependent variables were perceived learning and course grade, where both models had independent variables of peer rapport, self-determination, connection to teacher, and perceptions of teacher. The first model's strength was moderate (adj. R^2 = .384, SE = .520). Two independent variables, self-determination and perceptions of teacher, significantly predicted UNI 110 perceived learning.

Table 4.14: Linear Regression Model for UNI 110 Perceived Learning

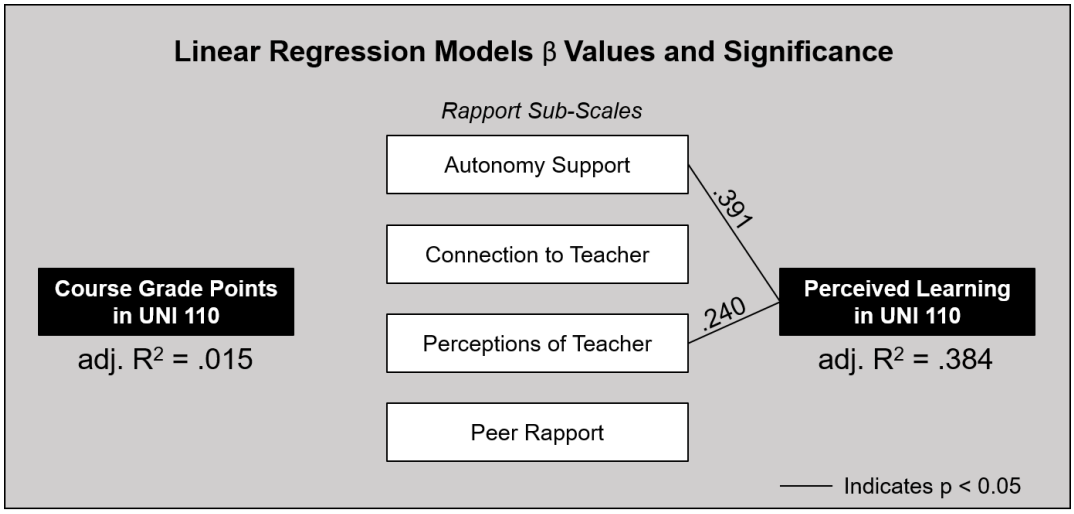
Model	B	SE B	β	t	p
Peer Rapport	.055	.031	.074	1.767	.078
Self-Determination	.292	.066	.391	4.414	.000
Student Engagement	-.004	.061	-.006	-.062	.951
Perceptions of Teacher	.208	.067	.240	3.112	.002
Constant	1.605	.218		7.359	.000

The second model's strength was weak with an adjusted R^2 of .015 (SE = 2.587). None of the independent variables in this model significantly predicted UNI 110 course grade. The shared significant predictors are visualized in Figure 4.3.

Table 4.15: Linear Regression Model for UNI 110 Course Grade

Model	B	SE B	β	t	p
Peer Rapport	.101	.154	.035	.656	.512
Self-Determination	.203	.321	.070	.633	.527
Student Engagement	.376	.299	.144	1.258	.209
Perceptions of Teacher	-.264	.328	-.078	-.803	.422
Constant	7.640	1.067		7.158	.000

Figure 4.3: Regression Models for UNI 110



ASU 150. Lastly, two models were built to explore the effects of rapport on student achievement in ASU 150. One model used student perceived learning as the dependent variable whereas the second model utilized course grade as the dependent variable.

The first model had an adjusted R^2 of 0.447 (SE = 0.601). All four independent variables significantly predicted student perceived learning ($p < .05$).

Table 4.16: Linear Regression Model for ASU 150 Perceived Learning

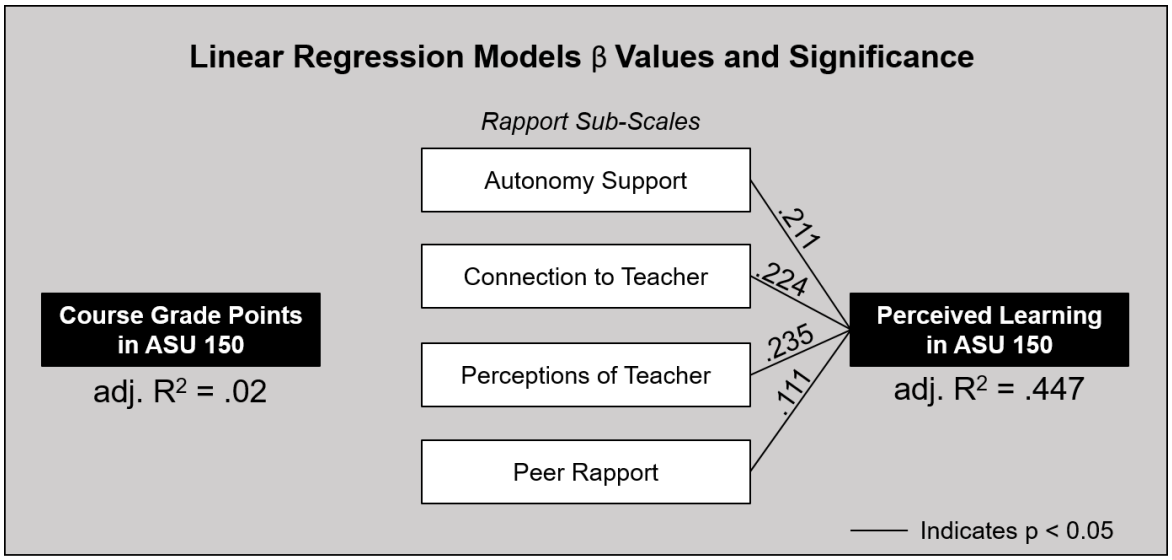
Model	B	SE B	β	t	p
Peer Rapport	.101	.036	.111	2.769	.006
Self-Determination	.181	.070	.211	2.602	.010
Student Engagement	.167	.060	.224	2.777	.006
Perceptions of Teacher	.231	.070	.235	3.287	.001
Constant	.806	.234		3.441	.001

The second linear regression model for ASU 150 used course grade as the dependent variable. This model had an adjusted R^2 value of .02 (SE = .976). None of the independent variable significantly predicted ASU 150 course grade.

Table 4.17: Linear Regression Model for ASU 150 Course Grade

Model	B	SE B	β	t	p
Peer Rapport	.048	.059	.044	.816	.415
Self-Determination	-.084	.112	-.080	-.747	.455
Student Engagement	.149	.098	.164	1.527	.128
Perceptions of Teacher	.081	.113	.068	.714	.476
Constant	2.445	.377		6.484	.000

Figure 4.4: Linear Regression Models for ASU 150



Findings

Research findings are organized by research question. This section first explores the role of instructor-student rapport, and later explores the role of peer rapport.

Instructor-Student Rapport

Initial research questions for this study seek to better understand the role of instructor-student rapport on student's perceived learning and academic achievement. Results included both qualitative and quantitative data. Reports of these results are provided above

Research Question 1a

The first research question for this study asks, "How does instructor-student rapport mediate student success?" Interview results showed multiple sources impacted student motivation. These sources included the course (purpose and difficulty), the instructor, their peers, and themselves. For the purpose of answering this research question, I choose to focus on results specific to instructor-student rapport.

Assertion #1	When instructor-student rapport is high, students are more motivated to do well in the course.

Qualitative results included instances where an instructor motivated the student, and instances where an instructor decreased student motivation. One participant shared, "I have found that I have more motivation towards my communication class than any other. I believe that a big factor in this is that I find Dr. Michaels to be an exceptional teacher who makes coming to class enjoyable and instills in her students a genuine desire to learn the course material." Other students echoed this sentiment about their instructors. Contrarily, another participant shared "Now I have an F and I have to make it up by

doing a lot better on the other exams. I have no relationship with the professor, and that could be why I don't feel the need to try as hard in his class." The dichotomy between these statements highlights the impact instructor-student rapport can have on a student's motivation to succeed in a course.

Research Question 1b

The second research question also seeks to understand the role of instructor-student rapport by asking "To what extent does instructor-student rapport mediate student success?" This study used three sub-scales to measure instructor-student rapport (e.g., self-determination, connection to teacher, and perceptions of teacher). These sub-scales were then compared to student perceived learning and course grades for three courses (COM 100, UNI 110, and ASU 150).

Perceived learning. In linear regression models, instructor-student rapport variables positively and significantly predicted student perceived learning in COM 100, UNI 110, and ASU 150. The consistency of these findings highlights the importance of instructor-student rapport on student learning. Each of the three sub-scales significantly predicted student perceived learning.

Table 4.18: Significant Positive Predictors of Student Perceived Learning

	COM 100	UNI 110	ASU 150
Self-Determination	✓	✓	✓
Student Engagement	✓		✓
Perceptions of Teacher	✓	✓	✓

Though instructor-student rapport is only one of many factors likely influencing student learning, these findings show instructor-student rapport as a key piece to the puzzle that is understanding student success. These overwhelming findings lead to a second assertion, instructor-student rapport positively influences student perceived learning.

Assertion #2	Instructor-student rapport positively influences student perceived learning.

Course grade. In linear regression models, instructor-student rapport variables did not significantly predict student grades, with one exception. Perceptions of teacher did significantly predict COM 100 course grades. These results are not surprising in that course grade may not reflect perceived learning. This could also be a result of consistent course grade across multiple instructors with varying instructor-student rapport scores.

Triangulation among instructor-student rapport data. Multiple characteristics of the qualitative and quantitative results overlap. Both qualitative and quantitative findings independently show that instructor-student rapport can positively influence a student's motivation to learn and in turn, increase their perceived learning of course content.

Peer Rapport

The second research question seeks to understand the role of peer rapport on student's academic success. Peer rapport data was gather via qualitative and quantitative instruments. This scale is new to the body of research surrounding rapport.

Research Question 2a

This question seeks to better understand how peer rapport connects to student academic achievement. When asked about relationships influencing their learning, a few codes emerged including classmates, effects of relationships, family, friends, and other. Though all codes may help understand student motivation, for the purpose of answering the research question, I chose to focus on friends and classmates.

Participants in this study are unique in that they get to take three courses together. This was a strategic choice when designing the intervention as previous research suggested the importance of belonging. Outside of class time, students are not required to do anything additional with each other. Though not required, qualitative results show the role classmates can have on supporting each other's success. This idea is most present when one participant stated:

> "The personal relationships that I have made this semester have impacted me learning much more than I had originally anticipated. Most of my academic relationships have come from my cohort in my LEAD classes simply because we have mostly all the same classes and go through similar academic experiences. My friendships have impacted my academic success mostly by creating study groups which are very helpful especially in the days leading up to a quiz, test, or project. The helpful insight that I have gained from my friends have introduced me to new ideas that I have before given thought to."

My interpretation of this and similarly coded results, is that students spend enough time together in class that they form friendships. Through these friendships, they build trust and community, leading to positive academic interactions.

Similar sentiments occurred in the data coded as effects of relationships and friends. For example one student shared, “When other people can see my hard work, I feel like what I am doing isn’t going unnoticed. I really enjoy that and everyone is always asking me what is due, what should we do.” The peer relationships built among classmates leads to increased accountability and motivation to do well in the course. When discussing how friends have impacted academic achievement, another participant stated, “Having someone who you can count on as a friend as we all go through this journey of adjusting to college is very nice. Chances are if you’re going through it most of the other kids here are too. This makes it easy to communicate and get out what you’ve been holding in to make adjusting go much smoother.”

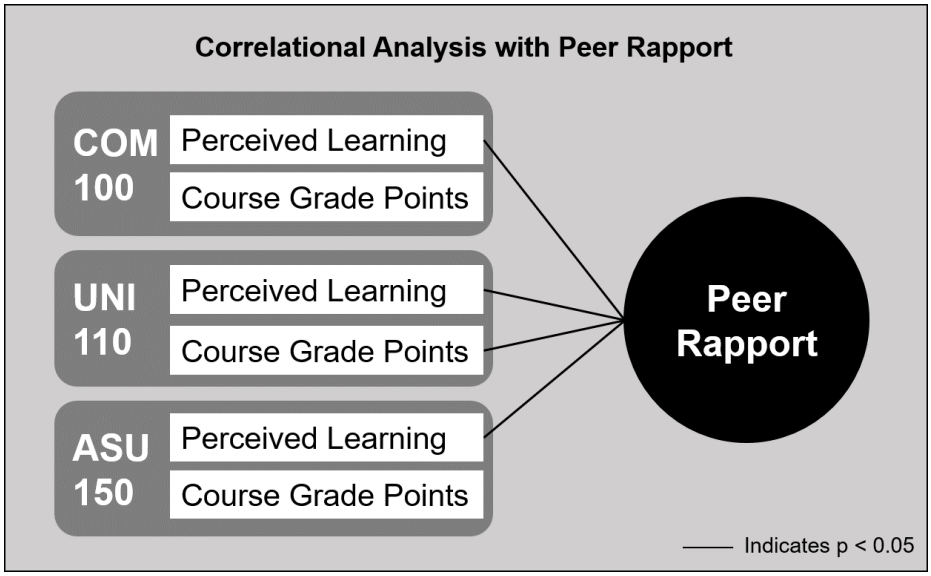
Collectively, qualitative results show peer rapport positively influences student motivation to achieve academic success leading to a third assertion. This finding is new to rapport research. Further discussion of implications are included later in this chapter.

Assertion #3	When peer rapport is high, students are more motivated to do well in the course.

Research Questions 2b

The final research question aims to explore the extent to which peer rapport mediates student academic achievement. Multiple types of statistical analysis were conducted to better understand if and how peer rapport relates to student achievement.

Figure 4.5: Correlational Analysis with Peer Rapport



Correlational analysis showed statistically significant relationships between peer rapport and perceived learning in every course. Significant correlations are noted above in Figure 4.5. Peer rapport also significantly correlated to UNI 110 course grade and approached statistical significant for course grades in COM 100 and ASU 150 ($p < .10$). The consistency of these findings shows a positive relationship between peer rapport and perceived learning.

Table 4.19: Peer Rapport Positive Significant Correlations with Learning and Grades

	COM 100	UNI 110	ASU 150
Perceived Learning	✓	✓	✓
Course Grade		✓	

A final statistical analysis was done utilizing linear regression models. Regression models indicated peer rapport as a statistically significant predictor of perceived learning in ASU 150, and course grade in COM 100. Peer rapport approached statistical significance in the model predicting perceived learning in UNI 110 where $p = .078$.

Table 4.20: Peer Rapport as a Significant Positive Predictor of Student Achievement in Regression Models

	COM 100	UNI 110	ASU 150
Perceived Learning			✓
Course Grade	✓		

Though peer rapport did not consistently predict perceived learning or course grade, other statistically significant relations occurred between peer rapport, perceived learning, and course grade as stated above. Collectively, these quantitative findings show consistent relations between peer rapport and perceived learned, and occasional relations between peer rapport and course grades.

Assertion #4	Peer rapport may positively relate to student perceived learning.

Triangulation among peer rapport data. Similar to findings regarding instructor-student rapport, peer rapport data also overlaps. Both qualitative and quantitative findings show a positive connective between peer rapport and academic achievement. While qualitative results show peer rapport influences student motivation, quantitative results show peer rapport relates to perceived learning. Together, the overlap of these results both validates the findings and shows that peer rapport mediates student achievement.

CHAPTER 5

DISCUSSION

This study evolved from multiple action research cycles exploring student motivation and the intersectionality of the role of those teaching the courses. Literature and related studies first pointed to the role of self-determination in student motivation. Tenets of self-determination include autonomy, competence, and relatedness. Initial research cycles continuously highlighted the importance of relatedness. In an open-ended survey question, participants were asked "What three things did you most enjoy about the program?" To my surprise, nearly every student independently wrote, "my classmates, the instructors, the courses." After reading the same response hundreds of times and over many research cycles, it struck me to further explore the role of relatedness in the classroom on a student's likelihood to learn. This realization sent me back to the literature on a hunt for similar studies. I found that recent studies explored the role of instructor-student rapport, but existing research did not include the role of peer rapport. This chapter includes discussions of complementarity, strengths, challenges, and implications for future studies and practice.

Consistency of Literature and Results

Previous research paved the way to this study. The many efforts of Deci and Cascio (1972) led to Self-Determination Theory (SDT) which outlines autonomy, competence, and relatedness as tenets of intrinsic motivation. As SDT grew in popularity, it was then included in education research as well (Freiberger, Steinmayr, & Spinath, 2012; Reeve & Jang, 2006; Reeve, Jang, Carrell, Jeon, & Barch, 2004; Stefano, Perencevich, DiCintio, & Turner, 2004). Broadly, researchers found student intrinsic

motivation and performance both positively related to their experiences of autonomy-supportive teaching. Both the literature and past research cycles pointed to the importance of relatedness as a predictor of student achievement. These findings led me to the literature on the role of instructor-student rapport in university classrooms (Frisby, Beck, Smith Bachman, Byars, Lamberth, & Thopson, 2016; Frisby, Berger, Burchett, Herovic, & Strawser, 2014; Frisby & Housely Gaffney, 2015; Webb & Barrett, 2014). Again, the theme found across studies was the mediational role of rapport in student learning.

Results in this study align with previous research on instructor-student rapport. For example, Wilson and Ryan (2013; 2014) found that instructor-student rapport mediated student perceptions of the instructor, course, and learning. Results in the current study also showed instructor-student rapport to predict student perceived learning, and in some cases course grades. One difference in this study was the choice to also include the Learning Climate Questionnaire as a third sub-scale to measure instructor-student rapport. This sub-scale was originally used to measure student perceptions of autonomy-support (Black & Deci, 2000). The current study's results confirm the sub-scale as a mediator of student achievement, and as an additional sub-scale to consider when researching instructor-student rapport.

The results from the current study extend the body of literature by introducing peer rapport as a potential predictor of student achievement. Previous research specific to relating peer relationships to academic achievement are limited (Swenson, Goguen, Hiester, & Nordstrom, 2011; Swenson, Nordstrom, & Hiester, 2008). However, these studies did show positive correlations between having trust and sharing common interests

with a college friend with academic achievement. The current study adds to the body of literature due to the addition of a peer rapport scale, and from initial findings that peer rapport mediates student achievement.

Discussion of the Study

The execution and findings of this mixed method action research study included both strengths and limitations. Additionally, as a result of the study's findings, I suggest both future research areas and implications for practice.

Strengths

Strengths of this study included a substantial sample size, multiple data sources allowing for triangulation, and the development of a scale previously not included in student success literature. The sample size of over 400 students allowed for statistical analysis that could not have been done in a smaller study. Multiple data sources consisted of qualitative and quantitative measures, and multiple measures of quantitative data for each participant. These results overlapped in a way that validated the findings of each other. Innovation and study design lead to multiple measures for instructor-student rapport and student achievement across multiple courses. Including measures for multiple courses allowed for not only significant results, but patterns of significant results.

The characteristic providing the most strength to this study is the development of a measure not previously existent in student success research. Multiple research cycles led to high internal reliability of the Peer Rapport Scale (PRS). Study findings show this measure can be indicative of student academic achievement.

Limitations

Limitations occurring in this study included a limited context, lack of substantial prior research studies in this area, and the measure used to collect qualitative peer rapport data. As with all action research, this study was limited to one group of students at one institution. This limited context translates to limited generalizability of study findings. The same study conducted in a different context, at a different institution, may not generate similar results.

A second limitation of this study was the lack of substantial prior research on rapport in the classroom. The idea of instructor-student rapport and development of the connection to teacher and perceptions of teacher scales only occurred in the last decade. Additionally, no prior studies examined peer rapport. The limited previous research meant scales used in this study were both adjusted and developed rather than using long-standing scales with historical reliability and validation.

A third limitation in this study was the measure used to explore peer rapport. The goal was to explore the role of peers on academic achievement; however participants instead shared how many different groups influenced their academic achievement. Had the instrument been designed differently, data may have been more focused on peers which could have led to additional findings.

Suggestions for Future Research

Findings from this study lead me to suggest multiple implications for future research. The results of this study show that both instructor-student rapport and peer rapport may be important variables when working towards improved student success

outcomes. Previous research explores factors that contribute to student success, but generally exclude their experiences and relationships in the classroom.

More research should be conducted to better understand how individuals teaching can motivate their students to learn. The current study's results indicate increasing instructor-student rapport is one way teachers can increase student motivation. Future research should be done to explore specific ways teachers can increase their rapport with their students. Instructor-student rapport should also be examined in additional contexts. Although results from this study showed instructor-student rapport as a significant predictor of student achievement, this may not be the case in different settings. Instructor-student rapport should be further examined in different sized classes, at other institutions, and in other academic areas.

With the current social climate growing increasingly aware of gender and equality, it may be prudent to examine the role of instructor-student rapport while also including instructor and student genders and/or ethnicities as variables. This study excluded gender as a factor in analysis. Even though collectively students achieved higher rates of success when they had rapport with their instructor, these trends may be different across personal demographics such as gender or ethnicity. Future research should consider these personal demographics both of students and instructors to more fully understand the potential impact instructor-student rapport has for unique student groups. More fully understanding the role of rapport in student success also requires further research into peer rapport.

Peer rapport research is in its infancy. Results from this study show peer rapport is a variable which may increase a student's likelihood to achieve academic success.

Further research should be done to ensure validity of the scale in additional contexts. The current peer rapport scale measures student perceptions, but not necessarily behaviors or attitudes. What this study does not explore is how to increase peer rapport in the classroom. Further research should be done to better understand behaviors that build peer rapport. Better understanding the behaviors that lead to increased peer rapport could pave the way for changed classroom practices and eventually improved student achievement.

In addition to better understanding behaviors that lead to increased rapport, it is also important to further explore rapport in additional settings. This study was limited to one institution, with similar class sizes. To more fully understand the impact of rapport, the scales should be used in other contexts, with other student demographics, and in different sized classes. For example, a similar study could be replicated at multiple institutions and spanning classes with varying enrollments. Potential future research questions are noted below.

Table 5.1: Future Research Questions

Suggested future research questions
✓ To what extent does instructor-student rapport valuation vary across class sizes?
✓ To what extent does instructor-student rapport mediate student success across different academic areas?
✓ To what extent does instructor-student rapport vary across personal demographics?
✓ To what extent does peer rapport valuation vary across class sizes?
✓ To what extent does peer rapport mediate student success across different academic areas?

Implications for Practice

Findings from this study also lead me to suggest best practices relating to in-class rapport development both between the instructor and student, and among peers. In the

following sections, I provide checklists instructors can use when trying to increase rapport, and share examples of potential rapport building activities.

Developing instructor-student rapport. In all three linear regression models, autonomy support and perceptions of teacher significantly predicted perceived student learning. These sub-scales include specific teacher behaviors. I have translated sub-scale items into check-lists that instructors could use as a guide when trying to build rapport with their students. These checklists are available in Table 5.2.

Table 5.2: Checklists for building Instructor-Student Rapport

Autonomy Support	**Perceptions of Teachers**
❒ Provide students opportunities to make choices	❒ Act with compassion
❒ Try to understand students	❒ Practice confidence
❒ Communicate confidence in student's ability to succeed in the course	❒ Communicate how much you enjoy teaching
❒ Encourage students to ask questions	❒ Care about students
❒ Ask students how they would like to do things	❒ Show enthusiasm
❒ Listen to students before suggesting a new way of doing things	❒ Act as a role model
	❒ Communicate that you want to make a difference
	❒ Act with friendliness
	❒ Follow through with what you say you will do

For instructors to develop rapport with students, it will require time, effort, and practice. Just as the students in their course will need to practice and study the course content, instructors may need to practice and study rapport-building strategies. The above check-lists can be a tool during that process. The first checklist item reads, "Provide students opportunities to make choices." As one who has been practicing autonomy-supportive teaching for a few years, I can share this is easier said than done. Many experienced instructors have developed a course outline that works well for them, and

continue to use the same outline each semester. Adding opportunities for students to make choices can feel like a major change.

However, there are many opportunities for students to make decisions throughout a course. One type of opportunity for student choice is to provide multiple knowledge acquisition options. For example, rather than require students to read the same article, offer a list of articles, videos, and/or podcasts and ask each student to choose two. Obviously, this requires preparation time from the instructor, but it is one way to give students an opportunity to choose. Another example of student choice is giving students the opportunity to choose assignment due dates. This choice should have clear parameters, but can prove immensely valuable. As an example, many courses implement small weekly assignments where the due date and time has no impact on the instructor barring the assignments are completed prior to class time. Or in other words, it makes no difference to my schedule whether an assignment is due Friday morning or Tuesday evening. Earlier in my teaching practice, I would pick a time that made sense to me, but now I ask my students what due date and time would work well for their schedules. Giving students opportunities to choose can also show them that you care.

Another checklist item reads, “Care about students.” While this may seem obvious, student perceptions may not align instructor’s own valuations of the extent to which they care about their students. For those who care about their students, I urge you to explicitly state the feeling. In addition to communicating you care, the task can be accomplished in many other ways. One option is to reach out to a student after they missed class. In my context, this is commonly done via email and can be as simple as, “Hey Jack – We missed you in class today. I just wanted to check in and make sure

everything is okay with you." This simple action shows students you noticed they were absent, and opens the door to have a conversation if something is impeding their coursework. Again, implementing caring practices may require instructors to put forth additional time and practice. The above suggestion would only be possible where an instructor knows student names and takes class attendance, both of which could be significant changes to an instructor's practice.

Developing peer rapport. Similar to instructor-student rapport, providing students opportunities to build rapport with each other may also require time, effort, and practice. Using the peer rapport scale, I developed a checklist for instructors to use as a tool when working towards increased peer rapport in their classrooms. This checklist is available in Table 5.3.

Table 5.3: Checklist for building Peer Rapport

Peer Rapport Building
❒ Students learn their classmate's names
❒ Students discover commonalities with their peers
❒ Communicate your expectation that students treat each other with respect
❒ Require students work together in-class
❒ Require students work together outside of class
❒ Provide opportunities for students to ask each other questions
❒ Create a classroom culture of community and belonging

Unlike instructor-student rapport, developing peer rapport requires student actions. While it is ultimately the students working together, the instructor must provide the space for students to interact. Instructors can support peer rapport development in many ways. Perhaps the first step towards peer rapport development is giving students the time and space to learn each other's names. For small classes, the expectation could be that students know all of their classmate's names, whereas in a larger class perhaps the

expectation is knowing at least 10 classmate's names. Learning names can be done in-class or digitally.

In addition to knowing each other's names, peer rapport is also developed through finding commonalities with classmates. This could be done through in-class or digital activities. Commonalities could be as simple as "lives on campus," or "likes attending concerts." Even though peer commonalities may be simple, the instructor must provide the space for students to discover things they have in common. One way to do this is to add a requirement to the beginning of group work. Rather than ask students to work together to complete an assignment, first ask them to get to know their group members.

Personal Lessons Learned

The dissertation process proved to me an interesting and challenging personal journey. For the past three years, I immersed myself in literature, study design, and seemingly infinite datasets. In my professional work, I spent time developing a complex curricular program that engages faculty and students across ASU's colleges and campuses. In my academic work, I studied the role these individuals played in student academic achievement. As outlined in Chapter 4, study results show specific connections between rapport and achievement. After years of qualitative and quantitative analysis, I can now say (with evidence) – *Students learn more when they feel cared about by the people around them.*

Throughout this process, I observed my personal motivation to learn and complete this dissertation. I tried to incorporate what research I was finding into my own practice as a student. As a doctoral student, this meant observing and reflecting on the rapport I had (or did not have) with my professors, and that rapport connected to motivation. When

I felt a sense of connection with a professor, I spent more time preparing for class and cared more about the quality of work I submitted. Alternatively, in courses where I did not feel any sense of connection to the professor, or had a negative connection, I found myself avoiding coursework and being disgruntled at the idea of going to class. Across doctoral courses, my motivation was partially dependent on the connection I had with my professors.

I also observed and reflected on the rapport I have had with my classmates and how that has contributed to my motivation to learn and complete this dissertation. The overwhelming through-line of my personal experience during the dissertation process has been the immense positive impact my peers have had on my motivation and work ethic. In classes where I did not feel connected to the professor, I found myself motivated by spending time with classmates and supporting their content learning where I had previous experience. Similarly, I knew I would have their support in content areas where I struggled. Feeling connected to, and supported by, my peers was the single most significant contributor to my persistence to graduation.

Conclusion

Exploring student achievement through the lenses of self-determination theory and rapport has led to evidence supporting the importance of instructor-student rapport in the learning process. It is plausible that implementing rapport training for university faculty could positively influence student achievement at a scale greater than just the current study. Increasing instructor-student rapport or peer rapport has the potential to increase student motivation, and hopefully improve institutional metrics such as freshmen retention and four-year graduation rates.

Assertion #1	When instructor-student rapport is high, students are more motivated to do well in the course.
Assertion #2	Instructor-student rapport positively influences student perceived learning.
Assertion #3	When peer rapport is high, students are more motivated to do well in the course.
Assertion #4	Peer rapport may positively relate to student perceived learning.

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APPENDIX A

A GUIDING THEORY FOR CHANGE IMPLEMENTATION

Implementation of Educational Changes

Successfully implementing change in an education context can be challenging, but change researchers provide theories for both understanding and implementing such changes. As I implement changes within my context, I will utilize the theories below.

Change Theory

Change theory researcher Michael Fullan (2001), suggests three overarching phases within educational change: initiation, implementation, and institutionalization. This study focuses specifically on the implementation phase within the educational change process. Initiation refers to factors leading up to a decision to implement change. Alternatively, implementation refers to the process of acting on that decision in an effort to reach the goals of the new program. Fullan (2001) explains three groups of characteristics influence implementation; these areas include (a) characteristics of change, (b) local characteristics, and (c) external factors. Each characteristic group has factors specific to that group.

Characteristics of change. Characteristics of change, specific to the implementation phase, include needs, clarity, complexity, quality, and practicality of the program. Need, as a factor, refers to the extent to which a new program addressed an existing contextual need. Or, in other words, whether or not a new program helps solve a problem or reach an institutional goal. Clarity refers to the extent to which leaders communicate the new program and its goals to those responsible for implementation. Additionally, Fullan (2001) suggests avoiding what he calls false clarity. False clarity refers to when implementers believe they understood the goals and process of a program, but in fact, understood incorrectly.

The next change factor is the complexity level. Like clarity, complexity also refers to goals and processes, but specifically to the level of difficulty necessary to implement new beliefs or processes. The degree of complexity may influence implementation, but that does not mean highly complex changes should be avoided. Highly complex implementations result in greater changes, whereas simple changes may occur with more ease. However, simple changes may lead to smaller results (Fullan, 2001). Fullan (2001) further explains this idea by stating, "Ambitious projects are nearly always politically driven. As a result, the timeline between the initiation, decision and startup is often too short to attend to matters of quality" (p. 79).

The last characteristic of change is the quality and practicality of the program implementation. Although the initiation phase may have quickly led to the decision to implement a change, that did not mean implementation can, or should, happen quickly.

Local characteristics. The next group of characteristics within Fullan's (2001) model for educational change implementation is local characteristics. Local characteristics that influence the implementation process include the school district, the board and community, the principal, and teachers. School districts influence implementation because of their historical experiences with change. If the district previously had negative experiences with change, it may be apprehensive to implement new changes. Conversely, if a district historically had positive experiences with change, it may be more likely to continue to implement new changes.

During the implementation phase, high-level administrators should assist in implementation by showing their support, knowledge, and understanding of the new program. School boards influence implementation processes in their role of hiring (or firing) superintendents. The board could chose to hire a superintendent who served as an advocate either for or against change. The community's influence on implementation refers to changing demographics of the community. As the community changes, so do the needs of its schools. These changing needs influence necessary new programs.

A school principal rarely serves as a change leader, but can be a strong influencer (Fullan, 2001). The role of principal during change initiatives can be challenging both psychologically and sociologically because the principal serves as an intermediary between the district and teachers. When a principal actively avoids implementing the change, it is unlikely the teachers would chose to implement the change.

Lastly, teachers play a large role in implementation, both as individuals and as a collective group. Individuals' self-efficacy influences their capacity to implement change. Collectively, opportunities for peer relationships and social learning are key to establishing implementation.

External characteristics. The last characteristic group includes external factors. External factors influencing implementation depend on the local and larger contexts such as state and federal governments or agencies. Governing groups write policies they believe will better meet student needs. However, policy makers are not responsible for implementation. Implementation responsibilities fall on local administrators and teachers. This dichotomy between policy and implementation occurs in many fields, not just education. Different levels of systems do not connect, thus making it challenging to smoothly transition from policy initiation to successful implementation (Fullan, 2001).

In summary, ensuring change meets a need and that leaders clearly communicate the goals and processes takes substantial time and effort. The degree of change complexity determines the necessary implementation timeline. The more complex the change, the more preparation time is necessary for high-quality implementation. School-level change implementation requires support from the individual, department, school, and district. Further, top-level administrators need to show support, knowledge, and understanding of realities. After a decision to initiate change, then the process of implementation begins. The implementation process includes characteristics of change, internal and external factors, all of which influence the extent to which change implementation occurs. Recognizing the influence of Fullan's (2001) model for educational change, the factors above were utilized in the development of the innovation in this study.]

APPENDIX B

SUPPORTING LITERATURE

As described in chapter two, results from numerous research studies validate the use of autonomy-supportive classrooms for improving student success. Researchers have explored the effects of student's perceptions of autonomy, competence, and relatedness on their success or persistence.

Reeve and Jang (2006) found students' perceived autonomy relates to student reports of enjoyment, engagement, and performance. Additionally, specific teacher behaviors relate to students' perceptions of autonomy. These teacher behaviors include offering encouragement, allowing time for students to work in class, and providing time where students can talk in class. Ultimately, study results show that autonomy-supportive teaching behaviors influence students' perceptions, and that interpersonal relationships influence academic success.

Researchers in another study examine students' perceptions of autonomy as it relates to class organization, procedures, and personal cognition (Stefanou, Perencevich, CiCintio, & Turner, 2004). The results of this study suggest autonomy-supportive teaching increases student engagement. When student engagement increases, so does learning motivation (Stefanou et al.. 2004). Moreover, the researchers found that the type of autonomy provided influences student success. Teacher's use of cognitive autonomy more closely related to student motivation than the uses of organizational or procedural autonomy. Reeve, Jang, Carrell, Jeon, and Barch (2004) studied the extent to which professional development for teachers influences student engagement and learning. They also found that autonomy-supportive teaching increases student engagement and student learning.

Other researchers examined the relations between student perceptions of competence and their intrinsic motivation. One group of researchers examined students' perceived competence valuation (i.e., the extent to which they felt learning content was important), and their perceived competence (Elliot, Faler, McGregor, Campbell, Sedikides, & Harackiewicz, 2000). Elliot et al. found students who received positive feedback had higher competence valuations and higher perceptions of competence and task enjoyment. They also found that both women and high performers had higher competence valuations. Other researchers found similar results (Pat El, Tillema, & Van Koppen, 2012). Pat El et al found that both monitoring and scaffolding feedback influenced student interest in future learning. Freiberger, Steinmayr, and Spinath (2012) assessed students' perceived competence and found perceptions relate to academic achievement and intrinsic motivation. Most interestingly, students' perceptions of their teacher's belief in their competence positively related to intrinsic motivation even when the students did believe in themselves (Freiberger et al.). In other words, when a student feels their teacher believes in them, the student is more likely to be successful.

Finally, other researchers examined student perceptions of interpersonal connectedness as it relates to academic success. Wentzel (2007) found that middle school students' perceptions of whether or not their teachers cared about them influenced their motivation to learn. Others found that instructors influenced students' sense of belonging (Zumbrunn, McKim, Buhs, & Hawley, 2014). Taking it a step further, students with a high sense of belonging had higher competence beliefs and valued the content more than students with low sense of belonging scores (Zumbrunn et al.). Additionally, Morrow and Ackermann (2012) found that first-year college students who felt supported by faculty and/or their peers were more likely to return for their sophomore year.

APPENDIX C

JOURNAL ENTRY GRADING RUBRIC

	Levels of Achievement		
Criteria	Excellent	Good	Unacceptable
Depth of ideas	**8 to 10 points** Ideas shared in this entry are completely unique to the author. The author clearly answers the prompt questions and explicates her/his thoughts and feelings.	**6 to 8 points** Most ideas in this entry are unique to the author, but some common ideas occur. The author touches on their thoughts, but could have further explicated their thoughts or feelings.	**0 to 5 points** This entry slightly touches on the authors thoughts or feelings. The entry is generic and could have likely been submitted by any other student.
Sufficient content	**6 to 8 points** The entry fully answers all prompt questions. Generally, this means more than 200 words or 1 page double-spaced.	**4 to 5 points** The entry answers most of the prompt questions, but could have included more details about one or all of the prompt questions. The entry is at least 1 complete paragraph.	**0 to 3 points** The entry does not fully answer the prompt and falls significantly short of short paragraphs.
Grammar	**2 to 2 points** Close to no errors exist.	**1 to 1 points** A few small errors exist throughout.	**0 to 0 points** Errors exist throughout the entry, regularly inhibiting the reader of from understanding.

APPENDIX D

STUDENT QUESTIONAIRE

Dear Students:

My name is Kate Vawter and I am a doctoral student in the Mary Lou Fulton Teachers College (MLFTC) at Arizona State University. I am working under the direction of Dr. Pamela Kulinna, a faculty member in MLFTC. We are interested in providing high quality instruction and experiences to ASU's first-year students. We are conducting a research study to examine the effectiveness of The LEAD Project.

We are asking for your help, which will involve your participation in an in-person survey about your knowledge, attitudes, and beliefs about student services. We anticipate the survey will take about 10 minutes for you to complete.

Your participation in this study is voluntary. If you choose not to participate, there will be no penalty. Choosing not to participate will not affect your ASU 150 grade.

The benefit to participation is the indication of success such that expansion of the program to instructors in other programs may be possible. Participating in this survey will provide valuable feedback to university administrators who oversee The LEAD Project. Your feedback will be used to make changes to the program in order to better meet the needs of future students. There are no foreseeable risks or discomforts to your participation.

Survey results will also inform future iterations of the program. Thus, there is potential to enhance the experiences that are provided to our instructors and ultimately the success of ASU students. There are no foreseeable risks or discomforts to your participation.

Your responses will be confidential. Results of this study may be used in reports, presentations, or publications but your name will not be known.

If you have any questions concerning the research study, please contact the research team—Pamela Kulinna at pamela.kulinna@asu.edu or (480) 727-1767 or Kate Vawter at ksvawter@asu.edu.

Thank you,

Kate Vawter, Doctoral Student
Pamela Kulinna, Professor

Consent Statement: I agree to participate in the survey being conducted. I understand the survey will take approximately 10 minutes to complete. I understand that neither my evaluation in the LEAD program nor my relationship with the provost's office will be affected if I opt not to take the survey. I am at least 18 years of age.

By signing here, I agree to participate in the survey.

_____ _____

Signature Date

If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can contact Pamela Kulinna at (480) 727-1767 or the Chair of the Human Subjects Institutional Review Board through the ASU Office of Research Integrity and Assurance at (480) 965-6788.

Please rate your level of agreement with the following statements regarding your experiences with your LEAD classmates.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I know many of my classmate's names.	1	2	3	4	5	6
I have things in common with my classmates.	1	2	3	4	5	6
Most of the time my classmates are respectful of me as an individual.	1	2	3	4	5	6
I am friends with some of my classmates.	1	2	3	4	5	6
I am comfortable asking my classmates for help with coursework.	1	2	3	4	5	6
There are students in this class that I care about.	1	2	3	4	5	6
I look forward to seeing my classmates.	1	2	3	4	5	6
I sometimes study or do coursework with my classmates	1	2	3	4	5	6
LEAD helped me form relationships with other students.	1	2	3	4	5	6
In LEAD classes, I feel like I am part of a group.	1	2	3	4	5	6
I can talk with my classmates about things that really matter to me.	1	2	3	4	5	6

Please rate your level of agreement with the following statements regarding your experiences with your LEAD mentor.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I liked having a LEAD mentor attend ASU 150	1	2	3	4	5	6
I felt comfortable asking my LEAD mentor for help	1	2	3	4	5	6
The LEAD mentor helped me succeed	1	2	3	4	5	6
My LEAD mentor shared useful information	1	2	3	4	5	6

Please rate your level of agreement with the following statements.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
The LEAD Project helped me form relationships with instructors	1	2	3	4	5	6
The LEAD Project helped me feel connected to the university	1	2	3	4	5	6
I enjoyed The LEAD Project	1	2	3	4	5	6
The LEAD Project helped me transition to college expectations	1	2	3	4	5	6

I believe I am capable of overcoming academic obstacles	1	2	3	4	5	6
The LEAD Project helped me succeed at ASU	1	2	3	4	5	6

Perceptions of experiences in Introduction to Human Communication (COM 100)

Please rate your level of agreement to the following statements about your COM 100 experiences.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I feel that my COM 100 instructor provides me choices and options.	1	2	3	4	5	6
I feel understood by my COM 100 instructor.	1	2	3	4	5	6
My COM 100 instructor conveyed confidence in my ability to do well in the course.	1	2	3	4	5	6
My COM 100 instructor encouraged me to ask questions.	1	2	3	4	5	6
My COM 100 instructor listens to how I would like to do things.	1	2	3	4	5	6
My COM 100 instructor tries to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6
I would recommend my COM 100 instructor to a friend.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
My COM 100 instructor encourages questions and comments from students.	1	2	3	4	5	6
I dislike my COM 100 class.	1	2	3	4	5	6
My COM 100 instructor makes class enjoyable.	1	2	3	4	5	6
I would like to take other classes taught by my COM 100 instructor.	1	2	3	4	5	6
My COM 100 instructor's body language says, "Don't bother me."	1	2	3	4	5	6
I really like going to my COM 100 class.	1	2	3	4	5	6

I feel my COM 100 instructor…	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Is compassionate	1	2	3	4	5	6
Is confident	1	2	3	4	5	6
Enjoys his/her job	1	2	3	4	5	6
Cares about students	1	2	3	4	5	6

Is enthusiastic	1	2	3	4	5	6
Is a role Model	1	2	3	4	5	6
Wants to make a difference	1	2	3	4	5	6
Is friendly	1	2	3	4	5	6
Is reliable	1	2	3	4	5	6

Perceptions of experiences in Critical Reading and Thinking (UNI 110)

Please rate your level of agreement to the following statements about your UNI 110 experiences.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I feel that my UNI 110 instructor provides me choices and options.	1	2	3	4	5	6
I feel understood by my UNI 110 instructor.	1	2	3	4	5	6
My UNI 110 instructor conveyed confidence in my ability to do well in the course.	1	2	3	4	5	6
My UNI 110 instructor encouraged me to ask questions.	1	2	3	4	5	6
My UNI 110 instructor listens to how I would like to do things.	1	2	3	4	5	6
My UNI 110 instructor tries to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6
I would recommend my UNI 110 instructor to a friend.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
My UNI 110 instructor encourages questions and comments from students.	1	2	3	4	5	6
I dislike my UNI 110 class.	1	2	3	4	5	6
My UNI 110 instructor makes class enjoyable.	1	2	3	4	5	6
I would like to take other classes taught by my UNI 110 instructor.	1	2	3	4	5	6
My UNI 110 instructor's body language says, "Don't bother me."	1	2	3	4	5	6
I really like going to my UNI 110 class.	1	2	3	4	5	6

I feel my UNI 110 instructor…	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Is compassionate	1	2	3	4	5	6
Is confident	1	2	3	4	5	6
Enjoys his/her job	1	2	3	4	5	6
Cares about students	1	2	3	4	5	6
Is enthusiastic	1	2	3	4	5	6
Is a role Model	1	2	3	4	5	6
Wants to make a difference	1	2	3	4	5	6
Is friendly	1	2	3	4	5	6
Is reliable	1	2	3	4	5	6

Perceptions of experiences in The LEAD Project I (ASU 150)

Please rate your level of agreement to the following statements about your ASU 150 experiences.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I feel that my ASU 150 instructor provides me choices and options.	1	2	3	4	5	6
I feel understood by my ASU 150 instructor.	1	2	3	4	5	6
My ASU 150 instructor conveyed confidence in my ability to do well in the course.	1	2	3	4	5	6
My ASU 150 instructor encouraged me to ask questions.	1	2	3	4	5	6
My ASU 150 instructor listens to how I would like to do things.	1	2	3	4	5	6
My ASU 150 instructor tries to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6
I would recommend my ASU 150 instructor to a friend.	1	2	3	4	5	6

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
My ASU 150 instructor encourages questions and comments from students.	1	2	3	4	5	6
I dislike my ASU 150 class.	1	2	3	4	5	6
My ASU 150 instructor makes class enjoyable.	1	2	3	4	5	6
I would like to take other classes taught by my ASU 150 instructor.	1	2	3	4	5	6
My ASU 150 instructor's body language says, "Don't bother me."	1	2	3	4	5	6
I really like going to my ASU 150 class.	1	2	3	4	5	6

I feel my ASU 150 instructor…	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Is compassionate	1	2	3	4	5	6
Is confident	1	2	3	4	5	6
Enjoys his/her job	1	2	3	4	5	6
Cares about students	1	2	3	4	5	6
Is enthusiastic	1	2	3	4	5	6
Is a role Model	1	2	3	4	5	6
Wants to make a difference	1	2	3	4	5	6
Is friendly	1	2	3	4	5	6
Is reliable	1	2	3	4	5	6

How much do you feel like you learned about each of the following topics?

Introduction to Human Communication Topics	**Nothing**	**Very Little**	**Some**	**Quite a Bit**	**A Great Deal**
How culture influences communication	1	2	3	4	5
How to perform well in a public speaking situation	1	2	3	4	5
How different channels effect what meaning is made	1	2	3	4	5
The difference between verbal and nonverbal communication	1	2	3	4	5
How nonverbals effect how I am perceived as a communicator	1	2	3	4	5

How identities reflect and inform communication styles	1	2	3	4	5
How to be an effective listener	1	2	3	4	5
How to be an effective communicator	1	2	3	4	5

Critical Thinking Topics	**Nothing**	**Very Little**	**Some**	**Quite a Bit**	**A Great Deal**
How to think critically	1	2	3	4	5
How to use ASU's online library	1	2	3	4	5
How to evaluate the credibility of a source	1	2	3	4	5
How to evaluate the relevance of a source	1	2	3	4	5
How to support an argument with evidence	1	2	3	4	5
How to cite sources	1	2	3	4	5
How to define an issue	1	2	3	4	5
How to debate an issue	1	2	3	4	5

The LEAD Project I Topics	**Nothing**	**Very Little**	**Some**	**Quite a Bit**	**A Great Deal**
How my choices affect my performance at ASU	1	2	3	4	5
The impact of a growth versus fixed mindset on my success	1	2	3	4	5
How to work effectively in a group	1	2	3	4	5
How to self-reflect to make changes that support my goals	1	2	3	4	5
The reasons why I procrastinate	1	2	3	4	5
The value of working in groups	1	2	3	4	5
How to effectively manage my time	1	2	3	4	5
The importance of self-awareness	1	2	3	4	5

Would you recommend The LEAD Project to a friend? ☐Yes ☐No

Why or why not?

Please list three things you've liked about The LEAD Project.

Please list at least one thing you would like to see improved in The LEAD Project.

Please select the best fit answer with respect to the Fall 2016 term.

I visited the writing center. ☐No ☐Yes If yes, about how many times? _____

I visited a tutoring center. ☐No ☐Yes If yes, about how many times? _____

I visited the math tutoring center. ☐No ☐Yes If yes, about how many times? _____

I met with my LEAD Mentor. ☐No ☐Yes If yes, about how many times? _____

I visited a professor during office hours. ☐No ☐Yes If yes, about how many times? _____

Please tell us a little about yourself.

Last four digits of ASU ID number: _____ (ex. 0744)

Gender: ☐Female ☐Male ☐Other

Do you live on campus? ☐Yes ☐No

Residency: ☐Arizona Resident ☐Non-Arizona Resident

Ethnicity:
☐White
☐Hispanic or Latino
☐Black or African American
☐Native American
☐Asian / Pacific Islander
☐Other

I plan to attend ASU in the spring. ☐No ☐Yes
If no, why not?

APPENDIX E

AUTONOMY SUPPORT SUB-SCALE DESCRIPTIVE STATISTICS

COM 100 – Student's Perceived Self-Determination

Item	N	Mean	Std. Dev.	α if item deleted
My COM 100 instructor provides me choices and options	404	4.28	1.598	.975
I feel understood by my COM 100 instructor	404	4.13	1.746	.972
My COM 100 instructor conveyed confidence in my ability to do well in the course	401	4.36	1.628	.973
My COM 100 instructor encouraged me to ask questions	404	4.36	1.621	.975
My COM 100 instructor listens to how I would like to do things	403	4.21	1.704	.973
My COM 100 instructor tries to understand how I see things before suggesting a new way to do things	404	4.22	1.701	.973

UNI 110 – Student's Perceived Self-Determination

Item	N	Mean	Std. Dev.	α if item deleted
My UNI 110 instructor provides me choices and options	401	5.00	1.020	.943
I feel understood by my UNI 110 instructor	401	5.01	1.038	.939
My UNI 110 instructor conveyed confidence in my ability to do well in the course	401	5.16	.929	.941
My UNI 110 instructor encouraged me to ask questions	399	5.22	.932	.947
My UNI 110 instructor listens to how I would like to do things	397	5.05	1.044	.938
My UNI 110 instructor tries to understand how I see things before suggesting a new way to do things	399	5.07	1.006	.942

ASU 150 – Student's Perceived Self-Determination

Item	N	Mean	Std. Dev.	α if item deleted
My ASU 150 instructor provides me choices and options	403	5.04	1.004	.953
I feel understood by my ASU 150 instructor	403	5.01	1.090	.950
My ASU 150 instructor conveyed confidence in my ability to do well in the course	402	5.11	.984	.952
My ASU 150 instructor encouraged me to ask questions	403	5.17	.947	.964
My ASU 150 instructor listens to how I would like to do things	402	5.02	1.103	.953
My ASU 150 instructor tries to understand how I see things before suggesting a new way to do things	403	5.01	1.061	.951

APPENDIX F

CONNECTION TO TEACHER SUB-SCALE DESCRIPTIVE STATISTICS

COM 100 – Student's Perceived Connection to Teacher

Item	N	Mean	Std. Dev.	α if item deleted
My COM 100 instructor encourages comments from students	403	4.58	1.529	.974
I like my COM 100 instructor	404	4.49	1.751	.967
My COJM 100 instructor makes class enjoyable	403	4.32	1.758	.966
I would like to take other classes taught by my COM 100 instructor	403	4.09	1.919	.968
My COM 100 instructor's body language is welcoming	403	4.44	1.667	.969
I really like going to my COM 100 class	403	4.02	1.864	.971

UNI 110 – Student's Perceived Connection to Teacher

Item	N	Mean	Std. Dev.	α if item deleted
My UNI 110 instructor encourages comments from students	400	5.32	.846	.960
I like my UNI 110 instructor	401	5.21	1.063	.937
My COJM 100 instructor makes class enjoyable	400	5.07	1.070	.935
I would like to take other classes taught by my UNI 110 instructor	401	4.93	1.276	.938
My UNI 110 instructor's body language is welcoming	401	5.09	1.065	.941
I really like going to my UNI 110 class	401	4.88	1.285	.941

ASU 150 – Student's Perceived Connection to Teacher

Item	N	Mean	Std. Dev.	α if item deleted
My ASU 150 instructor encourages comments from students	403	5.25	.900	.947
I like my ASU 150 instructor	402	5.08	1.174	.922
My COJM 100 instructor makes class enjoyable	402	4.97	1.222	.921
I would like to take other classes taught by my ASU 150 instructor	403	4.79	1.396	.921
My ASU 150 instructor's body language is welcoming	402	5.08	1.109	.935
I really like going to my ASU 150 class	402	4.67	1.509	.933

APPENDIX F

PERCEPTIONS OF TEACHER SUB-SCALE DESCRIPTIVE STATISTICS

COM 100 – Student's Perceptions of their Teacher

Item	N	Mean	Std. Dev.	α if item deleted
Is compassionate	404	4.65	1.428	.974
Is confident	404	4.62	1.565	.973
Enjoys their job	403	4.84	1.387	.973
Cares about students	404	4.83	1.371	.973
Is enthusiastic	404	4.82	1.416	.973
Is a role model	404	4.28	1.746	.974
Wants to make a difference	402	4.57	1.528	.973
Is friendly	404	4.94	1.322	.976
Is reliable	404	4.54	1.756	.974

UNI 110 – Student's Perceptions of their Teacher

Item	N	Mean	Std. Dev.	α if item deleted
Is compassionate	400	5.22	.933	.963
Is confident	400	5.42	.819	.962
Enjoys their job	400	5.47	.807	.961
Cares about students	400	5.43	.794	.962
Is enthusiastic	400	5.40	.864	.959
Is a role model	400	5.18	1.008	.961
Wants to make a difference	400	5.35	.874	.960
Is friendly	400	5.40	.844	.958
Is reliable	400	5.41	.879	.959

ASU 150 – Student's Perceptions of their Teacher

Item	N	Mean	Std. Dev.	α if item deleted
Is compassionate	403	5.28	.957	.962
Is confident	403	5.36	.866	.965
Enjoys their job	403	5.43	.833	.964
Cares about students	403	5.41	.866	.961
Is enthusiastic	402	5.43	.821	.962
Is a role model	403	5.19	1.108	.963
Wants to make a difference	403	5.35	.930	.961
Is friendly	403	5.39	.903	.961
Is reliable	403	5.31	1.001	.961

APPENDIX H

PERCEIVED LEARNING SUB-SCALE DESCRIPTIVE STATISTICS

COM 100 – Student's Perceived Learning

Item	N	Mean	Std. Dev.	α if item deleted
How culture influences communication	402	3.53	1.302	.978
How to perform well in a public speaking situation	402	3.80	1.287	.976
How different channels effect what meaning is made	401	3.55	1.303	.976
The difference between verbal and nonverbal communication	401	3.85	1.257	.975
How nonverbals effect how I am perceived as a communicator	402	3.77	1.314	.974
How identities reflect and inform communication styles	401	3.63	1.347	.974
How to be an effective listener	402	3.81	1.284	.974
How to be an effective communicator	401	3.83	1.307	.974

Cronbach's Alpha is .978

UNI 110 – Student's Perceived Learning

Item	N	Mean	Std. Dev.	α if item deleted
How to think critically	400	4.38	.817	.945
How to use ASU's online library	400	4.40	.816	.941
How to evaluate the credibility of a source	400	4.43	.804	.937
How to evaluate the relevance of a source	400	4.48	.766	.934
How to support an argument with evidence	398	4.54	.708	.936
How to cite sources	399	4.40	.842	.942
How to define an issue	400	4.43	.782	.939
How to debate an issue	397	4.52	.716	.938

Internal reliability of 0.946

ASU 150 – Student's Perceived Learning

Item	N	Mean	Std. Dev.	α if item deleted
The importance of self-awareness	403	4.30	.861	.961
The impact self-talk can have on my success	403	4.27	.898	.961
How to work effectively in a group	403	4.24	.909	.960
How to self-reflect to make changes that support my goals	403	4.31	.883	.959
How to identify tasks I commonly procrastinate on	402	4.30	.924	.961
The value of working in groups	402	4.20	.960	.963
How to effectively manage my time	403	4.25	.956	.961
The impact my choices can have on my success	403	4.33	.904	.959

This scale has an alpha score of 0.965.