

Proactive Advising in Admission Services:
Minding the Gap in Effective Communication through Text Messaging

by

Katherine I. O'Malley

A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

Approved March 2018 by the
Graduate Supervisory Committee:

Carl Hermanns, Chair
Linda Caterino
Glen Fogerty

ARIZONA STATE UNIVERSITY

May 2018

ABSTRACT

It is vital for schools to have qualified teachers educating our children. Institutions with teacher preparation programs supply a valuable service to their communities by providing classrooms with devoted professionals who thrive on helping children learn, and the Teachers College, where this study is set, is one such institution. The Teachers College offers two pathways to gain teacher certification: a traditional bachelor's degree in teaching areas such as elementary, secondary, or special education, as well as master's degrees in those same teaching areas which offer students with a bachelor's degree in an area other than teaching, another pathway to teacher certification. Many people who receive their bachelor degrees and then return to college to earn advanced K-12 teacher education degrees are from the millennial generation. The decision to return to college to earn a master's degree with teacher certification can be a stressful one. Millennial students seeking teacher certification often have fulltime jobs and families, and therefore need the process of returning to school to be quick and efficient. How well these prospective students communicate with the admissions staff at their school of choice will determine if they receive the information needed to complete their applications. The focus of this study is to investigate if a proactive advising text message innovation developed for this study called TextEd, used during the admission process for graduate level, teacher certification programs at the Teachers College, affected applicant communication levels and customer satisfaction through the application process. More specifically, surveys and interviews were conducted with applicants from three teacher certifications programs to determine if TextEd was an effective tool for communication with millennial applicants. Results indicated that applicants' preferred method of

communication was their cell phone, and an increased level of customer satisfaction occurred when using a proactive advising approach with text messaging during the admissions process.

Keywords: millennials, communication, text messaging, proactive advising

DEDICATION

I dedicate this work to my family. Your encouragement and belief in me never wavered.

I love you all very much!

ACKNOWLEDGMENTS

First, I want to acknowledge my husband, Mike, who encouraged me to embark on this journey. His love, untold sacrifices, and complete dedication to my goal ensured my success. All you did for the family and me while I was at my desk writing is immeasurable and I am in awe of your selflessness. I also share this accomplishment with my children, Ryan, daughter-in-law Shannon, Amanda, Kyle, and Corey, who never failed to listen to me talk endlessly about my research and gave guidance when warranted. To my parents, Neil and Judy, you instilled in me the desire to learn and never give up; for that I am deeply grateful. To my Grandson Ethan, follow your passion in life. Like Grandma Kathy, it might take a while to find, but never give up!

I would also like to thank my dissertation committee chair, Dr. Carl Hermanns, whose kind guidance and patience was just what I needed to finish my doctoral journey. Dr. Linda Caterino, I found our talks over the years immensely beneficial and it was fun discovering our mutual acquaintances. Without your guidance, I would not be here today. I would also like to thank Dr. Glen Fogerty for the initial inspiration to study Millennials. Your course on the American College Student was just the start of this journey and I am grateful for your inspiration and guidance. To Sue Henderson, thank you for believing in me! To my co-workers, thanks for all the collaboration and guidance!

To my doctoral cohort, I cannot believe it is over, and we are done... what a long but wonderful three years! Thank you for all the encouragement, guidance, and friendship through this doctoral excursion. I hope we all make a difference in the world of education!

TABLE OF CONTENTS

	Page
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER	
1 INTRODUCTION	1
Local Context.....	3
Personal Context	4
2 THEORETICAL PERSPECTIVES AND RESEARCH GUIDING THE PROJECT.....	12
Theoretical Perspectives and Related Research.....	12
Dimensions of Student Success	12
Proactive Advising.....	15
Uses and Gratification Theory (UGT)	20
The Millennial Generation.....	22
Relevance to Study.	25
The Innovation for this Action Research Study.....	28
3 METHOD	31
Introduction.....	31
Setting	31
Participants.....	32

CHAPTER	Page
Research Methodology	34
Instruments and Data Sources.....	34
Quantitative Measures.	35
Qualitative Measures.	36
Procedure and Timetable	38
Data Analysis Plan.....	40
Quantitative Data.	41
Qualitative Data.	42
Review of Efforts to Enhance Validity and Trustworthiness	43
Role of the Researcher.	43
Validity and Trustworthiness.....	43
4 DATA ANALYSIS AND RESULTS.....	45
RQ1: How and to What Extent do Applicant’s Communication Needs Influence Cell Phone Use?.....	46
RQ2: To What Extent does TextEd Influence the Effectiveness of Communication Between Applicants and MLFTC Staff?.....	59
RQ 3: How and to What Extent does TextEd Influence Applicants’ Customer Satisfaction during the Application Process?.....	62

CHAPTER	Page
RQ 4: How do Applicants Experience TextEd as Effective Communication?	69
.....	69
Summary of Overall Findings.....	74
5 DISCUSSION.....	77
Integration and Triangulation of the Quantitative and Qualitative Data. ...	77
Results in Relation to Theoretical Frameworks and Related Literature	80
Lessons Learned.....	82
Limitations	83
Implications for Practice	84
Implications for Research	85
Conclusion	86
REFERENCES	89
APPENDIX	
A TEXTED PARTICIPATION EMAIL – INTERVENTION GROUP.....	95
B TEXTED PARTICIPANT EMAIL – COMPARISON GROUP.....	98
C CELL PHONE USAGE AND COMMUNICATION PRACTICE SURVEY	
.....	101
D NEWLY ADMITTED STUDENT INTERVIEW PROTOCOL –	
INTERVENTION GROUP.....	112

APPENDIX	Page
E NEWLY ADMITTED STUDENT INTERVIEW PROTOCOL – COMPARISON GROUP.....	114
F DATA COLLECTION INSTRUMENTS AND JUSTIFICATION.....	116
G APPLICATION CHECKLIST.....	119
H INTERNAL REVIEW BOARD APPROVAL DOCUMENTATION.....	121

LIST OF TABLES

Table	Page
1. Cell Phone Use and Communication Practices (CPUCP) Survey Description	36
2. Timeline and Procedures of the Study	40
3. Descriptive Statistics for Interpersonal Communication Motivations.....	47
4. Descriptive Statistics for Cell Phone Use Affinity Construct.....	49
5. Descriptive Statistics for Cell Phone Use Motivations.....	50
6. Comparison of Initial Status	52
7. Main Themes, Related Ideas, and Assertions Related to Communication Needs and Cell Phone Use.....	53
8. Independent Samples T-Test results on Effective Communication Sub-Constructs	60
9. Descriptive Statistics of TextEd as Effective Proactive Advising.....	61
10. Independent Samples T-Test results on Customer Satisfaction Sub-Constructs ..	64
11. Main Themes, Related Ideas, and Assertions Related to Customer Satisfaction through Application Process by Participation Group	65
12. Main Theme, Related Ideas, and the Assertion Related to TextEd Experiences..	70

LIST OF FIGURES

Figure	Page
1. Office of Graduate Student Services Communications and Outreach Strategies.....	8
2. Proactive Advising model.....	18

Chapter 1

Introduction

In February 2012, then U.S. Secretary of Education, Arne Duncan, launched a policy framework program called *The RESPECT Project, a National Conversation about the Teaching Profession*. This represented a plan to bring together teachers, administrators, policymakers, and business and community leaders to collaborate and bring their voices to a discussion on how to elevate and transform the profession of teaching by recognizing educational success, professional excellence, and collaborative teaching (U.S. Department of Education, 2013). Conversations with educators revealed seven critical components identified as key in transforming the teaching profession. Among the seven was a component called, *Top Talent, Prepared for Success*. Part of this component calls for attracting a diverse group of highly qualified individuals who want to become teachers. Part of the vision of this project is to develop innovations in the way teacher preparation programs recruit, support, and prepare future educators.

Teacher shortages are sweeping the nation, with most states reporting a shortage of certified teachers, especially in the areas of science, technology, engineering, and math (Rich, 2015). Factors contributing to the shortage of teachers range from an improving economy to the retirement of the baby boomer generation of teachers (Westervelt, 2015). People will always come and go from the teaching profession, but there has been an increase in teachers leaving as more and more are becoming disillusioned with their jobs (Strauss, 2015). Too much time teaching to the standardized tests and very little authentic instructional time reduces a teacher's flexibility in delivering a high-quality education, increasing frustration and stress amongst teachers (Strauss, 2015). Moreover, teachers

can be scapegoats for politicians and policymakers, taking the blame for why children are not excelling in schools (Westervelt, 2015). Often linked to teacher performance evaluations, the pressures and constraints of high-stakes testing has led many teachers to question whether teaching is a worthy career to pursue, given the limited control over their professional lives and the increasing negative talk about teaching as a profession (Westervelt, 2015).

Enrollment in traditional teacher preparation programs is also down, in some states by 50%. As the economy improves and the teaching profession is seen as less desirable due to high-stakes testing and lack of flexibility, college students may be disinterested in seeking low paying teaching positions in an increasingly politicized environment (Westervelt, 2015).

Arizona is experiencing the teacher shortage directly. In our state, 24% of the educational workforce will be eligible to retire within the next couple of years. The attrition rate of new teachers is also adding to the shortage. Within the 2013-2014 school year, 29% of classroom teachers had less than three years of experience (Arizona Department of Education, 2015), and 24% of first-year teachers and 20% of second-year teachers left their positions due to challenges within the profession including lack of support, funding problems, and the absence of belief in teaching as a stable, worthwhile career (Arizona Department of Education, 2015). Very few Arizona school districts recruit only within the state of Arizona, as there are not enough teacher candidates available to choose from within the state (Arizona Department of Education, 2015).

The Mary Lou Fulton Teachers College (hereafter Teachers College) at Arizona State University (ASU) is a significant contributor to the teaching profession in Arizona.

To address the teacher shortage and meet the demands of the changing profession, the Teachers College must recruit, admit, enroll, and retain bright and highly motivated individuals in its teaching certification programs. Spicuzza (1992) argues that retention is a result of satisfied students; therefore, from a student services perspective, the Teachers College must provide an excellent customer service experience to ensure applicant and student satisfaction as students progress through the admissions and enrollment process and continue on to successfully complete their teacher preparation program.

Local Context

Arizona State University is located in Tempe, a part of the Phoenix metropolitan area, the sixth most populous city in the United States (Phoenix Population, 2016). ASU has an enrollment of over 60,000 undergraduate and 14,000 graduate students distributed across five campuses across the State of Arizona, as well as online students from over the U.S. and foreign countries (Fall 2013 Enrollment Summary). The Mary Lou Fulton Teachers College currently serves 5,100 students in both undergraduate and graduate programs. The student population of the Teachers College is approximately 76% female and 24% male, with 67% of the students being white, 20% Latino, 4% black, and 9% other races (Fall 2013 Enrollment Summary).

The Graduate Admissions office is part of the Office of Graduate Student Services (OGSS) department in the Teachers College. Staff members exercise autonomy over how they carry out their job in most respects. Enrollment management and graduate student services departments, consisting of staff members who recruit, admit, and advise students within Graduate Student Services, has several offices distributed across both the Tempe, West, and Polytechnic campuses. This distributed model helps serve the advising

needs of students on all campuses. There are also further divisions between recruitment, and admission operations among campus-based programs and the online programs, as ASU contracts out some of the enrollment management functions for online programs to an outside vendor.

The decentralized nature of this organizational structure allows team members to be more autonomous within their job responsibilities, enabling a varied, personalized customer service experience for prospective students. However, the communication methods used with prospective students during the application process are often merely repeated best practices of other departments or institutions. From recruiting to admissions and other departments too, institutional isomorphism (DiMaggio & Powell, 1983) can tend to make one department act like other departments, as the various departments face similar environments related to communication during the recruitment, retention, and education of students. From a theoretical perspective, DiMaggio and Powell (1983) argue that isomorphism is a constraining process that pressures organizations to model themselves after other similar organizations in their field they have seen as being successful. In the context of ASU, this can lead to a tendency to replicate best practices across departments, which may contribute to a status quo approach that slows down or stifles the implementation of new and innovative processes, including communication innovation.

Personal Context

I believe people should have the opportunity to pursue their dreams; however, life circumstances do not always provide for us to do all the things we want to do. Nevertheless, when people decide to explore new educational opportunities, find new

purposes and become teachers, I believe I should do all I can to help them make their dreams a reality. This customer service oriented philosophy gives my professional practice purpose and direction. Not too long ago, I also wanted to make a change and decided to pursue a bachelor's degree in sociology, and a Master's degree in Higher and Post-Secondary Education soon followed. During this time, I worked with Native American students pursuing law degrees. While I served in this position, I was also involved in the application process for a summer program for Native American college students who were thinking of pursuing a master's or professional degree and I discovered that I had a passion for helping these students through this process. Eventually, I moved into a position with the Teacher's College as an Admissions Specialist, where I put my customer service skills to work guiding applicants towards admissions into teacher preparation and other education-related programs. Every day I see firsthand the dreams these applicants have to make a difference for children and youths in their local communities.

I began my new position at the Teachers College in June of 2014. The Admissions Specialist job was a newly created position to manage tracking, reviewing, and admitting students to face-to-face graduate programs. The task of tracking, reviewing, and admitting students previously fell upon the academic advisors for the face-to-face programs. During certain busy times of the year when academic advisors were occupied with on-boarding new admits and enrollment, the admission portion of their job responsibilities fell somewhat by the wayside as the more pressing, immediate concerns of current students took precedence. Since the job of admitting new students was only one of an academic advisor's responsibilities, each advisor had their own way

of performing the task. Therefore, customer service opportunities during the admissions process were inconsistent at best. As I took over the role of admissions specialist, I trained with each of the academic advisors and learned from them about the programs they advised for and how the process of admitting students differed for each of their programs.

When I finished my training, I found myself frustrated with the communication process used with applicants. One of my initial responsibilities was to let the applicants know if electronically uploaded application materials were corrupt or missing in their application file. I began my job towards the end of an admission cycle, and it amazed me that those who had recently applied did not respond to my email queries about sending in the missing documents to complete their application. Knowing that calling applicants on the phone was an acceptable method of outreach, I tried that as well and still rarely had an applicant answer the phone. I found myself first asking my supervisor and then other staff members if they too experienced unresponsiveness from applicants or students....and I received a resounding yes! This was indeed a problem! My current communication practices were ineffective to connect quickly and effectively with applicants.

However, what was a workable solution? A possibility came by way of an applicant who, on the last day I could admit to a program, asked if I could update him on the status of an expected letter of recommendation by text message. He told me he would be away from his computer all day at work and therefore could not answer the phone or look at or respond to email correspondence, but he would be able to read a text message. Of course, as a mother myself of 20-something children...millennials...I knew this

generation of young adults was busy, hardly ever answered their cell phone, and only skimmed through their emails occasionally...but would usually respond quickly to a text message! I felt I was onto something and shared my idea with my supervisor, only to be told all communication from me to applicants needed to remain official university communication and there wasn't money in the budget at this time to add text messaging software to our Customer Relations Management (CRM) system. Therefore, I then began to look at how the other departments within my work environment communicated with their contacts. The recruitment team had many ways they communicated and made connections with prospective students. They had flyers, in-person information sessions, and webinars, as well as the standard emails and phone calls to get their informational message out to prospective students. Academic advisors also used regular in-person meetings and classroom visits as well as email and phone calls to establish their connections with enrolled students and disseminate needed information. Both departments, which worked with students' right before me and just after me, had longer periods of contact with students and different methods in which to communicate and provide excellent customer service. Both of these departments had one-on-one, staff-to-student or "high touch" communication strategies, whereas I did not. Figure 1 displays the current communication strategies.

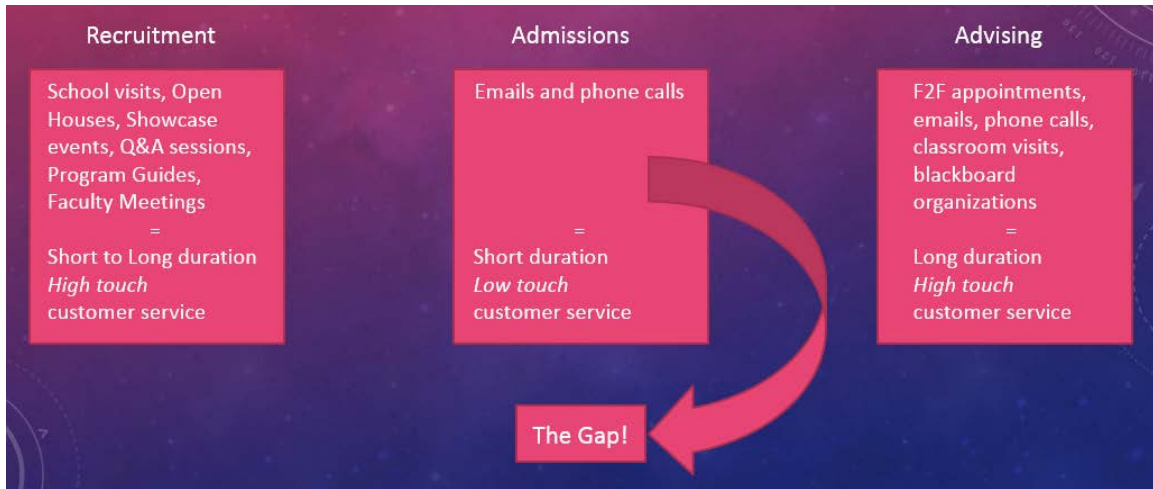


Figure 1. Office of Graduate Student Services current communications and outreach strategies.

I believe it is essential for an institution to provide its students with consistent support throughout their higher education journey, from the decision to pursue a degree, until graduation and beyond. My efforts to increase the level of good customer service for the applicants I served during the admissions process seemed stalled. I needed to communicate with applicants in a way they found easy to use, and I needed to be proactive in my message delivery to ensure good customer service.

A story from my many experiences with applicants comes to mind to describe the problem of why, after already receiving a bachelor's degree and having committed to make a change and move into education, a prospective student could still be unsuccessful in gaining admittance to Teachers College. Jennifer was one such applicant who chose to make a change in her life and become a teacher. She earned her undergraduate degree in business at the urging of her parents so she could, in their words, *earn a good living*. Jennifer had worked a few years at a finance company directly after graduation, but she was never content doing this work. Yes, it paid well, but overall the position was not

personally fulfilling. Now that she was married and financially independent, Jennifer decided to make a career change and applied to graduate school to become a teacher. ASU was nearby, and it had an excellent reputation for producing respected teachers. One of Jennifer's best friends had graduated from the Teachers College, so Jennifer looked at the website one day and quickly applied. Jennifer told her friends and family she was going to be a teacher and had their support as she undertook this new chapter in her life. Immediately after she applied, Jennifer received a *thank you for applying* email from me, and I informed her we had received her application and asked her for the missing materials needed to complete her application. Jennifer quickly just skimmed my thank you email, so she never read where I had asked for missing documents. Repeated emails and phone calls to Jennifer went unanswered. Even though she went through the process of applying, effective communication between Jennifer and Teachers College staff did not occur, and therefore her application was incomplete and she could not be admitted and enroll in the upcoming semester.

I receive about 10 new applications a day from people like Jennifer who have already earned their bachelor's degree, but now they desire a master's degree to further their education. In the excitement of this decision, many have not taken the time to communicate with Teachers College staff to understand fully the program they chose or the correct way to submit a strong application and Jennifer was no exception. She did not reach out to the recruitment team for information on the program to which she applied, and she never read all the information available in emails from me, or on the Teachers College website. If Jennifer had communicated with the staff members at the Teachers College who are there to help during this process, she could have avoided many mistakes

she made in her application and realized what materials she needed to submit to finalize her application. The lack of effective communication practices compounded with poor application preparation meant Jennifer's dream of being a teacher might have faded away. Now Jennifer's story does have a happy conclusion, as eventually she submitted the needed materials to finalize her application and moved her start date to the next semester so she is now happily working towards her teacher certification in secondary education. However, this is not always the case, as most of the time when an applicant does not finish their application and gain admittance in their desired semester, they drop out of the process altogether and society loses a potentially great teacher.

From a personal and professional perspective, such outcomes are unacceptable. Moreover, from a systems perspective, they are unnecessary. By modifying communication practices with applicants, I believe it is possible to correct many of these errors stemming from ineffective communication with Teachers College staff. Thus, the purpose of my study is to test the efficacy of using text messaging for effective communication through a proactive advising approach with prospective students during the graduate school application process. Text messaging has become a normal part of our daily communication with friends and family. I believe Admission Services in the Teachers College should use this communication method with prospective students and applicants. For the purpose of this study, I developed TextEd, a text messaging intervention to inform, communicate with, and proactively advise applicants to graduate programs in the Teachers College during the admission process. TextEd allows admissions staff to communicate instantly with prospective students instead of relying only on email or phone calls for communication.

The following research questions guide my study:

1. How and to what extent do applicants' communication needs influence cell phone use?
2. To what extent does TextEd influence the effectiveness of communication between applicants and Teachers College admissions staff?
3. How and to what extent does TextEd influence applicants' customer satisfaction during the application process?
4. How do applicants experience TextEd as effective communication?

Chapter 2

Theoretical Perspectives and Research Guiding the Project

Considerable research exists on *Millennial Generation* students and their differences from previous generations. In the following sections, I examine several theoretical perspectives and bodies of related research that have informed and guided this action research project, particularly with regard to their relevance on communicating with millennial students.

Theoretical Perspectives and Related Research

Several theories and bodies of literature informed my action research study. I framed the context of student success within a combination of student development theories I call Dimensions of Student Success. The main theories from which I draw upon include Tinto's Sense of Belonging (2006), and Kuh's Student Engagement Theory (2008). Related literature, which guided the student success part of my study, includes proactive advising (Earl, 1988), Uses and Gratification Theory (UGT), synthesized by Katz, Blumler, and Gurevitch (1974), and the Interpersonal Communication Motives (ICM) model by Rubin and Rubin (1985), which informed my thinking on communication motives and medium choices. Related literature on the millennial generation and its connection with technology also guided this study. The following sections describe each theory, followed by a review of related studies that were applicable to my action research focus.

Dimensions of Student Success

Dimensions of Student Success is a construct that I developed to encompass theories explicitly linking student behaviors and effective educational and institutional

practice. More specifically, Dimensions of Student Success contributes to the understanding of why effective communication between the student and the institutional staff is a necessary connection that leads to retention and persistence through the application process, and results in enrollment and successful integration into the institution, the often overlooked, but critical, first steps leading to post-secondary graduation. The long established theories that underpin Dimensions of Student Success include a sense of belonging and student engagement. Although at times used interchangeably in educational research, each of these ideas or terms is unique in its definition and its contribution to a more robust understanding of student success (Wolf-Wendel, Ward, & Kinzie, 2009).

Sense of belonging. Colleges and universities consist of many social and academic systems, and integration into these settings represents a student's sense of belonging within that institution (Hoffman, Richmond, Morrow, & Salomone, 2002). Although most research on sense of belonging centers on the student as they start classes at an institution, it is also important to create a sense of belonging when a prospective student first contacts the institution about attending, in order to leverage that initial interest into an application and enrollment (Sloan, 2012). The greater a student's sense of belonging to an institution, the more likely they will persist, from initial interest through graduation, at that college or university (Hoffman et al., 2002; Heisserer & Parette, 2002). To establish a sense of belonging for a prospective student or applicant, it is important for the institution to provide opportunities for support, connection, and timely and useful feedback right from the start (Tinto & Pusser, 2006). Tinto and Prusser (2006)

argue that institutions must be committed to student success and provide the support, both institutional and academic, necessary for the student to succeed.

Engagement. Student engagement differs from a sense of belonging as it emphasizes actions institutions can take to increase connections between students and the institution (Kuh, Cruce, Shoup, Kinzie, & Gonyea, 2008). Kuh et al. (2008) studied the relationships between student behavior, institutional practices, and the conditions that lead to student success. The authors found that all students benefit from institutional programs that sustain high touch and attention during key transition points such as admissions and transferring into the institution. Kuh (2003) further argued that engagement starts with the decision to attend postsecondary schooling, not just during the first class.

What can the institution do to keep prospective students engaged from the point they exhibit initial interest in applying to graduate school through their successful enrollment? An important key to turning potential students into enrolled students is to make strong connections during the application process (Sloan, 2012). Today's college student thrives on interaction and connectedness, so they look for this in a higher learning institution as well (Hanson, Drumheller, Mallard, McKee, & Paula, 2011). When institutions engage students through student outreach efforts such as communication, meetings, and other information sources, they are building a strong connection through customer service. Interest in an institution quickly diminishes when a student feels *passed around*, so a strong commitment to quality customer service establishes a support system for new applicants (Sloan, 2012). When an applicant reaches out with questions about the application process, staff must make sure next steps are clearly and quickly

communicated to deepen the applicant's commitment and motivation to proceed through the application process. That said, prospective students often do not wish to have repeated contact about the college application process, so the best type of outreach to students is positive, nonjudgmental, efficient, and proactive in nature (Sloan, 2012).

The Dimensions of Student Success point back to knowing how to communicate best with the customers to keep them involved in the process, make them feel they belong at the institution, and engage them in meaningful ways to promote learning.

Proactive Advising

Retention of college students is a national priority (President's Council of Advisors on Science and Technology, 2012); however, retention during the application process is also a worthy goal, because if not admitted, an applicant never becomes a student to retain. Advising is a critical link in student retention at all levels, from admissions through graduation (Habley, 1981). Many applicants and students believe they can manage on their own without guidance from an advisor, but they are missing opportunities to establish relationships with caring campus staff that can assist in making the college experience the best it can be (Hunter & White, 2004). Advising is most successful with frequent and relevant contact between advisor and advisee (Waterhouse, 2016). Although some students reach out on their own to their advisor, many will not, and these students are the most at-risk of not remaining at the institution (Waterhouse, 2016). Therefore, instead of waiting for an advisee to contact the advisor looking for answers, advising should come to the student, allowing a building of a relationship with expected communication (Waterhouse, 2016).

There are many types of academic advising typically used to serve the *enrolled student*, who has already matriculated into a program by enrolling in classes. Advising is generally prescriptive, characterized by an authoritarian relationship, where the advisor tells the student what needs accomplishing, and the student following the instructions. With this prescriptive advisement, the student bears little responsibility in the decision-making and instead relies on the advisor for directions on what to do and when to do it (Heisserer & Parette, 2002). Developmental advising, a term first devised by Crookson (1972), denotes a shared responsibility between advisor and advisee that promotes the personal growth and development of the whole student and is not just a simple “You ask, I answer” relationship. The advisor helps the advisee sort through problems and directs them to resources (Heisserer & Parette, 2002). Intrusive advising, now known as proactive advising as it has fewer negative connotations than the original term, consists of deliberate interventions designed to enhance a student’s motivation and increase retention and persistence rates (Earl, 1988; Heisserer & Parette, 2002).

Proactive advising provides for reliable, clear communication and timely interventions. This type of communication is critical for retaining both applicants and students alike (Kuh, 2008). An effective proactive advising system provides prospective students with clarification on programs and progress towards their goals, whether that is finishing the application or graduating. Meeting a student’s high expectations with high quality sustained attention from institutional staff, with no gaps in customer service, helps the student feel a valuable part of the process, gaining the sense they belong at this institution and want to persist through the application process and enroll as a student (Hunter & White, 2004).

A proactive advising strategy is about getting to the crux of a difficulty for a student and recommending appropriate action (Earl, 1988). Proactive advising is providing applicants with the information they need, often before they request it, while establishing a strong relationship with the applicant or student at the same time (Varney, 2012). Proactive advising is best for students at risk of not following through on a process (Varney, 2012). Within my context, at-risk pertains to those applicants who did not thoroughly prepare for applying to graduate school and are missing the materials needed to review their applications for admission and who are therefore at risk of not finishing the process. Those applicants with incomplete applications due to missing documents and materials are more likely not to finalize their applications.

Retention in college is the outcome of a student's satisfaction with the college experience (Spicuzza, 1992). This idea also applies to applicants persisting through the application process. Spicuzza (1992) found satisfaction with a process begins with a strong customer service approach to meet the applicant's needs during the entire process, from application to graduation, with responsive services and support when required. Spicuzza also noted all academic advising should emphasize the student's needs, be timely, readily accessible, and be accurate in the information provided. Generally thought of as peripheral to teaching and classroom learning, academic advising is often prescriptive with the advisee following advice given to them, or developmental, as a teaching and learning interaction. However, proactive advising stresses interpersonal relationships between the advisor and advisee, to engage the prospective student in the process, intervene when necessary to sort out difficulties, and advocate for the applicant when working with another department on campus to resolve an issue (Wilson, 2004).

Varney (2012) noted proactive advising is different from prescriptive or developmental advising, as it includes pre-emptive contact with students. Figure 2 displays the proactive advising model.

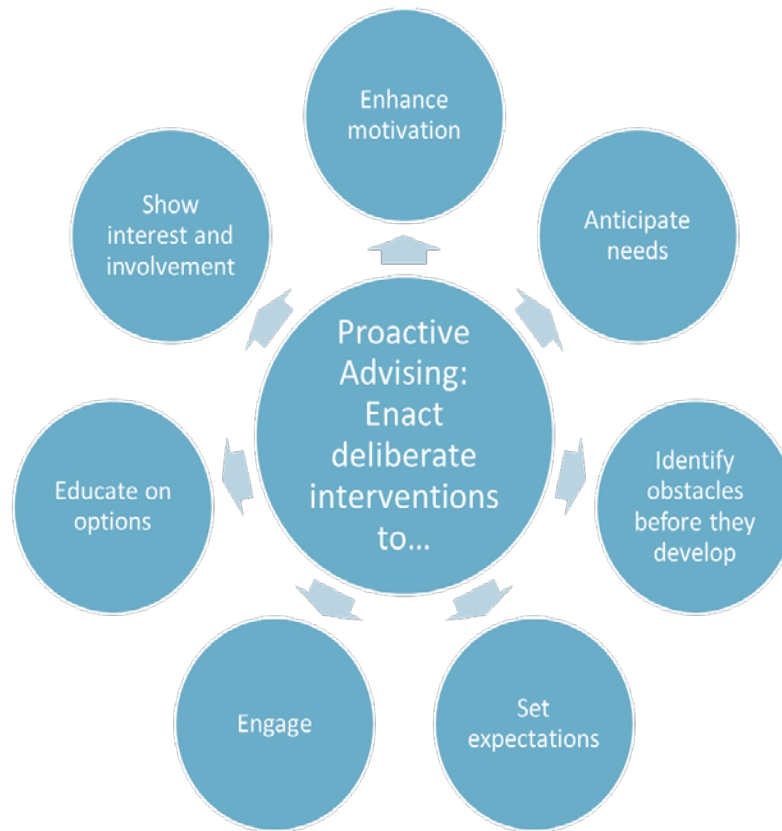


Figure 2. Proactive advising model. Adopted from Varney (2012).

Wilson (2004) also found that specific communication practices used by advisors could increase the interpersonal relationship between advisor and advisee. Quality advising directly connects to effective and strong communication between advisor and advisee, supporting and facilitating learning (Zhang, 2015). Computer Mediated Communication (CMC) is communication that blends both interpersonal communication between two people and mass communication with a broad audience. CMC provides several methods of interpersonal communication useful for advising such as email, but

also includes more recent developments in technology such as Facebook, instant messaging, text messaging, and chat rooms (Wilson, 2004). Wilson also stresses that advisors should communicate with their advisees in a way that offers brief, clear messages with links to relevant materials and information, provided quickly, reducing lag time between sending and responding, as long lag times can lead to ineffective communication.

Schwebel, Walburn, Jacobsen, Jerrods, and Klyce (2008) questioned whether the use of proactive advising by sending multiple reminders of advising appointments using email and phone calls would increase the frequency of scheduling and keeping advising appointments. The researchers randomly assigned students to two groups, a proactive advising group using a CMC communication strategy, and a group that received no proactive advising. The proactive advising group received extra, repeated emails and phone calls to encourage, but not require, students to make and attend advising appointments. The control group received the typical amount of regular reminders to use advising services. Schwebel et al., (2008) found that those students in the treatment group were more likely to make and keep advising appointment than those students in the control group. Ninety percent of students who received proactive advising made and kept advising appointments sooner in the semester, where only 78% of students in the control group made and kept advising appointments, and these appointments were much later in the semester (Schwebel et al., 2008). The researchers concluded that proactive advising worked to increase the number of students who used advising services during their first semester of college.

Uses and Gratification Theory (UGT)

UGT seeks to explain consumers' choice of media, such as newspapers, magazines, and television from psychological and sociological perspectives (Rubin & Rubin, 1985). The theory proposes that individuals need to have some use for the media message, or the media will have no effect on them or their life (Rubin & Rubin, 1985). Rubin and Rubin (1985) argue that the process begins with individuals' biological and psychological needs, which interact within society to create a need that individuals seek to address through problem solving or gratification seeking solutions. Therefore, UGT proposes an approach that differs from other communications theories that typically seek to show the effects of media influences on individuals. The UGT approach argues that individuals' needs and predispositions identify the uses and choices an individual will make for different media.

In a related study, Rubin and Rubin (1992) used UGT to examine interpersonal communication motives as a means to fulfill goals. The authors wanted to identify important experiences of interpersonal motives and to examine the relations between these experiences and the motives. Rubin and Rubin contended that people communicate to gratify their needs and wants. Further, how they resolved these needs demonstrated their motivation, and therefore influenced their selection of interpersonal communication partners, strategies, and expectations about the eventual success of the communication. The two main antecedents affecting why people communicated with each other were *locus of control* and *life position* (Rubin & Rubin, 1992). Locus of control was especially important in interpersonal communication that influenced others. Specifically, internal control reflected the belief that the person's behavior provided the control. By

comparison, external control reflected the belief that chance, circumstances, fate, or powerful others controlled outcomes. Therefore, individuals' locus of control influenced their beliefs about themselves and provided some explanation of their behavior (Rubin & Rubin, 1992). Further, the authors maintained that people's life positions with regard to health, life satisfaction, social activity, and socioeconomic status related to their interpersonal communication use and choices. Moreover, results showed that if people were active participants in satisfying their needs, had more control and social resources, and felt more self-reliant; they would use multiple sources of communication media for interpersonal communication, whereas those who felt less satisfied with life often turned to just one source as a communication channel (Rubin & Rubin, 1992). Thus, they designed strategies of communication usage to seek certain outcomes from individuals, and address social situations, psychological needs, and predispositions of those people.

Interpersonal communication motives model (ICM). Rubin and Rubin (1985) argued for broadening the definition of UGT and developed ICM as a model of communication motives that was not strictly limited to mass communication mediums such as television or newspapers. Instead, ICM includes interpersonal channels of communication as coequal alternatives, rather than functional alternatives to one another to explain individuals' needs and motives for using media to attain satisfaction (Graham et al., 1993). Individuals who experience certain needs then choose a particular media medium to satisfy those needs. Thus, the reasons people choose certain media are the same reasons people decide to turn to certain other people for interpersonal communication opportunities (Graham et al., 1993; Rubin & Rubin 1985).

Leung (2007) studied college students, using media gratification and motivation frameworks to understand why these college students were motivated to use text messaging as a communications medium. Leung found college students had various choices when the need to communicate arose, with cell phones and email being two of the most common preferences for this age group. The motivations for cell phone use for these students included conversation, education, escape and diversion, and as a status or fashion symbol to satisfy the needs of information gathering, entertainment, identity, and companionship. Results also indicated that students found using cell phones for calling *to talk* intrusive and time consuming. Students used email as well, but did not consider it an immediate form of communication. Text messaging was the most preferred method of communicating with cell phones in this study because it permitted direct mediated contact in a casual way (Leung, 2007). Leung found students preferred text messaging because it provided a constant online presence and enabled them to connect easily with friends and family. Leung's findings showed that college students preferred text messaging to other communication methods because it was quick, convenient, easy to use, had entertainment value, helped coordinate activities, and was an easy way to stay informed. Results from this research study also indicated that students who were apprehensive about face-to-face communication found text messaging helped them to communicate with more confidence in interpersonal communication situations.

The Millennial Generation

College students today use information and communication technologies in much different ways than any other previous generation of students (Junco & Cotten, 2011). Since most of today's college students are from the millennial generation (Norén, 2004),

it is important that institutions, and their staff, understand the millennial generation and how their differences from previous generations shape their college experiences from academic pursuits and social interactions to communication preferences and patterns. The millennial generation consists of those people born between the early 1980s and the early 2000's (Norén, 2004). This generation grew up in a digital, information-filled society where instant gratification was the norm, unlike earlier generations who grew up in a world bereft of digital devices (Levine & Dean, 2012; Tyler, 2007). Prensky (2005) coined the term digital native to describe how members of this generation are native users of technology, who find it easy to adopt new ways of technology-based communicating such as blogging, social networks, and instant messaging. Millennials are the first generation that will live cradle to grave in this digital era of communication (Kleinglass, 2005; Palfrey & Gasser, 2008). With a constant connection to family, friends, and the world via personal computing devices, millennials are rarely all on their own or unsupported (Palfrey & Gasser, 2008).

Levine and Dean (2012) report that millennials make personal and social connections through digital groups on social media, with constant picture taking, text messaging, and live video streaming. This generation of students and young workers have lived much of their lives online and unlike those just a few years older, did not have to relearn anything to live their lives totally immersed in the digital era because they learned these things as they grew up; it is the only world they knew (Palfrey & Gasser, 2008). Palfrey and Gasser (2008) also suggested that because digital natives have lived so much of their lives online, they do not readily distinguish between online and offline identities. Junco and Cole-Avent (2008) stated in their research that Millennials often referred to

online conversation as *talking* because for them, online communication was such. Palfrey and Gasser also reported this generation is set apart from everyone else by the amount of time they spend using digital technology and devices, their propensity to multitask easily, and their use of mediated devices to express themselves, access information, and otherwise engage in interpersonal communication. Information technology has changed our society in terms of how we work, play, learn, and communicate (Kleinglass, 2005).

Young people today are likely to carry mobile devices, such as cell phones, everywhere they go, which of course includes when they attend college. They want to stay connected with their friends, family, and co-workers, download music quickly and access information on the internet at a moment's notice, and most prefer instant messaging and texting as communication modes (Junco & Mastrodicasa, 2007). Research indicates that almost all college students report owning a cell phone with built-in features such as text messaging and internet connectivity and expect to use this device for staying connected while in school (Auter, 2007; Junco & Cole-Avent, 2008). Some college students have no other means of accessing the internet and have become Smartphone dependent when it comes to connecting with others and getting information (Smith, 2015). Even when they are sleeping or studying, Millennials have their cell phones or other technology on and ready to communicate (Heiberger & Harper, 2008).

Levine and Dean (2012) found that the immediacy of digital communication has increased this generation's impatience with waiting for an answer and this impatience was creating a deficit in their social skills. Instantaneous electronic communication demands constant attention. Messages are short, and the millennial generation carries on multiple interpersonal conversations at once on their cell phones through text messaging

(Heiberger & Harper, 2008). It is normal for this generation to send hundreds of text messages a day to friends and family, to stay connected, and they use text messaging as a communication method for other important connections such as work or school (Palfrey & Gasser, 2008). So focused on the multitasking needs of their busy lives, millennials often suffer from communication apprehension when it comes to social communication and just prefer short bursts of information (Ericson & Gardner, 1992). Palfrey and Gasser (2008) discussed digital natives as having shorter attention spans than previous generations because of the sound-bite culture in which they live. Many millennial generation students are also in constant contact with their parents because that was how they grew up, with lives planned and organized around activities that included their parents (Levine & Dean, 2012). Often referred to as *high-touch*, this generation expects immediate interaction and responses, but not necessarily in-person contact, when communicating with others (Junco & Cole-Avent, 2008). Shoup, Gonyea, and Kuh (2009) argue that because the millennial generation often had childhoods that were so organized and supervised, the close and constant contact with their parents and other important adults continues into the college years and often can be the reason these students needed more guidance while in school.

Relevance to study. The millennial generation arrived on college campuses beginning in 2002, and many of these young adults decided to pursue an advanced degree after completing their bachelor's degree. Because they lead busy lives, students' time is limited so they needed ways to communicate quickly and efficiently. Millennial students have used cell phone technology to stay in touch with friends because they always have their devices nearby. For other interpersonal communication situations such as those

associated with work and school, they found those institutions less likely to communicate with them by their preferred method of using the cell phone (Leung, 2007). This digital disconnect between those who have been applying to graduate school and those who help them through the procedure has caused stress for potential students. Currently, an admissions advisor's first choice to contact applicants with a question may be to call them on the phone. Prospective millennial generation students, however, may screen all their calls, wanting only to speak with friends and acquaintances and not answer unknown phone numbers. Instead, these prospective students have tended to prefer email, or another electronic communication method, as the first choice for contacting them (Leung, 2007). In response, most admission advisors have contacted prospective students by email, and the Teachers College has been no exception. Nevertheless, simple instructions can take paragraphs in an email and many people, especially those in the millennial generation, have not demonstrated the patience to read a long email. They prefer quick questions and responses they read on their phone or other digital, mobile devices (Carlson, 2005). Carlson (2005) also noted that Millennials were inherent jugglers who engaged in multiple forms of communication simultaneously; so lengthy communication interrupted this flow of constant information exchange.

Consequently, there is a need for admissions advisors and other student services personnel to explore ways to use technology to communicate with millennial students, and students of all ages in this modern technology-filled world, more effectively.

For example, Naismith (2007) examined text messaging as a tool to integrate into the staff and student communication processes at the University of Birmingham in the United Kingdom. This study used text message generating software called *Studylink* to

examine the effectiveness of using text messaging as a communication tool for facilitating communication between program staff and students. The author found that the students believed text messaging was the most effective way to get information when timing was critical, and the staff agreed because they believed students did not check their email often. This study found positive student perceptions about receiving text messages from college staff and demonstrated the usefulness of this communication approach for higher education practitioners. Overall, it showed that text messaging communication processes were successful, and both staff members and students benefitted from its use (Naismith, 2007).

In another study, Weitzel, Bernhardt, Usdan, Mays, and Glanz, (2007) examined the use of text messaging as a tool to send targeted messages to college students to increase their self-efficacy in handling alcohol consumption and to reduce the negative consequences of drinking at a university in the southeastern United States. Both the control group of 20 students and the treatment group of 20 students had hand-held computing devices with which they did a survey each day about their alcohol consumption on the day before. The intervention for this study was to send the treatment group personalized text messages on the provided hand-held devices each day specifically designed for them depending on their survey responses concerning daily alcohol consumption. The authors found participants in the treatment group reported receiving all text messages that were sent, thought the messages were informative, and some participants reported the messages as fun. However, they also felt that daily messages were too often. Additionally, the treatment group reported drinking fewer drinks than participants in the control group, who did not receive tailored messages every

day about safe drinking. Participants in both the treatment and control groups were asked if they received future safe drinking messages, how would they like to receive these messages, and 65% said via text message while the other 35% said by email (Weitzel et al., 2007). This study showed technology-based innovations were useful in reaching college-aged students to modify behavior.

The Innovation for this action research study

The research reviewed in this chapter, along with my own personal experience, strongly supports the argument that texting has become a regular part of our daily communication with friends and family. So why is it we do not routinely use this communication method with prospective students, who prefer to communicate by text (Leung, 2007)? In my daily practice, I saw our current communication practices as ineffective for connecting with today's technology proficient applicant. TextEd is a text messaging intervention I developed for my action research innovation to inform and communicate with applicants to graduate programs in the Teachers College. Texting allowed me to communicate instantly with prospective students, instead of using just email or phone calls. In addition, this tool for communications was not costly to the University. Although software exists to streamline this process, this intervention used text-from-email in Microsoft Outlook, an email software program, with all text messages also sent to the student's school email, so the communication was *official communication* from the university and saved in the students CRM profile. All cellular carriers offer a text-from-email function that allows an email to be sent directly to a person's cell phone by entering the recipients cell number paired with the provider's unique email domain. This creates an email address that functions like any other email address, but the recipient

receives the email on their cell phone as a text message. For example, when an applicant's cell phone number pairs with Verizon's unique domain it will then make a new email address that will go directly to their cell phone as a text message 6025551234@vtext.com. The applicant can reply to this text message and it will go directly back to the admissions staff's email Inbox.

In this action research study, I utilized text messaging for communicating time-sensitive information and as an instant notification for information sent by email. Examples included updates on application status, reminders to send in transcripts or other missing materials, as well as information on approaching deadlines.

The TextEd intervention included proactive communication that I expected to break down the barriers to effective communication that unanswered phone calls and unread or skimmed emails often create. Additionally, many students do not have cell phone data plans to connect to the internet or computer internet access readily available, so I anticipated that the TextEd communication method could increase access to admissions staff and possibly other student support personnel for quicker information gathering and resolution to problems. Disadvantages to texting applicants included the 160-character limitation of a text message. Therefore, TextEd messages needed to be concise, or direct the applicant to their email for more information.

To be successful in college at any level, students need to stay connected and involved in the classroom, extracurricular activities, and with their professors and other college support staff (Astin, 1999). To enroll students in classes, a university must first admit them. The admissions process can be complicated, and often prospective students have not reached out to recruiting staff before applying, so their applications are

incomplete. Admissions staff needs to communicate with these applicants to help complete their applications in a timely manner, in order for the application to be considered for admission. Communications from a person at the university whom the applicants had never had contact with before often goes unnoticed and gets lost in a sea of other emails. Thus I hypothesized that it would be beneficial to communicate with these prospective students in a way they prefer and already use effectively – text messaging – so they would be able to complete their application. By adding text messaging to the tools I used to communicate with prospective students, I expected students would complete applications with less frustration, thus increasing their satisfaction and success with the admission process.

Chapter 3

Method

Introduction

The purpose of this study was to investigate if TextEd, a proactive advising text messaging innovation I developed for this study, affected applicant communication levels and customer satisfaction during the application process for graduate level, teacher certification programs at the Teachers College. This chapter describes the methods I used to answer the following research questions:

1. How and to what extent do applicant's communication needs influence cell phone use?
2. To what extent does TextEd influence the effectiveness of communication between applicants and Teachers College admissions staff?
3. How and to what extent does TextEd influence applicants' customer satisfaction during the application process?
4. How do applicants experience TextEd as effective communication?

Setting

The setting for this study on the efficacy of the TextEd intervention for student outreach and communications within the Mary Lou Fulton Teachers College (Teachers College) at Arizona State University (ASU) was the Office of Graduate Student Services (OGSS), where I work as an Admissions Specialist on the West campus. ASU has an enrollment of over 74,000 students across the State of Arizona, as well as online students from all over the U.S. and abroad (Fall 2013 Enrollment Summary). The Teachers

College has an enrollment of approximately 5,100 students' enrolled in both their undergraduate and graduate level programs.

OGSS attends to the student services needs of 2,300 graduate students in various programs, both in-person programs and online, seeking non-degree certificates, masters, and doctoral degrees, with many programs leading to teacher certification. Within the OGSS is the Admissions department, which helps students with their applications, reviews completed applications, and admits students to approximately 30 in-person and online graduate degree and certificate programs. The online and in-person Teachers College admission offices are located on the same West campus, yet primarily work independently of each other.

Participants

Teachers College applicants and newly admitted students for three teacher certification programs participated in this study. Applicant participants included nine applicants to the spring 2018 Secondary Education, Masters with Arizona Teacher Certification program, (SED MAC), 11 applicants to the spring 2018 Special Education, Masters with Arizona Teacher Certification program, (SPED MAC), as well as 10 applicants to the spring 2018 Elementary Education, Masters with Arizona Teacher Certification program, (EED MAC). The participant's gender demographics were 70% female and 30% male. The ethnicity of the participants were 70% white, 24% Hispanic, 3% black, and 3% other races. Both of these demographic statistics closely reflect the overall gender and ethnicity demographics of all students in the Teachers Colleges as noted in Chapter 1. I asked all applicants to these programs to participate in the study. Applicants who agreed to participate were randomly assigned to either the Intervention

group (I) or Comparison group (C). Random assignment consisted of alternating between Intervention and Comparison by program (i.e., SPED 1 = I, SPED 2 = C, SPED 3 = I, SPED 4 = C; SED 1 = I, SED 2 = C, SED 3 = I, SED 4 = C; EED 1 = I, EED 2 = C, EED 3 = I, EED 4 = C). Applicants typically apply three to six months before the start of spring semester programs. I recruited the participants from a convenience sample of all students who applied to the SED MAC, SPED MAC, and EED MAC programs for spring 2018 semester. Convenience sampling is selecting participants who are easy to access under certain conditions (Flick, 2014). I used this sampling technique because only certain teacher certification programs were accepting applications during the data collection timeframe of fall 2017. All applicants to these teacher certification programs held bachelor degrees or higher in different fields, and decided to pursue a post-bachelor's master degree in teaching.

After the OGSS admissions department received each application for the above mentioned teacher certification programs, I contacted the applicant by email to participate in the study. They received the participation email for either the Intervention group or Comparison group. As described above, I determined their placement in either group through random assignment as they came into the application system, alternating between Intervention and Comparison groups. I asked applicants to respond to the email indicating their interest in participating in the study. For those applicants assigned to the Intervention group, I kept a record of each participant's unique email-to-text address on a spreadsheet for ease of access to this unique identifier. Please see Appendix A for the Intervention group participation interest email. Applicants assigned to the Intervention group received proactive advising communications through the TextEd, text-messaging

intervention. Applicants assigned to the Comparison group received only the standard communication practices used by admissions staff of emails and phone calls. Please see Appendix B for the Comparison group participation email. Applicants who participated signed the informed consent document and scanned and/or returned it to the researcher by email or in person.

Research Methodology

I performed this study using an action research methodology. Action research is the gathering of information through systematic inquiry that allows the researcher to be involved in the study and improve their practice (Mertler, 2014). Through cycles of research with planning, acting, and observing, the research informs decisions to improve education (Mertler, 2014). Delivering a proactive advising communication message to the applicants I work with in an effective manner is the area in which I wished to improve my practice.

Instruments and Data Sources

I used a concurrent mixed method research design to gather data to answer the research questions, in order to understand the effects of using TextEd as a tool for effective proactive advising during the admissions process. Quantitative measures included the Cell Phone Usage and Communication Practices (CPUCP) survey. Qualitative measures included semi-structured interviews of newly admitted student participants, as well as data from the researcher's journal. Both the surveys and the interviews were administered to newly admitted student participants only, because applicants needed to complete the admission process to fully experience communication with admission staff.

Quantitative measures. I administered the CPUCP survey to applicant participants immediately following their acceptance into their teacher certification program. The CPUCP consisted of seven sections, the first six sections each measuring a different construct, with the seventh section covering general demographic and cell phone use practices questions. The instrument's first three sections measured the constructs of *Cell Phone Use Motivations*, *Cell Phone Use Affinity*, and *Interpersonal Communication Motivations*. Questions measuring these constructs were developed by Rubin, Rubin, Graham, Perse, and Seibold (2011). For the next two sections, I developed questions to measure the constructs of *Effective Communication*, and *Customer Satisfaction*. The questions in the sixth section, also developed specifically for this study by me, were only included in surveys administered to the Intervention group and measured the construct of *Effective Proactive Advising* using the TextEd intervention. Participants responded to survey items by indicating their degree of agreement with each statement using the following Likert scale: (6) = *Strongly Agree*; (5) = *Agree*; (4) = *Somewhat Agree*; (3) = *Somewhat Disagree*; (2) = *Disagree*; and (1) = *Strongly Disagree*. For each construct, Cronbach's α was computed using SPSS to determine the reliability of the constructs. In examining the responses, the reliabilities for the constructs were .91, .96, .81, .94, .92, and .93 respectively for the six constructs. All reliability coefficients were above .70, the minimum acceptable level of reliability, thereby verifying the reliability of the items making up each of the constructs assessed by the survey. The survey concluded with a number of items regarding demographics as well as general cell phone use practices.

Appendix C provides a list of survey items. Table 1 provides a description of the CPUCP survey sections and number of questions.

Table 1

Cell Phone Use and Communication Practices (CPUCP) survey description

Survey Section	Construct	# of Questions
1	Cell Phone Use Motivations	16
2	Cell Phone Use Affinity	6
3	Interpersonal Communication Motives	18
4	Effective Communication	12
5	Customer Satisfaction	15
6	Effective Proactive Advising	12
7	Demographics and Cell Phone use practices	14

I have included examples to illustrate these items. An example that demonstrates the construct of *Cell Phone Use Motivations* is, “So I can stay connected with family and friends”. The construct of *Cell Phone Use Affinity* is illustrated by, “Communicating with my cell phone is one of the most important things I do each day.” The construct of *Interpersonal Communication Motivations* is illustrated by, “Because I need to talk about my problems.” An example that demonstrates the construct of *Effective Communication* is illustrated by, “I read text messages frequently from Teachers College staff.” To illustrate the construct of *Customer Satisfaction*, this example is provided, “I received useful information about my application status.” The construct of *Effective Proactive Advising* using the TextEd intervention is illustrated by, “Text messaging from the Teachers College admission staff made it easy to stay informed about my application status.” In addition, I added several general items to this survey to provide demographic data, such as age, gender, and personal cell phone use practices.

Qualitative measures. Qualitative measures were used to explore (a) how newly admitted students in both participation groups experienced communication during the admission process, (b) how newly admitted students in the Intervention group

experienced TextEd as a communication tool, and (c) how TextEd influenced customer service levels through the application process. Qualitative data sources included interviews of newly admitted students in both the Intervention and Comparison participation groups. I employed a semi-structured interview format to allow for variation in the questioning and impromptu additions to the interview protocol (Creswell, 2015). The semi-structured interview protocol included six questions with follow-up questions added when I wanted to explore the information and experiences more deeply. I asked newly admitted students in the Intervention group additional questions about TextEd as an effective communication tool, and how TextEd influenced their customer satisfaction through the application process. A semi-structured interview format was used again as it allows for the variation in the questions on the interview protocol (Creswell, 2015). I conducted phone interviews for all applicants, as the newly admitted student participants were not necessarily located in the greater Phoenix area at the time of the interviews.

To explore how newly admitted students from the Comparison group experienced communication with staff the following example is provided, “Please describe your experiences communicating with staff members in the Teachers College.” To explore how newly admitted students from the Intervention group experienced TextEd the following example is supplied, “Please describe your experience of using text-messaging with staff members in the Teachers College.” Appendix D provides the interview protocol for Intervention group participants. Appendix E provides the interview protocol for Comparison group participants. Appendix F provides a table describing the research question along with the data collection instruments, and includes a description of the instrument, and justification of its use.

Procedure and Timetable

Data collection was concurrent as applicants applied and gained admittance in a rolling admissions process. I collected both the quantitative and qualitative data during the same time-period.

I provide a timeline table below (see Table 2) to further clarify the process. The planning for TextEd began in August 2015 when I applied for Institutional Review Board (IRB) approval and prepared the participant informed consent form and semi-structured interview instrument. I also asked for approval from supervisors to proceed with the TextEd project.

From December 2015 through October 2016, I conducted various pilot studies to address the reliability and validity of the survey instrument constructs and items. During my first cycle of action research, I also interviewed staff members at the Teachers College to explore if they too had trouble effectively communicating with the prospective students they work with each day. These staff members corroborated my contention that our standard methods of communicating through email and phone were not always successful. Pilot data from an administered survey on communication needs and cell phone use showed participants preferred to communicate by text message, as it was fast and convenient.

From June 2017 – December 2017, I invited applicants to participate in the TextEd program by email after they had applied to either the SED MAC, SPED MAC, or the EED MAC program. Since the SED MAC, SPED MAC, and EED MAC programs admit on a rolling basis, applications from these programs came into the Teachers College throughout this period, and admissions transpired as applications became

complete with all needed materials submitted. Random assignment to the Intervention and Comparison groups occurred by alternating between them as applications came into the admission system. Applicants who agreed to participate received an informed consent form and upon its return, I communicated with those applicants differently depending on their participant group assignment. I communicated with the applicants in the Intervention group using text messaging as one of the tools available to provide information to the participants about their application and other student outreach matters. I communicated with the Comparison group applicants using my standard methods of communication, by both email and phone calls. Both the Intervention and Comparison group received a similar number of messages and to ensure rate of communication was similar for participants in each group; I used a checklist of communication steps (See Appendix G). Following the conclusion of the admission process, newly admitted student participants received the CPUCP survey administered via an email link to the online survey. The Intervention group of newly admitted student survey included items on TextEd as effective communication whereas the Comparison group's survey did not include these items. After completion of the survey, participants in both groups were interviewed individually about their experiences communicating with Teachers College staff with the Intervention group receiving additional questions specifically targeting their experiences using TextEd. Table 2 illustrates the timeline of this study.

Table 2

Timeline and Procedures of the Study

Time frame	Actions	Procedures
August 2015	Apply for IRB approval	<ul style="list-style-type: none"> Received IRB approval
August 2015	Contact supervisors for site permissions	<ul style="list-style-type: none"> Meet with supervisory to receive the required permissions to conduct study
December 2015 – October 2016	Pilot Interviews and Survey instruments	<ul style="list-style-type: none"> Conduct pilot staff and student interviews
December 2015 – October 2016	Data Analysis for Pilot studies	<ul style="list-style-type: none"> Transcribe audio recordings of interviews Conduct Quantitative and Qualitative data analysis
June 2017 – December 2017	Recruit participants	<ul style="list-style-type: none"> Send recruitment email upon applying and gather consent forms
June 2017 – December 2017	Administer CPUCP surveys	<ul style="list-style-type: none"> Email survey links after admission
June 2017 – December 2017	Interviews	<ul style="list-style-type: none"> Conduct interviews of newly admitted students in both the Intervention and Comparison groups
October 2017 – February 2018	Data Analysis for studies	<ul style="list-style-type: none"> Transcribe audio recordings of interviews Conduct Quantitative and Qualitative data analysis

Data Analysis Plan

As I used a concurrent mixed method research design, I gave both the quantitative and qualitative data equal emphasis, and after separate data collection, I interpreted the data and merged it to better understand the research problem (Creswell, 2005). Through the triangulation of quantitative and qualitative data, findings that yielded similar results

increased my confidence in my findings, and added credibility and validity for the study through corroboration of findings from different data sources (Ivankova, 2015). Due to the small sample size ($n=30$), the strength of quantitative data analysis is limited; therefore the qualitative data was looked at in greater depth.

Quantitative data. I administered the CPUCP survey to address the following research questions: RQ 1 - How and to what extent do applicant's communication needs influence cell phones use; RQ 2 - To what extent does TextEd influence the effectiveness of communication between applicants and Teachers College admissions staff; and RQ 3 – How and to what extent does TextEd influence applicants' customer satisfaction during the application process? As described previously, the CPUCP assessment contained six constructs: *Cell Phone Use Motivations*, *Cell Phone Use Affinity*, and *Interpersonal Communication Motivations* (Rubin et al., 2011), as well as *Effective Communication*, *Customer Satisfaction*, and *Effective Proactive Advising*. Data were prepared for analysis by determining how to assign numeric scores to the data and cleaning the database before inputting into a data analysis program. I entered participant responses for the CPUCP assessments into SPSS, and I used this software to calculate and analyze the data using descriptive statistical procedures. To test if my Intervention group and Comparison groups' initial status was similar on *Cell Phone Use Motivations*, *Cell Phone Use Affinity*, and *Interpersonal Communication Motivations*, I conducted an independent samples t-test to see if the means were similar between groups. To test the effectiveness of TextEd as *Effective Communication*, and how TextEd influenced *Customer Satisfaction*, I also administered the survey questions on these constructs to both groups. I conducted an independent samples t-test to see if any significant difference existed

between how the Intervention group and the Comparison group found the effectiveness of communication and customer satisfaction with Teachers College staff. I chose to use an independent samples t-test as it compares the means of two independent groups to determine if the means of the groups are significantly different on communication effectiveness (Green & Salkind, 2014).

Qualitative data. The goal of the qualitative research was to present the students' in-depth perspectives and experiences using TextEd as a communication method with Teachers College staff. The qualitative data sources included interviews with newly admitted students, as well as the researcher journal. I interviewed newly admitted students to answer the following research questions: RQ1 – How and to what extent do applicant's communication needs influence cell phone use? RQ 3 – How and to what extent does TextEd influence applicants' customer satisfaction during the application process; and RQ 4 - How do applicants experience TextEd as effective communication? For the interviews of newly admitted student participants, I used a semi-structured format because it allowed for some variation in questioning, and provided a deeper understanding of the participants' experience (Creswell, 2015). I recorded and transcribed all interviews. I began the data analysis process by reading and rereading all interview transcriptions several times to identify emerging themes and categories to generate a larger, consolidated picture (Creswell, 2015). Then I used the data analysis software, HyperRESEARCH to assist in the coding process and the development of themes. I coded the data and produced a list of codes and meanings within the data. As I identified relationships, larger codes and categories emerged, and I developed codes that captured the themes in students' ideas of effective communication with TextEd (Miles &

Huberman, 1994). From these categories, related ideas and main themes developed and I used these to identify assertions about the data (Creswell, 2015).

Fidelity of the innovation stems from the collaborative nature of action research. I used member checking, had all transcribed interviews reviewed by the participants, and gave them an additional opportunity to edit their narratives. I used the findings from the interviews to triangulate with the data collected from survey instrument to draw from the strengths of both quantitative and qualitative methods while minimizing the weaknesses of both and corroborating findings within the study (Johnson & Onwuegbuzie, 2004).

Review of Efforts to Enhance Validity and Trustworthiness

Role of the Researcher. My positionality as the researcher included collecting and analyzing the quantitative and qualitative data. This included administering all surveys and conducting the semi-structured interviews of newly admitted student participants.

Validity and trustworthiness. Research bias threats to validity could exist in this study in the collection of data in qualitative interviews. Researcher bias exists when the researcher inflicts their motives and bias into the questioning or data analysis. One way to avoid researcher bias during the coding process is through line-by-line coding which promotes accurate analysis that reduces the likelihood of the researcher importing their motives, fears, or personal interests into the study (Charmaz, 2006). I used line by line coding to reduce the risk of researcher bias during coding of my qualitative data. Another method to reduce bias in the study was by using the mixed methods approach itself. By combining quantitative and qualitative methods I was able to analyze the data

and communicate the findings through both numbers and words, thereby reducing the chance my personal biases would emerge (Mertler, 2014).

Part of my job consists of reviewing applications for admittance to the programs to which the applicant participants are applying. An experimenter effect threat to validity exists here as the researcher was working directly with subjects and by virtue may have motivated participants to perform or answer questions in ways not warranted (Smith & Glass, 1987). Participants may have felt compelled to participate or answer questions a certain way to garner favoritism from staff. To avoid this threat to validity, I conducted surveys and interviews after admission to the programs.

I evaluated the effectiveness of communication practices by comparing survey data from both the Intervention and Comparison groups on the construct of effective communication. A nonequivalence threat to validity exists in this method because I compared two different groups of students to one another regarding their perceptions of communication effectiveness and customer satisfaction (Smith & Glass, 1987). Although both groups are comprised of students seeking teacher certification, to minimize this threat I removed any participants in the sample who were not from the millennial generation and randomly assigned applicants to the groups as they applied by alternating assignment between the two groups.

Chapter 4

Data Analysis and Results

Chapter 4 describes my analysis and findings for the following four research questions.

1. How and to what extent do applicant's communication needs influence cell phone use?
2. To what extent does TextEd influence the effectiveness of communication between applicants and Teachers College admissions staff?
3. How and to what extent does TextEd influence applicants' customer satisfaction during the application process?
4. How do applicants experience TextEd as effective communication?

Results from this study are presented by research question (RQ). For each RQ, the results from the quantitative data are reported first, if applicable. The qualitative data are then presented, if applicable. The quantitative data consists of data collected and analyzed from the CPUCP survey. The data analyzed for qualitative results was derived from interviews with newly admitted students and is organized under assertions based on emerging themes, and supported by direct quotes from the interviews. As I was the admissions staff member executing the innovation's implementation, I also gathered data about the invention through my communications with study participants during the TextEd implementation, which I recorded in a researcher journal.

RQ1: How and to what extent do applicant's communication needs influence cell phone use?

Both quantitative data and qualitative data were collected and analyzed to address RQ1. The CPUCP survey, which was administered to participants in both the Intervention and Comparison groups after admission to their respective teacher certification programs, provided the quantitative data. Qualitative data was gathered through semi-structured interviews, which were also administered after the participants in both treatment groups had been admitted to their respective programs.

Quantitative findings related to communication needs and cell phone use. To understand the communication needs and the cell phone use affinities and motivations for all participants in the study, I calculated aggregate averages for the combined Intervention and Comparison groups to assess how the participants overall measured on the constructs of *Interpersonal Communication Motivations*, *Cell Phone Use Affinity*, and *Cell Phone Use Motivations*. Participants responded by indicating their degree of agreement with each statement using the following Likert scale: (6) = *Strongly Agree*; (5) = *Agree*; (4) = *Somewhat Agree*; (3) = *Somewhat Disagree*; (2) = *Disagree*; and (1) = *Strongly Disagree*.

Interpersonal communication motivations. The eighteen-item *Interpersonal Communication Motivations* construct was designed to examine why people are motivated to communicate with others. The construct consists of the following six sub-constructs: *Pleasure*, *Affection*, *Inclusion*, *Escape*, *Relaxation*, and *Control*. Each sub-construct is measured by three survey items.

The *Interpersonal Communication Motivations* sub-construct for *Affection* produced the highest mean and lowest *SD* of all the sub-constructs with a mean score of just above “agree” at 5.18 and with a *SD* of 0.49, indicating a high level of agreement in the need to connect with others as a motivation for communication. The sub-construct of *Pleasure* scored above “somewhat agree” with a mean of 4.51 with an *SD* of 0.60 indicating “some agreement” in the need to feel good as a motivation for communication. Participants were somewhat less motivated to communicate with others for *Relaxation* with a mean of 4.05 and an *SD* of 1.20. The means scores for *Inclusion* at 3.94, *Control* at 3.64, and *Escape* at 3.12 with *SD*'s of .087, 1.35, and 1.11 respectively, suggested that participants on average did not feel these sub-constructs were strong motivating factors in their communications with others. The overall mean for the *Interpersonal Communication Motivations* construct was 4.07 with a *SD* of 0.93.

Table 3 displays the descriptive statistical results for each of the six interpersonal communication motive sub-constructs, as well as the overall results.

Table 3

Descriptive Statistics for Interpersonal Communication Motivations

Sub-Construct	N	Mean	SD
Affection	30	5.18	0.49
Pleasure	30	4.51	0.60
Inclusion	30	3.94	0.87
Escape	30	3.12	1.11
Relaxation	30	4.05	1.20
Control	30	3.64	1.35
Overall - <i>Interpersonal Communication Motives</i>	30	4.07	0.93

Note: Likert scale scoring (6) = *Strongly Agree*; (5) = *Agree*; (4) = *Somewhat Agree*; (3) = *Somewhat Disagree*; (2) = *Disagree*; and (1) = *Strongly Disagree*

Cell Phone Use Affinity. The *Cell Phone Use Affinity* construct includes six survey items which measure the importance participants place on their cell phone use. Four of the items are positively worded and two are negatively worded (see Table 5, below). Overall, very few participants responded that they did not have a high amount of attachment or attraction to their cell phones. The means for the four positively worded items were between “agree” and “strongly agree”, suggesting the participants on average were in agreement that their cell phones were important to them. The means for the two negatively worded items were between “strongly disagree” and “disagree”, again indicating that participants placed a high importance on the cell phones. The *SD* results ranged between 0.49 and 0.71; this indicates a relatively tight clustering around the mean, suggesting little variation between responses. The *Cell Phone Use Affinity* construct’s overall mean was 5.28 with a *SD* of 0.58.

Table 4 shows descriptive statistics for each question in this construct, as well as the overall construct.

Table 4

Descriptive Statistics for Cell Phone Use Affinity construct

Question	N	Mean	SD
Q1: Using and communicating with my cell phone is one of the most important things I do each day.	30	5.20	0.55
Q2: I would feel lost without my cell phone.	30	5.30	0.53
Q3: Using my cell phone is not an important part of my life.	30	1.63	0.49
Q4: If my cell phone was not working, I would really miss it.	30	5.10	0.66
Q5: Using and communicating with my cell phone is very important in my life.	30	5.33	0.71
Q6: I could easily do without my cell phone.	30	1.56	0.56
Overall Construct – <i>Cell Phone Use Affinity</i>	30	5.28	0.58

Note: Likert scale scoring (6) = *Strongly Agree*; (5) = *Agree*; (4) = *Somewhat Agree*; (3) = *Somewhat Disagree*; (2) = *Disagree*; and (1) = *Strongly Disagree*

Cell Phone Use Motivations. This 16-item survey construct consists of eight sub-constructs related to cell phone use motivation: *Relaxation*, *Companionship*, *Habit*, *Pass the Time*, *Information Gathering*, *Entertainment*, *Social Interaction*, and *Escape*. Two items measure each sub-construct. Participants indicated that they were motivated most to use their cell phones on the sub-construct of *Social Interaction*, with a mean score of 5.31 and an *SD* of 0.63, indicating a high amount of agreement between participants and the least amount of variation between the responses. The sub-construct of *Information Gathering* scored above “agree” as well with a mean of 5.30 and a *SD* of 1.32, indicating a high of agreement between most participants, but also a higher variation in scores. The participants scored between “agree” and “somewhat agree” for *Entertainment*, with a mean of 4.50 and a *SD* of 1.15, indicating they were also motivated, but to a lesser degree to use their cell phones for entertainment. Similarly, *Pass the Time*, with a mean of 4.35 and a *SD* of 1.11, and *Habit*, with a mean of 4.10 and a *SD* of 0.99, suggest the

participants were still motivated, but somewhat less so, to use cell phones for these sub-constructs. Participants were least motivated to use their cell phone on the sub-constructs of *Relaxation* with a mean of 3.80 and an *SD* of 1.26, *Companionship* with a mean of 3.53 and a *SD* of 1.03, and as a means of *Escape* from what they were supposed to be doing, with a mean of 3.10 and a *SD* of 1.18. The *Cell Phone Use Motivations* construct overall mean for all participants was 4.25 with a *SD* of 1.08

Table 5 displays the descriptive statistical results for each of the eight *Cell Phone Use Motivation* sub-constructs as well as the overall construct.

Table 5

Descriptive Statistics for Cell Phone Use Motivations

Sub-Construct	N	Mean	<i>SD</i>
Relaxation	30	3.85	1.26
Companionship	30	3.53	1.03
Habit	30	4.10	0.99
Pass Time	30	4.35	1.11
Information Gathering	30	5.30	1.32
Entertainment	30	4.50	1.15
Social Interaction	30	5.31	0.63
Escape	30	3.10	1.18
Overall Construct – <i>Cell Phone Use Motivations</i>	30	4.25	1.08

Note: Likert scale scoring (6) = *Strongly Agree*; (5) = *Agree*; (4) = *Somewhat Agree*; (3) = *Somewhat Disagree*; (2) = *Disagree*; and (1) = *Strongly Disagree*

Together, the descriptive statistical results for communication needs and cell phone use indicate participants in both treatment groups were personally motivated to communicate with others to form an affectionate bond or connection, with a motivation to use their cell phones to communicate for *Social Interaction* and *Information Gathering*.

Intervention group and comparison group initial status. Research questions 2 and 3 ask about the effect of the TextEd intervention on the two treatment groups. To be confident that differences between the two treatment groups were in fact related to the TextEd intervention and not due to initial differences between groups on the general communication and cell phone use affinities related to RQ 1, it was important to examine the Intervention group and Comparison groups' initial status on the three constructs analyzed in the previous section. To do so, I conducted independent samples t-tests to see if there were statistically significant differences between treatment groups on those constructs.

T-tests are a form of hypothesis testing, which is a process for generating decisions about data by comparing a noted value of the sample with a population value, in order to establish if a difference exists between those values (Creswell, 2015). The null hypothesis for the treatment groups on the constructs described above would be that no significant difference exists between the Intervention and Comparison groups in their initial status on *Interpersonal Communication Motivations*, *Cell Phone Use Affinity*, and *Cell Phone Use Motivations*. Significance is a probability level reflecting the maximum amount of risk that any amount of noted differences is due to chance and not the intervention. A significance or alpha value (p), of .05 indicates 5 out of 100 times, or 5% of the time, the difference is due to chance, or in other words, 95% of the time the difference is due to the intervention (Creswell, 2015). A p-value of less than .05 is generally accepted as an indication that there is a statistically significant difference between groups and the null can therefore be rejected; conversely, a p-value that is

greater than .05 indicates that the null cannot be rejected, meaning there is no significant difference between treatment groups.

The results of independent samples t-tests indicated that the *p*-values for all three constructs were greater than .05; therefore, the null hypothesis is *not* rejected, indicating that there is no statistically significant difference between the treatment groups in initial status. Table 6 displays the initial status of the Intervention group and Comparison group on *Interpersonal Communication Motivations*, *Cell Phone Use Affinity*, and *Cell Phone Use Motivations*.

Table 6

Comparison of Initial Status

Construct	Group	N	Mean	Significance*
Interpersonal Communication Motivations	Intervention	15	4.02	.60
	Comparison	15	4.12	
Cell Phone Affinity	Intervention	15	4.86	.95
	Comparison	15	4.88	
Cell Phone Use Motivations	Intervention	15	4.13	.45
	Comparison	15	4.37	

*Significant at $p < .05$.

Qualitative findings related to communication needs and cell phone use. The codes related to RQ1 combined into three main themes that included: (a) communication preferences, (b) cell phone attachment, and (c) information gathering strategies. Table 7 displays the main themes, related ideas, and assertions to answer RQ1.

Table 7

Main themes, related ideas, and assertions related to communication needs and cell phone use

Main Themes	Related Ideas	Assertions
a) Communication preferences	<ul style="list-style-type: none"> • Need some info quick • Communication partner correlates to communication preference • Some forms of communication more accessible than others • Targeted messages 	(1) Students prefer quick communication using their mobile devices
b) Cell phone attachment	<ul style="list-style-type: none"> • Always have cell phone • Use cell phone to send text messages, surf web, play games, listen to music make purchases, take pictures, take videos, use social media, and talk on the phone • Will respond to text messages and not phone calls • Skim emails 	(2) Cell phones are an integral part of millennial communication methods
c) Information gathering strategies	<ul style="list-style-type: none"> • Friends as information sources • Reading and rereading website • Calls to staff members • Emailing staff members 	(3) Looking for and obtaining the information about teacher preparation programs, occurs mostly through electronic media and information sessions.

Communication preferences. Assertion 1: Students prefer quick communication using their mobile devices. The applicants to graduate programs are mostly from the millennial generation. Prior research has shown this generation prefers quick communication. The interviews with applicants support this past research. One applicant summed up her ideas her and her friend’s personal communication preferences this way:

Text messaging is quick and it is one of those things where like *We’re still meeting after class* or *Are we still grabbing lunch?* are really fast and that's something that takes two seconds to send in between classes and then you have the information you need versus having to make a phone call. I guess it allows

you to still communicate with people that you otherwise would have difficulty communicating with during a normal school or workday.

Another participant summed up her thoughts with this: “Computers are slow for communication, I just use my phone as it’s always with me...no need to go home.” while another participant shared similar thoughts about his routine communication this way:

“For just regular communication with family and friends, and some people at work, texting is very, very convenient and the way I usually communicate. I don't always get updates on my email right away on my computer... so if I don't think to check it, I don't get email until later and maybe after business hours, so text messages get to me quicker.”

Another participant expressed her thoughts with this: “For family or friends I generally like to talk to them like on the phone or if I need a short reply right away I'll send whoever it is a text.” This same participant added:

What I really like about being able to use a text message is, I might not be able to talk on the phone at that time, maybe I am just running into a building for a class or something, it's easy to send a quick text and being able to check back for the answer a little bit later. It's a lot quicker than emailing someone. It gets what you need to get without having to go through a big long process or it's like an availability kind of thing.

One participant expressed her thoughts on receiving email communication vs. text message communication this way: “I never read long emails, takes too long. I like texts because they are short and quick to read.”

Targeted messaging was another theme that emerged in the interviews. One participant revealed she received text-message reminders from her dentist and could see

how reminders such as these would be beneficial during the application process for graduate school. The participant expressed her thoughts this way:

For me, getting a text message saying *Hey you need to still turn in something like an application for a scholarship* or a *Don't forget something is due at this time and this day*, as long as the text message is specific versus a generalized reminder text message, I think it'll be very useful.

The participant wanted to receive messages with information important to her and did not want to receive generalized messages. She summed up her thoughts this way, “At times messages don't apply to me and so that’s annoying. I'll look at them, but if it's not for to me, I'm will ignore it. If it's something that I know is applicable, then it's meaningful to me.”

Cell phone attachment. Assertion 2: Cell phones are an integral part of millennial communication methods. Cell phones were an essential part of daily communication for the participants. Every participant explained they always had their cell phones with them, even at night when sleeping so they did not miss anything. One participant summed up her thoughts on her cell phone this way: “I would simply die if I didn’t have a cell phone. I have no idea how to live without it!” Another participant added his daily communication experiences this way:

At times, I am texting over five or six people at the same time...my friends and family, you know. I can’t just answer my phone while I am at work so getting a text is the best way to get a hold of me. I use my phone mostly for texting, and listening to music while working out, but I also use it to play games. I think the

thing I do least with my phone is make calls. I think my text-messages per month are well over 2000, but my minutes used are less than 100.

Another participant expressed her thoughts on using and communicating with her cell phone this way:

When I have a minute with nothing to do, I just grab my cell phone out of my pocket and check Facebook to see what everyone is doing. On weekends, we all goof around with our phones and even snap pictures of food at dinner. I would be lost without my cell phone, I truly would. I think that is a bit sad to say but it's so true of me and I would imagine for most of my friends as well. I just got an Amazon app so I have even been ordering diapers and such with my phone.

That's another big thing I do with my phone is taking pictures of my kids. My mom has albums with pictures in them...I have a phone!

One participant expressed his use of his cell phone this way: "I hardly ever answer phone calls...everyone I know would send a text...not call." Another participant shared how she used her cell phone in the following way: "I use my cell phone for almost everything I do, take pictures, check Facebook, listen to music and video chat with my friends and family, as well as text, and occasionally talk."

Information gathering strategies. Assertion 3: Looking for and obtaining the information about teacher preparation programs occur through several sources with electronic media and information sessions the most common. Several related ideas emerged during these interviews. The participants expressed almost all communication with MLFTC occurred either by website or email, with email being by far the most common. The participant explained her experiences communicating this way:

I think I emailed and that's how I found out about the information session or the information session was posted on the website. I don't remember...The information session was maybe a month or two later and I attended the info session where they kind of went into great detail about how the program works and everything that goes along with that. After that, it was maybe one or two email communications with questions specific about the program.

Another participant summed up her experiences in gathering information about teacher certification programs in this way:

I started by looking online at your different programs, and then I sent an email out to your college and they got back to me and I set up a time to talk on the phone with someone. I also used your website. This was actually a lot easier to do than it has been with other schools that I've tried to get in contact with.

Several applicants heard about the Teachers College certification programs from family or friends. One applicant explained how she received information from a friend:

The first way I found out about this program was through my friend who was going through the program actively as she had signed up the year prior. I talked to her about it and then she kind-of gave me a little bit of information and then I went to the website and found out a little bit more information about it.

Another applicant responded to my inquiry about information gathering this way:

At first, I looked at the website and then as my parents asked questions, I kept going back there to look for more information. Eventually, I had to ask to speak with someone, as I could not find the info I needed online. That person emailed me some materials to read and gave me a time for an upcoming info session. I

forgot about the information session the first time. The next one that came up she sent me an email reminder so I remembered that one, but I almost missed it, as I didn't get the email until I got home after work. The session was useful.

Other participants expressed how they used electronic devices to gather information: "I looked up a lot of information on your website before I applied, both on, my laptop and on my cell phone." With another participant expressing similar thoughts:

Whenever I have an idea and need information, I usually Google it on my cell phone first...read about it...and maybe look later with my computer. I always have my cell phone with me and not usually my computer, so for quick info it's my cell phone I use the most.

Summary of data analysis and results for RQ1: How and to what extent do applicant's communication needs influence cell phone use? Both quantitative and qualitative data were collected to answer RQ1. Quantitative data assessed from the CPUCP survey indicated the participants were personally motivated to communicate mostly for *Affection* and *Pleasure*. The results also indicated participants were very attached to their cell phones and chose them as their main communication resource for *Social Interaction* and *Information Gathering*.

Qualitative data from the semi-structured interviews indicated participants utilized their cell phones as their first choice when communicating with others. The qualitative data revealed a rich description of communication practices of millennial students using electronic devices, mainly cell phones. Finally, results indicated although cell phones were widely used, they were not the only means by which the participants communicated

with others. Email was still a strong contender when it came to communication medium choice, especially when needing something in writing.

RQ2: To what extent does TextEd influence the effectiveness of communication between applicants and MLFTC staff?

Quantitative data were collected and analyzed to address RQ2. Quantitative data included 30 CPUCP surveys with a twelve-question section devoted to gauging the effectiveness of communication between applicant participant and admission staff member. I administered the survey after admitting participants in both the Intervention and Comparison group to their respective teacher certification programs. My researcher journal also provided some insight into answering this question.

Quantitative findings related to the effectiveness of communication. The twelve-question section within the CPUCP survey gauging the *Effective Communication* between participant and admissions staff member measured four sub-constructs, with three questions in each sub-construct for: *Quantity of Communication Occurrences*, *Quality/Content Appropriate Messages*, *Messages Received and Read*, and *Timely Messages* (see Appendix C, *Effective Communication*).

Data from CPUCP surveys indicated Intervention group participants scored the sub-constructs of *Quantity of Communication Occurrences*, *Quality/Content Appropriate Messages*, and *Timely Messages* between “agree” and “strongly agree” with means of 5.40, 5.60, and 5.57 respectively. These findings suggest the amount of TextEd messages was appropriate for participants, and contained the information needed at the right time. The Intervention group scored *Messages Received and Read* between “somewhat agree” and “agree” with a mean score of 4.82, suggesting they did read TextEd messages. The

Comparison group means indicated a similar ranking of the sub-constructs, but with lower means for each sub-construct. (See Table 8).

I conducted an independent samples t-test to determine if the difference in the means between the Intervention and the Comparison group was significant. All four sub-constructs of *Quantity of Communication Occurrences*, *Quality/Content Appropriate Messages*, *Messages Received and Read*, and *Timely Messages* demonstrated significant differences between the Intervention and the Comparison groups, indicating that *Effective Communication* was enhanced through the implementation of TextEd.

Table 8

Independent Samples T-Test results on Effective Communication sub-constructs

Sub-Construct	Group	N	Mean	Significance*
Quantity of Communication	Intervention	15	5.40	.035
	Comparison	15	4.95	
Messages Received and Read	Intervention	15	4.82	.009
	Comparison	15	4.20	
Quality/Content Appropriate Messages	Intervention	15	5.60	.045
	Comparison	15	4.97	
Timely Messages	Intervention	15	5.57	.047
	Comparison	15	4.93	

*Significant at $p < .05$

I also used a CPUCP survey section for *Effective Proactive Advising*, given only to the Intervention group participants, to gauge how these participants rated the efficacy of the TextEd intervention (see Appendix C, *Effective Proactive Advising*). The twelve-item *Effective Proactive Advising* survey section contained two sub-constructs with six items each measuring *Communication Levels* and *Connectedness with Teachers College Staff*. The mean for *Communication Levels* was 5.47, with a *SD* of 0.42 showing a strong

amount of agreement between participants that TextEd provided effective communication levels. The mean for *Connectedness with Teachers College Staff* was 5.48 with a *SD* of 0.39, also showing the participants agreed they felt connected to ASU staff through using the TextEd intervention during the application process with little variation in responses among the group. Table 9 displays the descriptive statistics for each of the two *Effective Proactive Advising* sub-constructs.

Table 9

Descriptive Statistics of TextEd as Effective Proactive Advising

Sub-Constructs	N	Mean	Std. Deviation
Communication Levels	15	5.47	0.42
Connectedness to Teacher College Staff	15	5.48	0.39

Note: Likert scale scoring (6) = *Strongly Agree*; (5) = *Agree*; (4) = *Somewhat Agree*; (3) = *Somewhat Disagree*; (2) = *Disagree*; and (1) = *Strongly Disagree*.

The main theme that occurred throughout my journal reflected the difference in how connected I felt to my Intervention participants due to the TextEd intervention. I felt communication was easier and faster, and I grew to know them better than my Comparison group participants. I noted in my journal how several TextEd participants sent me a quick text message response of *thanks* regarding a reminder I had just sent them and how I rarely receive a quick reply after I send an email. An email *thanks* might come in hours later, if at all, whereas TextEd replies were much more like face-to-face communication, where a quick *thanks* is readily given.

Summary of data analysis and results for RQ2: To what extent does TextEd influence the effectiveness of communication between applicants and Teachers College staff? Quantitative data assessed from the CPUCP survey indicated the participants in the Intervention group felt their communication was more effective with

admission staff than the participants in the Comparison group. Additionally, quantitative data assessed from the CPUCP survey section on *Effective Proactive Advising*, given only to Intervention group participants, indicated that TextEd was effective communication with appropriate *Levels of Communication* and helped them feel a *Connectedness to Teachers College Staff*. Additionally, my journal entries indicated that I also felt more connected to the Intervention participants than to the Comparison group participants.

RQ 3: How and to what extent does TextEd influence applicants' customer satisfaction during the application process?

Both quantitative data and qualitative data were collected and analyzed to address RQ3. Quantitative data included the CPUCP survey, administered to participants in both the Intervention and Comparison group after I admitted them to their respective teacher certification programs. Qualitative sources included semi-structured interviews I conducted with the participants from both treatment groups after admitting the participants to their programs, as well as entries from my researcher journal.

Quantitative findings related to customer satisfaction. The fifteen-question section within the CPUCP survey gauging *Customer Satisfaction* during the application process between participant and admissions staff member measured five sub-constructs, with three questions for each sub-construct: *Convenience*, *Targeted Communication*, *Knowledgeable Staff*, *Institutional Connectedness*, and *Best Interests* (see Appendix C – *Customer Satisfaction*.)

Data from CPUCP surveys indicated that the Intervention group participants' customer satisfaction throughout the application process was influenced most by

Institutional Connectedness, with a mean score of 5.64; having *Knowledgeable Staff* to provide guidance with procedures, with a mean score of 5.62; and feeling staff had their *Best Interests* in mind during interactions, with a mean score of 5.57. The Intervention group means for *Targeted Communication* and *Convenience* also fell between *agree* and *strongly agree*, but with somewhat lower rankings of 5.44 and 5.11 respectively. The mean scores for the Comparison group ranked the customer satisfaction sub-constructs in the same order, but with lower mean scores for each sub-construct (see Table 10).

I then conducted an independent samples t-test to determine if the difference in the means between the Intervention and Comparison groups were statistically significant. The results from four of the sub-constructs, *Knowledgeable Staff*, *Targeted Messages*, *Convenience*, and *Best Interests*, showed statistically significant differences between the groups, indicating that the TextEd intervention improved customer satisfaction across those four sub-constructs. *Institutional Connectedness* was the only sub-construct not to have a significant difference in the means. This finding suggests participants in both treatment groups felt a connection to ASU regardless of TextEd use for proactive advising.

Table 10

Independent Samples T-Test results on Customer Satisfaction sub-constructs

Construct	Group	N	Mean	Significance*
Targeted Communication	Intervention	15	5.44	.010
	Comparison	15	4.64	
Knowledgeable Staff	Intervention	15	5.62	.003
	Comparison	15	4.84	
Institutional Connectedness	Intervention	15	5.64	.064
	Comparison	15	5.22	
Convenience	Intervention	15	5.11	.046
	Comparison	15	4.35	
Best Interests	Intervention	15	5.57	.005
	Comparison	15	4.88	

*Significant at $p < .05$.

Qualitative findings related to customer satisfaction. The codes relevant to RQ3 combined into two main themes: (a) high customer satisfaction, and (b) low customer satisfaction. Table 11 displays the main themes, related ideas, and assertions to answer RQ3.

Table 11

Main Themes, related ideas, and assertions related to Customer Satisfaction through application process by participation group

Group	Main Themes	Related Ideas	Assertions
Intervention	(a) High customer satisfaction	<ul style="list-style-type: none"> • Messages just for me • Personal connection – felt special during admission process • Staff focused on me • Problem resolution • Always knew application status 	(1) TextEd messages created a strong customer service experience for the applicant and led to higher customer satisfaction with the admission process.
Comparison	(b) Low customer satisfaction	<ul style="list-style-type: none"> • Couldn't remember who to reach out to with questions • Some information hard to find • Email was hard to access at work • Some email communication did not address my issues • Just a number 	(2) Email only connections between applicant and admission staff led to lower customer satisfaction and frustration.

High customer satisfaction. Assertion 1: TextEd messages created a strong customer service experience for the applicant and led to higher customer satisfaction with the admission process. The applicants to graduate programs are mostly from the millennial generation. Prior research has shown this generation prefers a close connection to important others and they need to feel a sense of personalized service for high customer satisfaction through a process. The interviews with applicants support this past research.

Intervention group participant qualitative results. One Intervention applicant summed up her experience with high customer satisfaction this way: “You texted me asking for my NES test score, and I was wondering where I sent that stuff, so you actually preemptively solved the problem for me with your text message. I felt you really

cared about my application.” Another Intervention participant shared his similar thoughts:

There was an issue with my residency, and I got a text message that directed me towards the residency page, to petition that status. Just being able to click on a link in the text message made it super-fast to get the petition process going...and it worked...my non-residence status was changed to resident so I could afford to start the program.

Several Intervention participants spoke about feeling connected with staff: One participant expressed her feelings this way: “I knew where to go with my questions after applying, I never felt alone during the process.” Another Intervention participant expressed why connectedness was vital to his success this way:

I was the first in my family to apply to graduate school and no one in my family could tell me what to expect. With text message reminders during the process, I felt someone was always there to help, to guide me during this process. I knew I was going to get information fast and when needed as my family wasn't able to assist.

One Intervention participant summed up her experience with TextEd communication this way:

Texting with you made me feel like a little more relaxed, especially because it was through a text, so it was just like really quick, like I could see it immediately on my phone, just like I knew, okay, cool....my application's being reviewed ...it was so nice.

Another Intervention participant summed up his thoughts with: “The right information at the right time, directed just for me, was great customer service.”

Low customer satisfaction. Assertion 2: Email only connections between applicant and admission staff led to lower customer satisfaction and frustration. Again, the applicants to graduate programs are mostly from the millennial generation. Prior research has shown this generation prefers a close connection to important others and needs to feel a sense of personalized service for high customer satisfaction and persistence through a process. This generation prefers quick communication and instant feedback to feel informed. The interviews with applicants support this extant research.

Comparison group participant qualitative results. A Comparison group participant summed up his experience with email customer service during the application process this way:

I missed some information you sent to me about the IVP card in that first email so that slowed me down a bit in getting that item squared away. I think you sent me 2 or 3 emails asking about it before I got around to emailing you back about how to get the card and getting it done and I almost missed the final deadline.”

Another Comparison group applicant expressed her frustration with email this way:

I was getting lots of emails from ASU. I just didn’t read or understand them all. A few emails seemed just for me but most of the emails included information I didn’t need, I felt I was just a number at a big university.

Several Comparison group participants referred to not knowing whom to contact after they applied to get answers. One Comparison participant summed up her thoughts with this:

After I did my application, I did get an email from you saying you received it. But, I didn't know if I should ask you my questions or get back in contact with my recruiter. I had a specific question about my application materials and got the run around when I contacted ASU Graduate Admissions, which was the wrong choice I think now, I should have contacted you, but I was confused.

My journal reflected incidences where Intervention group participants commented on how I responded to their inquiries, even reaching out to them about issues before they even knew there was a problem. My notes reflected how easy it was for me to quickly connect with Intervention participants through TextEd and help them solve problems. I noted how quickly Intervention participants responded via text and how their texts seemed positive in tone, and also noted an incident where an applicant was happy to hear from me using texting, as they were not at home. Another journal entry noted a disgruntled participant from the Comparison group who was frustrated after not spotting my email about a missing letter of recommendation for over two weeks before seeing it and being able to respond by contacting her recommender.

Summary of data analysis and results for RQ3: How and to what extent does TextEd influence applicants' customer satisfaction during the application process?

Both quantitative and qualitative data were collected to answer RQ3. Quantitative data assessed from the CPUCP survey indicated the participants from the Intervention group felt admission staff was knowledgeable and had their best interests in mind when

working with them. Intervention group participants also believed the text messages sent with TextEd were targeted just to them and communication in this manner was convenient. The quantitative results also indicated that Comparison group participants were less satisfied with customer service experience during the application process than the Intervention group.

Qualitative findings for the Intervention group participants show how they felt admission staff was working closely with them to help them solve problems, leading to increased satisfaction with the admission process. Qualitative results also showed how Comparison group participants were frustrated with some email communication and lack of knowledge on where to get answers. It's important to note, however, that regarding *Institutional Connectedness* specifically, the quantitative and qualitative results indicate that both groups did feel a high sense of connectedness to ASU during the application process, suggesting that email alone does help form some bonds between the institution and the applicant. Finally, my journal entries reflected more positive reflections about my customer service from Intervention applicants than from Comparison applicants, suggesting that my experiences using TextEd increased my ability to provide better customer service and improve customer satisfaction throughout the application process.

RQ 4: How do applicants experience TextEd as effective communication?

Qualitative data was collected and analyzed to answer RQ4. Qualitative sources included 15 semi-structured interviews administered to the Intervention group only; after participants were admitted to their programs (see Appendix D). The qualitative data provided the participants in the Intervention group an opportunity to share their thoughts

and feelings using text messaging during the application process, and these data provided me with great insight into their application experiences.

Qualitative findings related to TextEd experiences. The relevant codes for RQ4 combined into one main theme: (a) TextEd experiences. Table 12 displays the main theme, related ideas, and assertion to answer RQ4.

Table 12

Main Theme, related ideas, and the assertion related to TextEd experiences

Main Themes	Related Ideas	Assertions
(a) TextEd Experiences	<ul style="list-style-type: none"> • Received reminders • Quick communication • Cannot read email at work • Can read text messages at work or in class 	(1) Applicants had positive experiences using text-messaging with the admissions specialist during the application process

Experiences with TextEd. Assertion 1: Applicants had positive experiences using text messaging with the admissions specialist during the application process. The Intervention group participants expressed generally positive experiences about using TextEd. One applicant summed up her thoughts this way, “I really kind of liked text-messaging with the admissions person, at first I thought it might be weird, but it made the whole process easier.” In another interview, a participant shared her thoughts on TextEd:

I found texting my admissions person to be really, really helpful because I work all day long and I don't have my computer on me. So it's easy when I was on a break I could go and I could check my text messages, see what I needed still to complete or if there was something else I needed to remember to do. I really kind of liked that experience. It was ... It made it a whole lot easier.

Several Intervention participant experiences revolved around forgetting important items that needed to be completed on their applications and how they appreciated the reminders sent by the admission specialist. One applicant stated, “I forgot to send in my IVP card copy, but the text reminded me so I made the deadline.” Another applicant expressed her thoughts this way:

I didn't know one recommendation was missing until I got the text. I am not sure I would have read another email from ASU telling me that, but I am happy I got the text and could remind my recommender to send it in right away.

Several Intervention participants compared TextEd to email. One applicant expressed her thoughts this way:

I really liked getting text messages, like I just check email a couple times a day. I don't have it pushed to my phone so when I get the text then I know immediately when something's happening and I'm able to act more quickly on it. So I liked that.

Another Intervention participant expressed her preferences this way:

It was a million times easier to be able to text with you because as I work full time, that's a much easier way to get ahold of me than, like, email on my phone, obviously, because I can't answer that. So, like, my letters of recommendation ... having you be able to text me and you are still waiting on a letter of recommendation from a recommender and give me their name, then I could turn around and give them a text message so that I can remind them that they need to do this for me. Whereas when I check an email, it's like when I get up I need to remember to do this, and then I forget. When it's a phone call, I never pick up the

phone call and I never remember to check the voicemail...texting is the way to go.

A couple of participants noted the duplication of messages, with TextEd messages copied to their email. One participant summed up her experience this way: "I did appreciate the emails too as a backup to the text message...but I didn't really need them nor did I read them again since I had it in a text." Another participant said: "I appreciated knowing that messages were also being sent to my email just in case I lost my phone or something."

A couple of participants also mentioned forgetting to check email, but text messages always came through. One participant said:

Texting with the admission person was great... I mean, I enjoyed getting the updates via text message, because it's easier to get that then check my email, and sometimes I forget to check email, but if I have a text it's right there. I actually got knowledge of my acceptance into the Teachers College via text message before it was updated on my ASU. So it was, it was really nice. I enjoyed texting over email.

Another Intervention group participant summed up her email versus text messages experience this way:

It's been a lot easier to text because you know, you can get information right away, instead of waiting to get emails. So it's a lot quicker. I think it's nice and I get the messages right away, rather than sometimes there's a delay with-with email. I don't always check my email all the time, but when I get a text message, it comes in right away, so that's cool.

One participant expressed the emotional side of why she has a positive experience with TextEd this way:

This whole application thing was really stressful, not knowing exactly what I was doing. Knowing I could text helped calm my fears as I knew the admissions person would get back to me right away. I was so happy each time I received a reminder, I knew she cared about me, and my application. It was immensely important to me that I knew she had my back, what a relief to know if something was needed she would tell me right away.

Although Intervention group participants generally liked using TextEd with the admission staff, one Intervention participant had a small issue and expressed his view this way: “It took me several weeks to finalize my application and I lost all the text-messages from you as I lost my phone. Maybe email is just more permanent.”

Summary of data analysis and results for RQ4: How do applicants experience TextEd as effective communication? Qualitative data from the semi-structured interviews indicated participants had positive experiences using the TextEd intervention. The qualitative data provided a rich description of how using text messaging during the application process was convenient, quick and efficient, and effectively provided information when needed and even at times before the applicant realized they needed to take action on an issue. Additionally, results indicated that some Intervention participants found the copies of TextEd messages going to their email reassuring and a resource to rely on later, with one believing email was more permanent and thus an important backup.

Summary of Overall Findings

The purpose of my study was to test the efficacy of using text messaging for effective communication through a proactive advising approach during the graduate school application process. I examined the use of text-messaging through the lens of student success theories, uses and gratification theory, and other related literature. The results from both the quantitative and qualitative data support the efficacy of TextEd.

The quantitative data for RQ 1 demonstrated the similarities between my two participation groups regarding communication preferences. Both the Intervention group and Comparison group indicated similar initial status in their *Interpersonal Communications Motivations*, *Cell Phone Use Affinity*, and *Cell Phone Use Motivations*, demonstrating that applicants in both groups did not differ with their general personal motivations to communicate, in their affinity for using their cell phones, or for their motivations to use their cell phones. The qualitative data supported these findings as participants in both treatment groups indicated they preferred quick communication with their mobile devices, as their cell phones were an integral part of their communication methods and a primary source for gathering the information they need.

The quantitative data for RQ 2 demonstrated differences between the treatment groups on *Effective Communication* during the application process. There was a significant difference in how the Intervention and Comparison groups scored how they felt their communication was, or was not, effective with the admissions staff. The Intervention group means on all 4 sub-constructs were higher than the Comparison group sub-construct means, indicating TextEd did make a difference in *Effective Communication*.

On the construct of *Effective Proactive Advising* for RQ2, the Intervention group demonstrated proactive advising through text messaging was an effective method to communicate on the sub-constructs of *Communication Levels* and *Connectedness to Teachers College Staff*. Both sub-constructs were scored above “agree” with low *SD* results, indicating a high amount of agreement amongst the Intervention participants that the proactive advising through text messaging helped increase connections with Teachers College staff. Previous research suggests a strong connection to intuitional staff is one way students increase their sense of belonging at an institution.

The quantitative data for RQ 3 demonstrated significant differences regarding the construct of *Customer Satisfaction*. The Intervention group mean scores indicated they felt TextEd increased their level of customer satisfaction. The Comparison group scores were significantly different from the Intervention group, suggesting that they did not feel a high level of customer satisfaction. The qualitative data supported these findings, as Intervention group participants who used text messaging with staff reported their admissions experiences included high levels of customer service and feeling of support. The Comparison group participants, who used mostly email for communication with staff, reported lower customer satisfaction and indicated their experiences included more frustration with the admission process.

The qualitative data for RQ 4 demonstrated the TextEd intervention was an effective student outreach tool during the admission process. Applicants in the Intervention group stated they enjoyed how text messaging with admissions staff was convenient and provided a quick and effective method of communication. Participants reported experiencing strong support from admission staff, with stress-free

communication, which made a difference in how at ease they felt about the admissions process.

Chapter 5

Discussion

The purpose of my study was to test the efficacy of using text messaging for effective communication through a proactive advising approach with applicants during the graduate school application process at the Teachers College. As noted in the literature review, Millennials are digital natives who have lived all their lives surrounded by communication technology. The TextEd intervention included using text messaging from my email system to cell phones as an additional method of communication that Millennials have a high affinity for using.

In this chapter, I first describe the integration and triangulation of the quantitative and qualitative findings. Next, the findings are discussed in relation to the theoretical frameworks and related literature that informed the focus and design of the study. Subsequent sections present my lessons learned, limitations of the study, the implications for my practice, and ideas for future research.

Integration and Triangulation of the Quantitative and Qualitative Data

A concurrent mixed methods design was employed in this study, which allowed for integration and triangulation of the quantitative and qualitative data in order to corroborate the results through different methodologies and thereby increase my understanding of, and confidence in, the findings.

The quantitative results from the CPUCP survey indicated that participants agreed text messages were easier to use for quick information than emails, and that text message responses were quicker to send and receive as well. This was reflected in the assertion that emerged in the qualitative data: *Students prefer quick communication using their*

mobile device. In the general question section of the CPUCP, all thirty participants selected cell phones as their main communication method. Also in this CPUCP section, participants indicated that their general communication practices included cell phone use. Most participants indicated they used their cell phones for general internet use, phone calls, emails, picture taking, accessing social networking sites, and text messaging. This is reflected in the assertion that took shape in the qualitative data: *Cell phones are an integral part of millennial communication methods*. Both of these assertions indicate that the applicants preferred text messaging with cell phones as their preferred communication method.

The CPUCP survey mean results of above “agree” on the Likert scale for the *Information Gathering* sub-construct is evidenced in the qualitative assertion of: *Looking for and obtaining the information about teacher preparation programs occur mostly through electronic media and information sessions*. This assertion indicates that participants use their cell phones as a method to get the information they need. Although participation in information sessions generally was not accomplished using a cell phone, participant interviews indicated that signing up for these sessions or text messages between friends about how to get information on Teachers College programs often took place using cell phones.

The quantitative finding of the motivations to communicate for *Affection* and *Pleasure*, as well as the motivations to use cell phones for both *Social Interaction* and *Information Gathering* connects with the qualitative assertion of: *Cell phones are an integral part of millennial communication methods*, as well as the assertion: *TextEd messages created a strong customer service experience for the applicant and led to*

higher customer satisfaction with the admission process. These assertions indicate that Millennials use cell phones to stay in touch with those to whom they feel close, to connect personally, and share affection. For example, several participants in the Intervention group shared that they felt personally connected to me during the application process as receiving text messages was personalized service.

The participants from the Comparison group, who used only email as a communication method with Teachers College admission staff, scored all five customer service sub-constructs lower than did those participants in the Intervention group who used text messaging as well as email for communication with admissions staff. This connects with the qualitative assertion: *Email only connections between applicant and admission staff led to lower customer satisfaction and frustration.* The data indicates using text messaging did make the communication process between applicant and me smoother and more effective.

The Intervention participants generally agreed they liked their experiences with TextEd on the CPUCP survey through the questions on *Customer Satisfaction* and *Effective Proactive Advising*. As mentioned above, the Intervention participants scored all five customer service sub-constructs higher than did the Comparison group participants. Per previous research, higher customer satisfaction increases the likelihood of persisting through any process. Perhaps for the Intervention participants in my study, this led to persistence in a timelier manner through the admissions process. The Intervention group participants also scored their experiences as between “agree” and “strongly agree” on these TextEd effective communication points: texting made getting information easier, I liked receiving text messages from admissions staff, I liked knowing admissions staff

could contact me fast, and I read more text messages than emails from admissions staff. The Intervention group also agreed they had good communication levels with me and felt high levels of connectedness through the use of the TextEd intervention. These findings connect to the qualitative assertion: *Applicants had positive experiences using text messaging with the admissions specialist during the application process.* Thus my hypothesis that it would be beneficial to communicate with these applicants in a way they prefer and already use effectively by adding text messaging to the tools I used to communicate proved accurate, as these results indicate that text messaging applicants did increase their customer satisfaction through this personalized communication tool.

Results in Relation to Theoretical Frameworks and Related Literature

The results of participants being motivated to use cell phones to gather information and socially interact were explained with Uses and Gratifications Theory. UGT describes how a person develops communication needs and then is motivated to satisfy those needs with technology. Survey results showing slightly above “agree” for both *Information Gathering* and *Social Interaction* is consistent with the research on Uses and Gratification Theory. People develop a need for communication and are motivated in different ways to satisfy those needs (Rubin & Rubin, 1992). Participants needed to gather information and interact with their social group, and used cell phones to satisfy those needs. Interview data also supported this theory as participants repeatedly stated that they needed to be able to communicate on the go, without waiting at home near a landline phone.

Why Millennials use cell phones as a primary source of communication is explained through the related literature on millennial communication practices. The

millennial generation is the first to live completely with digital communication options (Palfrey & Gasser, 2008). This generation of young adults communicates differently than previous generations and desires immediacy with their communication, including instant feedback without time lags in the communication cycle (Levine & Dean, 2012; Moon, 2009). Survey results are consistent with this related literature. Every participant in both the Intervention group and the Comparison group indicated that cell phones were their main personal communication method. Interview data showed that participants desired quick communication and preferred to access communication on their cell phones, predominantly through text messages with important others and when time sensitivity played an important role in the communication. Cell phones were highly relevant to the participants. Survey participants agreed they had high attachment and gave strong relevance to cell phones in their lives.

Dimensions of Student Success is a student success framework I created, combining two student success theories, *Sense of Belonging* (Hoffman, et al., 2002) and *Student Engagement* (Kuh, 2008), to link student behaviors and effective institutional practice to increase customer satisfaction through connectedness with the University and staff (Hoffman et al., 2002). Although there were not significant differences between treatment groups, survey results showing slightly above “agree” for both groups for *Institutional Connectedness* are consistent with these theories. Results from the interviews also support these student success theories. Applicants reported feeling more at ease with the application process when using TextEd with admission staff, as it gave them information even quickly and they knew communication would not get missed when it was a text versus an email. Students who feel a sense of connectedness or sense

of belonging are more likely to persist through the application process, thereby increasing the likelihood of being admitted and enrolling (Hoffman et al., 2002).

Why applicants need guidance that is proactive and not prescriptive in nature during all phases of their university journey, including during the admission process, is supported through related literature on Proactive Advising. University staff needs to enact specific interventions for students to show interest, anticipate needs, identify obstacles, and engage and educate (Varney, 2012). Survey results from the Intervention group showing slightly above “agree” for *Effective Communication* while the Comparison group score for the same construct was slightly above “somewhat agree,” which is consistent with this literature. Applicants who used the TextEd intervention with admission staff scored their responses higher regarding the construct of *Customer Satisfaction* during the application process than those who did not use the intervention. Therefore, the Intervention group has a higher sense of satisfaction with the application process, leading to feeling more connected and engaged with the university and staff.

Lessons Learned

Communication with Millennials, who are digital natives, presented a challenge to be innovative in using communication methods they find to be more relevant and more immediate. My intervention, TextEd worked well, and Intervention group participants generally enjoyed the convenience and feeling connected and on top of the application process. However, I learned through the interview process that a few Intervention group participants were confused by the text message system and did not realize they could respond to my text messages. When using the email to text service from the major cell phone carriers I was limited to 160 characters and spaces including the subject line.

Therefore I learned to be very concise in my messages, although at times it still proved difficult to fit all the information into the limited space.

One of the lessons learned that I am most proud of was my new ability to identify problems of practice and to propose practical solutions supported by theoretical frameworks. Being able to make the connection between theory and practice is essential in my work context. Another very important lesson learned was how to conduct scholarly research and inquiry and how to analyze the resulting data to innovate and make change. A final important lesson learned during my research was there is so much I can learn from others. Everyone I worked with on this research, from co-workers to applicants, added something unique to the experience and I was humbled by their eagerness to help me explore and discover through research. It truly was a collaborative experience.

Limitations

Four limitations surfaced during my research. These included (a) sample population and size, (b) brevity of the research study (c) experimenter effect, and (d) non-equivalency effect.

The thirty participants included only teacher certification applicants and did not include other applicants I work with during the application process. Students who wish to be teachers might be more cooperative and communicative than those who applied to non-teaching masters and doctoral programs. The sample size was effective for this study; however, the small sample size does not make the findings generalizable to other institutional settings or populations of students.

The research study took place over one semester. Applicants who deferred to another semester or did not complete their applications could not be included in the

study. If the time of the study were increased, more participants could have been included.

One of my work duties is reviewing applications for the programs to which the participants were applying. This presents an experimenter effect threat to validity, as I was working directly with the participants, which may have motivated participants to answer questions in certain ways (Smith & Glass, 1987). To avoid this threat to validity, I conducted surveys and interviews after admission to the programs so applicants did not feel their answers would affect their admission decision. I evaluated the effectiveness of communication practices by comparing survey data from both the Intervention and Comparison groups on the construct of effective communication.

A nonequivalence threat to validity exists in this method because I compared two different groups of students to one another in terms of their perceptions of communication effectiveness (Smith & Glass, 1987). Although both participation groups were comprised of students seeking teacher certification, to minimize this threat I removed any participants who were not from the millennial generation, and randomly assigned participants to the groups as they applied by alternating assignment between the two groups.

Implications for Practice

The results of this research suggest that applicants appreciate a strong customer service experience during the application process. The implications for my department and admissions as a whole are that nowhere can there be a “gap” in outreach strategies. Every opportunity to create a “high touch” moment for millennials will be important for successful outcomes. For the recruitment team, that represents more prospective students

who submit applications. For an admissions team that signifies more applicants who persist through the process and become admitted students. For academic advisors in my department, the results will be more students becoming the teachers of tomorrow.

Results from this study also suggested a few implications for my personal practice. Survey participants stated attachment and high affinity to their cell phones. From this outcome, I realize traditional methods of communication are not as relevant for applicants, and when unresponsive during communications, it is time to use more relevant means such as text messaging. Another finding suggested that applicants used their cell phones for information gathering. Therefore, I should send communications pertinent to applicants with necessary links on where to find further information included so they can click on those from their phone. Participants also experienced connectedness from using TextEd with Teachers College staff members, so I should continue to use text messaging with applicants as a way of facilitating their sense of belonging at ASU before admittance to a graduate program. Recall from chapter 1, a *gap* existed in my ability to offer “high touch” customer service with my current student outreach communication strategies in comparison to the two departments who work with students right before me and just after me. The findings of my study demonstrate that text messaging is an effective method of communication to offer a “high touch” communication strategy for my usual pool of applicants from the millennial generation.

Implications for Research

Upon completion of my TextEd study, I can identify two areas I would recommend for future cycles of research. These areas include (a) targeted messages, and

(b) expanding the breadth of use for text messaging across different Teachers College departments.

Participants indicated that targeted messages, or those messages that are not general, but are focused only on the recipients' wants or needs and that are meant just for them, were important. This study indicated that students do not want general text-messages from the University but do appreciate, and give high customer satisfaction ratings for messages directed at just action items specifically targeted to them. Future research should seek to study circumstances and situations where targeted messages are most effective.

Future research should also include investigating if text messaging would provide more effective communication during the recruitment and advising stages of the graduate school journey. I believe this study suggests the possibility for positive benefits in including text messaging during the recruitment process, so applicants can gain more knowledge about the graduate application process before beginning the actual application, as well as adding this communication strategy to the early advisement process, as the newly admitted students get enrolled in classes.

Conclusion

My study provided insight into how communications with applicants works within the Teachers College and revealed the importance of establishing relevant communication mediums to ensure applicants and students get the information they need quickly so they can reach the goals they have set for themselves.

To enhance student outreach, the Teachers College needs to connect with students in meaningful ways that are appropriate to how they prefer to communicate. Millennials

communicate differently than previous generations. Therefore, to provide the most effective communication and the best customer service experience possible for my applicants, I must adapt to their communication ways and not expect them to adapt to mine. Since the millennial generation grew up with electronic communication tools, it seemed fitting to experiment with such a tool, text messaging, to increase effective communication and customer satisfaction with the application process.

When there is time-sensitive information that needs to get to an applicant or student, text-messaging resulted in a reduced lag time, thereby increasing effective communication between staff and student. If an applicant or student misses a deadline they can get irritated and may stop out of the process, so having a method of communicating with students that they respond to faster than email could mean fewer missed deadlines, less frustration, and an increased number of applicants who persist through the application process to become students. Further, I believe with effective communication across all departments of the OGSS, more prospective students would apply to programs, which would mean more applicants would become enrolled students and eventually reach their goals of becoming teachers!

With teacher shortages across the United States, I believe I need to do whatever I can to help those who wish to become teachers get through the application process. By adding text messaging to my tools for communicating with applicants, my findings indicated I did indeed fill “the gap” in effective communication that existed in my communication practices with applicants. By filling this gap, the communication effectiveness improved and customer satisfaction levels increased, thereby advancing the possibility applicants to the teacher certification programs would persist through the

application process as efficiently as possible so they could go on to becoming students, who eventually graduate and become our great teachers of tomorrow. Applicants to Teachers College programs are pursuing their dream, and when their application arrives in my admissions department that is just one of the steps along their journey. Maybe teaching wasn't the first career goal they had, but now they want to make a difference in the lives of our nation's children, and that is such a worthy ambition. I want to do whatever I can to help them reach their personal goals, and I believe I found a way, through text messaging communication, to help make their teaching dreams a reality.

REFERENCES

- Arizona Department of Education. (2015). *Educator Retention and Recruitment Report*. Phoenix, AZ: Arizona Department of Education.
- Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 40*(5), 518-529.
- Auter, P. J. (2007). Portable social groups: willingness to communicate interpersonal communication gratifications, and cell phone use among young adults. *International Journal of Communications, 5*(2), 139-156.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Carlson, S. (2005, October 7). The Net Generation Goes to College. *The Chronicle of Higher Education*. Retrieved from <http://chronicle.com/article/The-Net-Generation-Goes-to/12307/>
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2015). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research*. Boston, MA: Pearson Education, Inc.
- Crookson, B. B. (1972). A developmental view of academic advising as teaching. *Journal of college student personnel, 13*(1), 12-17.
- DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*, 147-160.
- Earl, W. R. (1988). Intrusive advising of freshman in academic difficulty. *NACADA Journal, 8*, 27-33.
- Ericson, P. M., & Gardner, J. W. (1992). Two longitudinal studies of communication apprehension and its effects on college student success. *Communication Quarterly, 40*(2), 127-137. doi:10.1080/01463379209369828
- Fall 2013 Enrollment Summary*. (2013). Retrieved from <https://uoia.asu.edu/content/enrollment-summary>
- Flick, U. (2014). *An introduction to qualitative research*. Los Angeles, CA: Sage Publications Ltd.

- Graham, E. E., Barbato, C. A., & Perse, E. M. (1993). The interpersonal communication motives model. *Communication Quarterly*, 41(2), 172-186.
doi:10.1080/01463379309369877
- Green, S. B., & Salkind, N. J. (2014). *Using SPSS for Windows and Macintosh: Analyzing and understanding data*. Upper Saddle River, NJ: Pearson Education, Inc.
- Habley, W. R. (1981). Academic advisement: The critical link in student retention. *NASPA Journal*, 18(4), 45-50.
- Hanson, T. L., Drumheller, K., Mallard, J., McKee, C., & Paula, S. (2011). Cell phones, text messaging, and Facebook: Competing time demands of today's college student. *College Teaching*, 59, 23-30.
- Heiberger, G., & Harper, R. (2008). Have you facebooked Astin lately? Using technology to increase student involvement. *New Directions for Student Services*, 124, 19-35.
doi:10.1002/ss.293
- Heisserer, D. L., & Parette, P. (2002). Advising at-risk students in college and university settings. *College Student Journal*, 36(1), 69-84.
- Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating sense of belonging in first year students. *Journal of Student Retention*, 4(3), 227-256.
- Hunter, M. S., & White, E. R. (2004, March-April). Could fixing academic advising fix higher education? *About Campus*, pp. 20-25.
- Ivankova, N. V. (2015). *Mixed methods applications in action research: From methods to community action*. Thousand Oaks, CA: Sage Publications, Inc.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.
- Junco, R., & Cole-Avent, G. A. (2008). An introduction to technologies used by college students. *New Directions for Student Services*, 124, 3-17. doi:DOI: 10.1002/ss.292
- Junco, R., & Cotten, S. R. (2011). Perceived academic effects of instant messaging use. *Computers and Education*, 56, 370-378.
- Junco, R., & Mastrodicasa, J. (2007). *Connecting to the NET.Generation: What higher education professionals need to know about today's students*. Washington D.C.: NASPA.

- Katz, E., Blumler, J. G., & Gurevitch, M. (1974). Utilization of mass communication by the individual. In J. Blumler, & E. Katz, *The uses of mass communications: Current perspectives on gratifications research* (pp. 19-34). London, England: Sage.
- Kleinglass, N. (2005). Who is driving the changing landscape in student affairs? *New Directions for Student Services*, 112, 25-38.
- Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change: The Magazine of Higher Learning*, 35(2), 24-32.
- Kuh, G. D. (2008). Advising for student success. In V. N. Gordon, W. R. Habley, & T. J. Grites, *Academic advising: A comprehensive handbook* (pp. 68-84). Manhattan, KS: Jossey-Bass.
- Kuh, G. D., Cruce, T. M., Shoup, R., Kinzie, J., & Gonyea, R. M. (2008). Unmasking the effects of student engagement on first-year college grades and persistence. *The Journal of Higher Education*, 540-563. doi:10.1353/jhe.0.0019
- Leung, L. (2007). Unwillingness to communicate and college student motives in SMS mobile messaging. *Telematics and Informatics*, 24, 115-129. doi:10.1016/j.tele.2006.01.002
- Levine, A., & Dean, D. R. (2012). *Generation on a tightrope: A portrait of today's college student*. San Francisco: The Jossey-Bass.
- Mertler, C. A. (2014). *Action research: Improving schools and empowering educators*. Thousand Oaks: Sage Publications, Inc.
- Miles, M., & Huberman, A. M. (1994). *Qualitative data analysis: A sourcebook of new methods*. Thousand Oaks, CA: Sage Publications.
- Naismith, L. (2007). Using text messaging to support administrative communication in higher education. *Active Learning in Higher Education*, 8(2), 155-171. doi:10.1177/1469787407078000
- Norén, L. (2004, October 11). Who is the Millennial generation? [Web log entry]. *Graphic Sociology*. Retrieved from <http://thesocietypages.org/graphicsociology/2011/10/04/who-is-the-millennial-generation-pew-research/>
- Palfrey, J., & Gasser, U. (2008). *Born digital*. Philadelphia: Basic Books.

- Phoenix Population*. (2016, October 16). Retrieved from World Population Review:
<http://worldpopulationreview.com/us-cities/phoenix-population/>
- Prensky, M. (2005, December). Listen to the natives. *Educational Leadership: Learning in the Digital Age*, 63(4), 8-13.
- President's Council of Advisors on Science and Technology. (2012). *Engage to Excel: Producing One Million Additional College Graduates..* Washington D.C.: Executive Office of the President.
- Rich, M. (2015, August 9). Teacher shortages spur a nationwide hiring scramble: Credentials optional. New York, NY, USA.
- Rubin, A. M., & Rubin, R. B. (1985). Interface of personal and mediated communication: A research agenda. *Critical Studies in Mass Communication*, 2(1), 36-53.
 doi:10.1080/15295038509360060
- Rubin, R. B., & Rubin, A. M. (1992). Antecedents of interpersonal communication motivation. *Communications Quarterly*, 40(3), 305-317.
- Rubin, R. B., Rubin, A. M., Graham, E. E., Perse, E. M., & Seibold, D. R. (2011). *Communication research measures II: A sourcebook*. New York, NY: Routledge.
- Schwebel, D. C., Walburn, N. C., Jacobsen, S. H., Jerrods, K. L., & Klyce, K. (2008). Efficacy of intrusive advising first-year students via frequent reminders for advising appointments. *NACADA Journal*, 28(2), 28-32.
- Shoup, R., Gonyea, R. M., & Kuh, G. D. (2009). Helicopter parents: Examining the impact of highly involved parents on student engagement and educational outcomes. *49th Annual Forum of the Association for Institutional Research*, (pp. 1-39). Atlanta, GA.
- Sloan, C. (2012, July 19). *How colleges can best connect with prospective students*. Retrieved October 10, 2016, from Inside Higher Ed:
<https://www.insidehighered.com/views/2012/07/19/how-colleges-can-best-connect-prospective-students-essay>
- Smith, A. (2015). A portrait of cell phone ownership. Pew Research Center. Retrieved from <http://pewinternet.org/2015/04/01/chapter-one-a-portrait-of-smartphone-ownership/>
- Smith, M., & Glass, G. V. (1987). Correlational studies. In M. Smith, & G. V. Glass, *Research and Evaluation in Education and the Social Sciences* (pp. 198-224). Needham Heights, MA: Allyn and Bacon.

- Spicuzza, F. J. (1992). A customer service approach to advising: Theory and application. *NACADA Journal*, 12(2), 49-58.
- Strauss, V. (2015, August 24). *The real reasons behind the U.S. teacher shortage*. Retrieved from Washington Post: https://www.washingtonpost.com/news/answer-sheet/wp/2015/08/24/the-real-reasons-behind-the-u-s-teacher-shortage/?utm_term=.b2c1c1530f7b
- Tinto, V., & Pusser, B. (2006). *Moving from theory to action: Building a model of institutional action for student success*. Washington DC: National Postsecondary Education Cooperative.
- Tyler, K. (2007, May). The Tethered Generation. *HR Magazine*, pp. 41-46.
- U.S. Department of Education. (2013). *A blueprint for R.E.S.P.E.C.T.* Retrieved from <http://www2.ed.gov/documents/respect/blueprint-for-respect.pdf>
- Varney, J. (2012). Proactive (intrusive) advising. *Academic Advising Today*, 35(3).
- Waterhouse, D. (2016, May 11). *The importance of high touch intrusive academic success coaching: Making it work*. Retrieved from The Evolution: A Destiny Solutions Illumination: <http://evollution.com/attracting-students/retention/the-importance-of-high-touch-intrusive-academic-success-coaching-making-it-work/>
- Weitzel, J. A., Bernhardt, J. M., Usdan, S., Mays, D., & Glanz, K. (2007). Using wireless handheld computers and tailored text messages to reduce negative consequences of drinking alcohol. *Journal of Studies on Alcohol and Drugs*, 534-537.
- Westervelt, E. (2015, March 4). *Where have all the teachers gone?* Retrieved from NPR: <http://www.npr.org/sections/ed/2015/03/03/389282733/where-have-all-the-teachers-gone>
- Wilson, E. V. (2004). A standards framework for academic e-advising services. *International Journal of Services and Standards*, 1(1), 69-82.
- Wolf-Wendel, L., Ward, K., & Kinzie, J. (2009). A tangled web of terms: The overlap and unique contribution of involvement, engagement, and integration to understanding college student success. *Journal of College Student Development*, 50(4), 407-428.
- World Population Review. (2016, October 16). *Phoenix Population*. Retrieved from World Population Review: <http://worldpopulationreview.com/us-cities/phoenix-population/>

Zhang, Y. (2015). Intercultrual communication competence: Advsing international students in a Texas community college. *NACADA Journal*, 35(2), 48-59.

APPENDIX A

TEXTED PARTICIPATION EMAIL – INTERVENTION GROUP

Dear (Name of Intervention group Applicant),

My name is Kathy O'Malley 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. Carl Hermanns, a faculty member in the MLFTC. We are interested in providing high-quality communication experiences for graduate programs.

We are asking for your help, which will involve your participation in the research by accepting to be sent text messages (copied to your email) about missing materials, deadlines, and other important and time-sensitive information. Your cell phone number will not be used for any other purpose. We ask that you also participate in taking a survey about communication and your experiences using text messaging with MLFTC staff, and also by participating in a short phone interview about our communication effectiveness for MLFTC Graduate Programs admissions. (This interview will be recorded). We anticipate the survey to take 10 minutes and the interview to take about 10-15 minutes. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time there will be no penalty whatsoever. Your name will not be used in any presentation of the research and you will remain completely anonymous. As compensation for participation, you will be entered into a drawing to receive a \$100 Amazon Gift card. Approximately 30-40 applicants will participate in the study.

The benefit to participation is the expansion of communication and information delivery methods to all Teachers College programs. Survey and interview results will also inform future communication and information delivery methods. Thus, there is potential to enhance the experiences that are provided to future applicants and newly admitted students that may ultimately influence the use of communication techniques campus wide. There are no foreseeable risks or discomforts to your participation. Your responses will be confidential. Results of the study may be used in reports, presentations, or publications but your name will not be known.

Please read the following consent statement and if you agree, please reply to this email consenting to your participation and we will begin to include text messaging as a form of communication with you. If admitted you will be sent a link to the survey and contacted to schedule the phone interview.

Consent statement: I agree to communication by text message as one of the ways the admissions specialist may contact me, as well as I agree to participate in the survey and interview being conducted. I understand the survey will take approximately 10 minutes and the phone interview, if admitted to a program, will take approximately 10-15 minutes to complete. I understand that my relationship with the college will not be affected if I opt out of doing the survey or interview. I am at least 18 years of age.

If you have any questions concerning the research study, please contact the research team:

Dr. Carl Hermanns at Carl.Hermanns@asu.edu or Katherine O'Malley at Kathy.OMalley@asu.edu or 602-543-0005.

Thank you,

Katherine O'Malley, Doctoral Student,

Dr. Carl Hermanns, Clinical Associate Professor

Please let me know if you wish to be part of the study and will let me audio record your phone interview responses.

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 the chair of human subjects institutional review board through the ASU Office of Research Integrity and Assurance at 480-965-6788.

Best Regards,

Kathy O'Malley, M.Ed.

Admissions Specialist

Arizona State University | Mary Lou Fulton Teachers College

PH: 480-543-0005 | e-mail: Kathy.OMalley@asu.edu

APPENDIX B

TEXTED PARTICIPANT EMAIL – COMPARISON GROUP

Dear (Name of Comparison group Applicant),

My name is Kathy O'Malley 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. Carl Hermanns, a faculty member in the MLFTC. We are interested in providing high-quality communication experiences for graduate programs.

We are asking for your help, which will involve you in the research conducted to examine communication practices in the MLFTC during the admission process. We ask that you also participate in taking a survey with communication during the application process and also by participating in a short *phone* interview about our communication effectiveness for MLFTC Graduate Programs admissions. (This interview will be recorded). We anticipate the survey to take 10 minutes and the interview to take about 10-15 minutes. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time there will be no penalty whatsoever. Your name will not be used in any presentation of the research and you will remain completely anonymous. As compensation for participation, you will be entered into a drawing to receive a \$100 Amazon Gift card. Approximately 30-40 applicants will be in the study.

The benefit to participation is the expansion of communication and information delivery methods to all Teachers College programs. Survey and interview results will also inform future communication and information delivery methods. Thus, there is potential to enhance the experiences that are provided to future applicants and newly admitted students that may ultimately influence the use of communication techniques campus wide. There are no foreseeable risks or discomforts to your participation. Your responses will be confidential. Results of the study may be used in reports, presentations, or publications but your name will not be known.

Please read the following consent statement and if you agree, please reply to this email consenting to your participation.. If admitted you will be sent a link to the survey and contacted to schedule the phone interview.

Consent statement: I agree to participate in the survey and interview being conducted. I understand the survey will take approximately 10 minutes and the phone interview, if admitted to a program, will take approximately 10-15 minutes to complete. I understand that my relationship with the college will not be affected if I opt out of doing the survey or interview. I am at least 18 years of age.

If you have any questions concerning the research study, please contact the research team:

Dr. Carl Hermanns at Carl.Hermanns@asu.edu or Katherine O'Malley at Kathy.OMalley@asu.edu or 602-543-0005.

Thank you,

Katherine O'Malley, Doctoral Student,

Dr. Carl Hermanns, Clinical Associate Professor

Please let me know if you wish to be part of the study and will let me audio record your phone interview responses.

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 the chair of human subjects institutional review board through the ASU Office of Research Integrity and Assurance at 480-965-6788.

Best Regards,

Kathy O'Malley, M.Ed.

Admissions Specialist

Arizona State University | Mary Lou Fulton Teachers College

PH: 480-543-0005 | e-mail: Kathy.OMalley@asu.edu

APPENDIX C

CELL PHONE USAGE AND COMMUNICATION PRACTICE (CPUCP) SURVEY

Here are some reasons that people give for why they use cell phones. There is no right or wrong answer. Indicate the degree to which you agree or disagree to each statement.

Strongly Disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6

Construct measured: *Cell Phone Use Motivations*

Sub-constructs: *Relaxation, Companionship, Habit, Pass the Time, Information Gathering, Entertainment, Social Interaction, and Escape* (2 questions per sub-construct).
Published survey section from Rubin, et al. (2011)

I use my cell phone....

1. Because it relaxes me.
2. So I can stay connected with friends and family.
3. When there is no one else to talk to or be with.
4. So I can access information I need to know.
5. Just because it is there.
6. When I have nothing better to do.
7. Because it entertains me.
8. So I can communicate with other people about what is going on.
9. Because I like to use it.
10. Because it helps me learn things I need to know.
11. Because it makes me feel less lonely.
12. So I can forget about school, work, or other things.
13. So I can get away from what I am doing.
14. Because it allows me to unwind.
15. Because it passes the time when I am bored.
16. Because it is enjoyable.

Here are some statements people make about themselves or about cell phones. For each statement, please select the number that best expresses your own feelings about yourself or cell phones.

Strongly Disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6

Construct measured: *Cell Phone Use Affinity*. Published survey section from Rubin, et al. (2011)

1. Using and communicating with my cell phone is one of the most important things I do each day.
2. I would feel lost without my cell phone.
3. Using my cell phone is not an important part of my life.
4. If my cell phone was not working, I would really miss it.
5. Using and communicating with my cell phone is very important in my life.
6. I could easily do without my cell phone.

Here are several reasons people give for why they communicate with other people. There is no right or wrong answer. Indicate the degree to which you agree or disagree with each statement.

Strongly Disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
1	2	3	4	5	6

Construct measured: *Interpersonal Communication Motivations*

Sub-constructs: *Inclusion, Relaxation, Pleasure, Affinity, Escape, and Control.*
(3 questions per sub-construct) Published survey section from Rubin, et al. (2011)

1. Because it is fun.
2. To help others.
3. Because I need someone to talk with.
4. To put off something else I should be doing.
5. Because I have nothing better to do.
6. To get something.
7. Because it allows me to unwind.
8. Because it makes me feel less tense.
9. Because I am concerned about other people.
10. To get away from what I am doing.
11. Because it makes me feel less lonely.
12. Because I need someone to do something for me.
13. Because it is exciting.
14. To let others know I care about their feelings.
15. Because I need to talk about my problems.
16. To have a good time.
17. Because it relaxes me.
18. To tell others what to do.

Here are several statements about the effectiveness of your communication with Teachers College Admissions staff. For each statement, please select the number that best

expresses your agreement or disagreement with the statement.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6

Construct measured: *Effective Communication*

Sub-constructs: *Quantity of Communication Occurrences, Quality/Content Appropriate Messages, Messages Received and Read, and Timely Messages* (3 questions per sub-construct)

1. I received just enough communication to feel informed about my application status.
2. The information sent to me about my application helped me understand my application status.
3. I received the right amount of communication to feel informed of my application status.
4. When I asked a question, I received an answer promptly.
5. I read all email communication sent by the Teachers College admissions staff.
6. I received too little communication to feel informed about my application status. (R)
7. Teachers College Admissions staff responded to questions in a timely manner.
8. I received information about my application status consistently throughout the application process.
9. The information communicated to me contained the right information I needed.
10. I do not remember receiving information about my application status. (R)
11. The information sent about my application helped me answer a question.
12. I received useful information about my application status.

Here are several statements about your satisfaction with the application process. For each statement, please select the number that best expresses your agreement or disagreement with the statement.

Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6

Construct measured: *Customer Satisfaction*

Sub-constructs: *Convenience, Targeted Communication, Knowledgeable staff, Institutional Connectedness, and Best Interests.* (3 questions per sub-construct)

1. Communication I received from Teachers College Admissions staff was specific to my application.
2. If Teachers College Admissions staff could not answer my question, they would help me find the answer I needed.

3. I always knew the status of my application to the Teachers College.
4. I feel my decision to attend ASU was a good one for me.
5. The information sent about my application helped me answer a question.
6. The application tracking on MyASU was either unknown to me or inconvenient to use.
7. When communicating with the Teachers College Admissions staff, they focused on my question or problem.
8. Communicating with Teachers College Admissions staff was easy.
9. I knew I could get the right answer from Teachers College Admissions staff.
10. Teachers College Admissions staff has my best interests in mind when communicating with me.
11. I knew I had support for my questions from Teachers College Admissions staff.
12. When communicating with Teachers College Admissions staff, they were thoughtful of my specific situation.
13. I received useful information needed to complete the submission of materials for my application.
14. Too much of the communication from Teachers College Admissions staff was not of interest to me. (R)
15. I felt I could trust the Teachers College Admissions staff.

Note: The section of the survey below consisting of 12 questions about TextEd, was only administered to Intervention group

Here are several statements about using text messaging for communication about your Teachers College application. For each statement, please select the number that best expresses your agreement or disagreement.

Construct measured: *Effective Proactive Advising*

Sub-constructs: *Communication Levels*, and *Connectedness with Teachers College staff*
(6 questions per sub-construct)

1. I liked receiving text messages as part of the Teachers College Admissions staff communications.
2. Text messaging from Teachers College admission staff made it easy to stay informed about my application status.
3. The text messages I received included information I needed to finish my application/submit materials.
4. I liked knowing if my application needed my attention, Teachers College Admissions staff would contact me by text message so I could quickly react.
5. Text messages are easier to read for quick information than emails.
6. I read text messages more frequently than emails from Teachers College Admissions staff.
7. It was faster to respond by text message than to write an email response.
8. I received and read all text-messages from Teachers College Admissions staff.

9. Text messaging made it easier to get the information needed to finalize my application for the review committee.
10. Teachers College Admissions staff sent information I needed before I knew I even needed it.
11. It was easy for me to keep track of my application status with the text messaging by Teachers College Admissions staff.
12. I think it would be useful to communicate with text messaging with any staff member or advisor at Teachers College.

Demographic and general cell phone use section

1. What gender do you identify with?
 - a. Female
 - b. Male
 - c. Other (please specify)

2. Age
 - a. <16
 - b. 16 - 35 (This is the millennial age group)
 - c. 36 - 49
 - d. 50+

3. What is your ethnicity? (Please select all that apply.)
 - a. American Indian or Alaskan Native
 - b. Asian or Pacific Islander
 - c. Black or African American
 - d. Hispanic or Latino
 - e. White / Caucasian

- f. Prefer not to answer
 - g. Other (please specify)
4. Is your cell phone your main method of Personal communication?
- a. Yes
 - b. No
5. Which of the following activities do you do on your mobile or cell phone? (Check all that apply)
- a. Play videos (other than video games)
 - b. Send or receive photos
 - c. Send or receive emails
 - d. Make or receive phone calls
 - e. Take photos
 - f. General internet use (other than using social networking websites)
 - g. Send or receive texts
 - h. Record videos
 - i. Send or receive videos
 - j. Play podcasts
 - k. Play games
 - l. Purchase products or services
 - m. Play music
 - n. Send or receive instant messages

- o. Use social networking websites
 - p. Other (please specify)
6. Which of the following mobile or cell phone service providers do you use? (Please select all that apply.)
- a. AT&T
 - b. Boost Mobile
 - c. Cricket
 - d. MetroPCS
 - e. Sprint
 - f. T-Mobile
 - g. Trac-Fone
 - h. U.S. Cellular
 - i. Verizon Wireless
 - j. Virgin Mobile
 - k. I do not have a cell phone
 - l. My cell phone service provider is not listed above
7. In a typical day, about how many texts do you send?
- a. 0-10
 - b. 11-20
 - c. 21-30

d.31-40

e.More than 40

8. In a typical day, how many Personal emails do you send from your cell phone?

a.0-10

b.11-20

c.21-30

d.31-40

e.More than 40

9. In a typical day, how many Personal emails do you send from your computer?

a.0-10

b.11-20

c.21-30

d.31-40

e.More than 40

10. In a typical weekday, about how much time do you spend using your cell phone to send or receive Voice Calls?

a.Hours

b.Minutes

11. How many times a day do you check your Personal email?

- a.I check my personal email most days but not every day.
 - b.I check my personal email 1-2 times a day.
 - c.I check my personal email more than 3 times a day.
12. Including all Spam and Advertising, please estimate how many emails you receive each day on all of your Personal email accounts combined.
- a.0-10
 - b.11-20
 - c.21-30
 - d.31-40
 - e.40+
13. Please choose the answer that best describes how you process your Personal emails.
- a.I never read my personal emails, they are all junk.
 - b.I quickly skim for emails I might need to read, but otherwise I leave as unread in my inbox.
 - c.I read several emails but mostly delete without reading.
 - d.I open most emails, read some of the content and delete if they do not interest me.
 - e.I always read every email, otherwise I might miss something important.
 - f. Other (please specify)
14. What is the general location of your cell phone?

- a. My cell phone is always right next to me or in my pocket, purse, or bag where I can hear it ring or vibrate.
- b. My cell phone is nearby but I cannot always hear it.
- c. I occasionally check my cell phone for missed calls or messages as I do not keep it with me at all times.
- d. I do not carry a cell phone.

APPENDIX D

NEWLY ADMITTED STUDENT INTERVIEW PROTOCOL – INTERVENTION

GROUP

The purpose of this interview is to understand your experiences in communicating with Teachers College staff using text messaging.

1. Please describe how you communicate with friends, family, and important others such as supervisors or co-workers on a daily basis.
 - a. Do you text message often during the day?
2. Please describe the processes you used to get information about your program and other university application requirements when applying to the Teachers College.
3. Please describe your experiences using text messaging with staff members in the Teachers College.
4. Did text messages from the admissions staff help you feel informed about the application process? If so, please describe a specific experience.
5. How did you use the text message information you received from Teachers College staff members?
 - a. Did the information help you solve a problem and complete your application?
6. Did you rely on text messaging or emails to communicate with MLFTC staff more often?
7. Do you have any questions for me?

I appreciate your time and thank you for participating in this interview with me.

APPENDIX E

NEWLY ADMITTED STUDENT INTERVIEW PROTOCOL – COMPARISON

GROUP

The purpose of this interview is to understand your experiences in communicating with Teachers College staff.

1. Please describe how you communicate with friends, family, and important others such as supervisors or co-workers on a daily basis.
 - a. Do you text message often during the day?
2. Please describe the processes you used to get information about your program and other university application requirements when applying to the Teachers College.
3. Please describe your experiences communicating with staff members in the Teachers College.
4. Did email communication from the admissions staff help you feel informed about the application process? If so, please describe a specific experience.
5. How did you use the email information you received from Teachers College staff members?
 - a. Did the information help you solve a problem and complete your application?
6. Do you have any questions for me?

I appreciate your time and thank you for participating in this interview with me.

APPENDIX F

DATA COLLECTION INSTRUMENTS AND JUSTIFICATION

Research Question	Data Collection Instrument	Description	Justification	Data Analysis
RQ1 How and to what extent do applicant's communication needs influence cell phone use?	Survey Web-based - CPUCP	40 question survey section for the Intervention and Comparison groups Instrument constructs: <ul style="list-style-type: none"> • Cell Phone Use Motivations • Cell phone affinity • Interpersonal Communication Motivations 	To gain knowledge of what motivates applicants to communicate and how applicants prefer to communicate. Understanding how applicants prefer to communicate will help staff to communicate more effectively.	SPSS - gather descriptive statistics Independent samples t-test – compare means for similarity between groups
	Interview	Semi-structured interview of Intervention group and Comparison group participants – interview after admittance	A semi-structured format will allow the researcher to use follow-up questions to explore the experiences of Intervention group applicants and gain a deeper understanding of how they experienced communication with staff to explore if differences between the groups exist.	Gather data on how applicants communicated with staff Record and transcribe all interviews Read and reread all transcripts Identify emerging themes and categories HyperRESEARCH will aid in the coding and theme building. Make assertions about the data. Collaborate findings with survey
RQ 2 To what extent does TextEd influence the effectiveness of communication between applicants and Teachers College admissions staff?	Survey Web-based - CPUCP	12 question survey section for both the Intervention group and Comparison group to gauge communication effectiveness between applicant and Teachers College staff during the admission process – Given to participants after admittance Instrument construct: <ul style="list-style-type: none"> • Effective Communication Sub-constructs: <ul style="list-style-type: none"> • Quantity of Communication Occurrences • Content appropriate messages • Messages received and read • Timely messages 	Data from the Comparison group will help explain if there is a difference in communication effectiveness using TextEd.	SPSS - gather descriptive statistics Independent samples t-test – compare means for differences between groups
		12 question survey section to assess newly admitted students in the Intervention group only on how TextEd influenced their communication with Teachers College staff members –Given to participants after admittance Instrument construct: <ul style="list-style-type: none"> • Effective Proactive Advising Sub-constructs: <ul style="list-style-type: none"> • Communication levels • Connectedness to Teachers College staff 	To know if using TextEd proactive advising increased communication levels and feelings of connectedness to inform on TextEd as effective communication promoting connectedness with Teachers College staff	SPSS - gather descriptive statistics
	Researcher Journal	To understand how Teachers College staff used text messaging with applicants	To capture researcher experiences and reflections throughout the dissertation process including implementing and using text messaging with applicants in the Intervention group.	Line by line coding Identify relationships and related ideas Build larger themes
	Interview	Semi-structured interview of Intervention group and Comparison group participants – interview after admittance	A semi-structured format will allow the researcher to use follow-up questions to explore the experiences of Intervention group applicants and gain a deeper understanding of how they experienced communication	Gather data on how applicants communicated with staff Record and transcribe all interviews Read and reread all

			with staff to explore if differences between the groups exist.	<p>transcripts</p> <p>Identify emerging themes and categories</p> <p>HyperRESEARCH will aid in the coding and theme building.</p> <p>Make assertions about the data.</p> <p>Collaborate findings with survey</p>
<p>RQ 3</p> <p>How and to what extent does TextEd influence applicants' customer satisfaction during the application process?</p>	<p>Survey</p> <p>Web-based - CPUCP</p>	<p>15 question survey section for both the Intervention group and Comparison group to gauge customer satisfaction between applicant and Teachers College staff during the admission process – Given to participants after admittance</p> <p>Instrument constructs:</p> <ul style="list-style-type: none"> • Customer Satisfaction <p>Sub-constructs:</p> <ul style="list-style-type: none"> • Convenience • Targeted Communication • Knowledgeable staff • Institutional Connectedness • Best interests 	<p>Data from Comparison groups will help explain if there is a difference in customer satisfaction using TextEd.</p>	<p>SPSS - gather descriptive statistics</p> <p>Independent samples t-test – compare means for differences between groups</p>
	<p>Interview</p>	<p>Semi-structured interview of Intervention group participants – interview after admittance</p>	<p>A semi-structured format will allow the researcher to use follow-up questions to explore the experiences of applicants and gain a deeper understanding of how they experienced communication with staff as well as how proactive advising using text messaging influenced customer satisfaction through the application process to explore if differences between the groups exist.</p>	<p>Gather data on how students used TextEd</p> <p>Record and transcribe all interviews</p> <p>Read and reread all transcripts</p> <p>Identify emerging themes and categories</p> <p>HyperRESEARCH will aid in the coding and theme building.</p> <p>Make assertions about the data.</p> <p>Collaborate findings with survey</p>
	<p>Researcher Journal</p>	<p>To understand how Teachers College staff used text messaging with applicants and how it influenced customer satisfaction.</p>	<p>To capture researcher experiences and reflections throughout the dissertation process including implementing and using text messaging with applicants in the Intervention group.</p>	<p>Line by line coding</p> <p>Identify relationships and related ideas</p> <p>Build larger themes</p>
<p>RQ 4</p> <p>How do applicants experience TextEd as effective communication?</p>	<p>Interview</p>	<p>Semi-structured interview of Intervention group participants who experienced the TextEd intervention – interview after admittance</p>	<p>A semi-structured format will allow the researcher to use follow-up questions to explore the experiences of applicants and gain a deeper understanding how students experienced proactive advising using text messages.</p>	<p>Gather data on how students used TextEd</p> <p>Record and transcribe all interviews</p> <p>Read and reread all transcripts</p> <p>Identify emerging themes and categories</p> <p>HyperRESEARCH will aid in the coding and theme building.</p> <p>Make assertions about the data.</p> <p>Collaborate findings with survey</p>

APPENDIX G
APPLICATION CHECKLIST



Application Checklist
Master and Arizona Certification (MAC)

Applicant Name _____ **ASU ID#** _____

Term: _____ **Term** _____

Initial Contact _____

Date _____

- Thank you for applying email
- Research participation email
- Intervention group – agreed to text messages
- Comparison group – communication per standard practices

Missing Materials:

- Transcript
- IVP fingerprint card
- LORs #1 _____ #2 _____ #3 _____
- Other (please state) _____

Proactive advising contact via text message

Date _____ Description _____

Date _____ Description _____

Date _____ Description _____

Date _____ Description _____

Date _____ Description _____

Date _____ Description _____

Date _____ Description _____

Date _____ Description _____

Admittance Contact

Admitted Date: _____

- Congratulations email and text
- Text with survey link – Intervention and Comparison group
- Text to prompt scheduling of interview – Intervention group only (time constraints)

Notes:

APPENDIX H

INTERNAL REVIEW BOARD EXEMPTION APPROVAL DOCUMENTATION



EXEMPTION GRANTED

Ray Buss
Division of Educational Leadership and Innovation - West
602/543-6343
RAY.BUSS@asu.edu

Dear Ray Buss:

On 11/12/2015 the ASU IRB reviewed the following protocol:

Type of Review:	Initial Study
Title:	Communication Process for Mary Lou Fulton Teacher's College (MLFTC) Graduate Programs
Investigator:	Ray Buss
IRB ID:	STUDY00003438
Funding:	None
Grant Title:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none">• Interview Questions, Category: Measures (Survey questions/Interview questions /interview guides/focus group questions);• Communication MLFTC Grad Programs Protocol, Category: IRB Protocol;• Recruitment-Consent Form for Interviews , Category: Consent Form;

The IRB determined that the protocol is considered exempt pursuant to Federal Regulations 45CFR46 (2) Tests, surveys, interviews, or observation on 11/12/2015.

In conducting this protocol you are required to follow the requirements listed in the INVESTIGATOR MANUAL (HRP-103).

Sincerely,

IRB Administrator

cc:

Katherine O'Malley