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Shifting Paradigms: Faculty's Navigation from the Classroom to Technology Enhanced Learning

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Shifting Paradigms: Faculty’s Navigation From the Classroom to Technology Enhanced Learning

By

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DISSERTATION
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For the Doctorate of Education
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Dedication

This has been a remarkable experience; one that has challenged and affirmed my sense of being. I dedicate this body of work to my mother Bernice Guess who has inspired and supported my triumphs and missteps my entire life; my sister Renee Blackwell who has always been my own personal chief marketing executive; and last but not least my husband Carl Sanderson who encouraged me and continued to provide the impetus to keep me on the trajectory to completion. I could not have embarked on this journey without the unconditional love and support of my entire family (Daddy J, Danilo, JaNell, Buffie, Darius, Raven, TuRon, Danilo II, Patrice, Roe and Maya).

For Raven, TuRon, Danilo II, and Maya let this be an inspiration to you to know that your dreams and goals are obtainable. Sometimes your path may not have clarity, but know that the exploration of the journey makes you who you are.
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ABSTRACT

Higher education is experiencing a decline in institutional resources, a change in student demographics, and a shift in teacher-to-student-centered learning. The impact of technology on faculty roles and the paradigm shift from the industrial age to the technological age has had a major influence on faculty and online teaching. This quantitative study was based on faculty technology experience, faculty’s attitude toward online teaching, the perceived quality of online teaching, and the institutional challenges; and how they impact faculty teaching modalities. It examined the training and support institutions provide to faculty as higher education becomes increasingly dependent on online teaching. Specifically, contrasting three levels of technology experience: digital immigrants, digital moderates, and digital natives; and pockets of resistance in delivering online teaching modalities in the 21st Century. Exploration of faculty technological self-efficacy was also analyzed based on faculty’s perceptions, experience, and technology usage in the classroom and online teaching.

Keywords: technology, perceptions, technology self-efficacy, online training
Chapter 1

INTRODUCTION

While marching into the digital age with increased speed pedagogy is drastically changing, technology has become pervasive within the educational landscape and faculty is challenged to answer the call. It is estimated that over five million students in the United States are taking at least one online course (Norris, Brodnick, Lefrere, Gilmour, & Baer, 2013). For faculty, the pressure to use technology for educational instruction comes not only from the bottom-up expectations of students but from top-down administrative pressures resulting from school restructuring (Wilson, 1998). The dynamics of higher education are rapidly changing with the rise of for-profit institutions exclusively delivering online teaching. For-profit online teaching is considered the fastest growing educational entity (Floyd, 2007) and has created a market share that has developed antithetical offerings that negated traditional higher education institutions to integrate technological platforms, which greatly impacts faculty roles within higher education. Non-profit institutions have been challenged with creating technological education deliverables, which impacts the institution’s global competitiveness. The infusion of technology in higher education has created an adverse assumption that faculty can naturally transition from the classroom to online teaching.

This study examined how higher education is meeting the growth of technology as it impacts face-to-face learning, the transition to a cache of online teaching initiatives, and how faculty is
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meeting that challenge. The study defined and examined three categories of technological experience among faculty:

- Level 1 is the Digital immigrant, a beginner to technology with the ability to use a mouse and keyboard, create a simple document, send and receive email, generally, needs assistance with other technical issues.
- Level 2 -- Digital moderate (intermediate) ability to format documents using various styles and templates spreadsheets, charts, and basic graphic web creations.
- Level 3 -- Digital native (experienced user), intrigued by technology, uses technology consistently, able to utilize and install software programs, the ability to troubleshoot technology issues, consistently uses various technology mediums and platforms with ease.

The categories were established to develop an understanding of the faculty member’s level of experience. The research created a comparative analysis based on the level of experience and ascertained correlations of faculty perceptions and attitudes to identify the receptiveness and implementation of online teaching. The unit of analysis began with faculty technology traits based on the level of technology experience. Technology experience in this study was defined as the ability of the respondent’s technology usage as it relates to computer-mediated skills.

Traditional non-profit universities are competing with escalating cost in a struggling economy, for-profit online universities delivery of convenience and free massive online open courses (MOOCs) are impacting higher education. Long (2013) stipulated that today, more than ever online teaching offerings are seen as a valid alternative. The study examined how traditional higher education must compete with online learning offerings and the impact on
Shifting Paradigms: Faculty’s Navigation From the Class faculty members in institutions of higher education. It also examined the discourse between faculty perceptions that online teaching is not a quality education.

The purpose of the study was to examine faculty perceptions and attitudes toward technology and online teaching, as they are shifting paradigms from the traditional classrooms and are now teaching in computer-enhanced or online environments. Through this examination, there are several factors that integrate this relationship that needs to be explored and understood. The study's research addressed: 1) faculty' technology experience; 2) attitudes toward online teaching and perceived quality of online teaching; and 3) institutional support and resources in technology to deliver quality online teaching. It also examined the infrastructure of support from institutional leadership as the rigors of institutional competition for students increased. With the rising cost of education, expectations and technological advances in pedagogy, faculty members must design online teaching to meet the needs of the 21st Century students who are grounded in technology and concepts of application. These students utilize technology with the ease of breathing.

Research Questions

1. Is there a relationship that exists between technology experience and faculty’s attitude to deliver online teaching?

2. Is there a relationship between faculty’s perceived quality of online teaching and their personal technology experience?

3. Is there a relationship between technology experience and institutional support and resources in technology to deliver online teaching?

4. Is there a relationship between technology experience and technology self-efficacy?
Definitions

*Digital Fluency* – the ability to produce and generate information rather than simply comprehend steps (National Research Council, 1999).

*Digital Immigrant* – (beginner) Ability to use a mouse and keyboard, create a simple document, send and receive email, generally, needs assistance with other technical issues.

*Digital Moderate* -- (intermediate) Ability to format documents using various styles and templates spreadsheets, charts, and basic graphic web creations.

*Digital Native* -- (experienced user), Intrigued by technology, uses technology mediums and platforms with ease, and has the ability to troubleshoot technology issues.

*Diploma Mills* – Reference to for-profit online institutions that recruit students irrespective of their academic ability to prosper within the curriculum.

*For-profit institutions* – Higher education facilities that are predominately online universities that generally are not contained in a brick and mortar facility.

*Socratic Pedagogy* -- Effective educational strategy for developing the social and intellectual capacities and skills for active citizenship in a democratic society (Turner & Thompson, 2014).

*Technology Experience* – An individual’s personal level of technology usage among groups, i.e. immigrants, moderates, and natives.

*Technology Literacy* -- The ability to use computers and technology to improve learning productivity and performance (U.S. Department of Education, 1996).
Technology Self-Efficacy -- An individual’s belief in their technological skills and ability to confidently rely on their judgement to perform.

Traditional Institutions – Are considered non-profit higher educational institutions that may be private or public facilities, known to have their beginnings in a brick and mortar classroom.

Transformational Leadership – About innovation and initiation, in which the leader identifies the needed change, creates a vision to guide the change through inspiration and empowerment, and executes the change with the commitment of the members of the group (Bennis, 2010).

Technology self-efficacy and institutional leadership that impacts faculty and their use of technology in higher education’s ability to deliver online teaching was reviewed as exploratory information. There was an array of topics from leadership, pedagogy, faculty, organizational development, and behavior as it related to technology that impacts online teaching. There are many studies in the area of technology reviewing faculty, student and institutional perceptions as it relates to higher education. Previous studies are broad and vast and continue to evolve due to the growth and impact of technology in higher education. Research has evolved from the introduction of computers in education, to analyzing integration of faculty and student acceptance, to understanding the variables of attitudes and skills associated with widespread online education. Some of the major innovations in technology took place during the period of 1995 through 2013 (Norris et al, 2013). As technology continues to evolve so must the research in this area due to the premise that some of the research data has become outdated, and there is an improved understanding of impacts and perceived benefits that are more apparent today than in previous studies. This study focused on the current faculty members at Governors State
University who are expected to teach hybrid and online courses and the utilization of in class technology enhanced programming such as platforms like Blackboard.

Institutions have been challenged with adhering to the inclusion of technology in their curriculum offerings to keep pace with the demands of technology and to remain competitive as an institution of higher learning. There have been many innovations in relationship to faculty and technology, and online teaching to espouse the changing dynamics of educational deliverables. Carol Twigg and Robert Heterick (1994) founded the National Learning Infrastructure Initiative (NLII), developing pioneering work in technology to reinvent courses and change patterns of faculty-learner-mentor-peer interaction. The Sloan Consortium formed in 1995 advanced emerging practices of online and asynchronous learning. The Society for College and University Planning published Transforming Higher Education: A Vision for Learning in the 21st Century by Michael G. Dolence and Donald M. Norris, which examined teaching, training, experiences, and perspectives offered by higher education and the need to be realigned with the needs of society and then redesigned, redefined, and reengineered (Dolence & Norris, 1995).

There have been various studies that examine the technological values of deliverables as they relate to higher education and faculty. There are several studies related to online learning examining the capacity to deliver pedagogy and the impact on faculty work load. This study addressed an area where there is very little existing research into the impact and preparedness of faculty members as they move from the classroom to online teaching, based on the faculty’s technology experience and the behavioral effects. The study also examined the faculty member’s perceived quality of online education and their level of preparedness, and how it impacts online teaching. There is continued work to be done in this area due to the enormous
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This action research quantitative study was based on faculty and their use of technology, but it also explored institutional challenges from leadership, perceptions, and the institutional support and training offered to faculty as higher education becomes more dependent on technology-driven learning. The study examined three levels of technology experience; and how the faculty members utilize technology in their teaching modalities, whether it is online teaching, blended, or traditional classroom teaching. Conversely, the study reviewed the faculty member’s skill level to utilize technology in online teaching. Through this examination will faculty’s impact on; those students who are grounded in technology and move through technological platforms with ease become a factor to integrate online teaching? The theoretical frame used two theories; constructive theory provides the inclusion of a variety of learning perspectives that relate to faculty being receptive to other perspectives and the exploration of active learning; and transformational learning, which is the capacity for critical thinking and evaluation of basic assumptions. The data collection process consisted of collecting data from faculty via survey, and the review of administrative leadership, training programs, training mandates, and/or absence thereof.

The research for this study was born from a conceptual review by the researcher engaged in online courses as a student with faculty from varied disciplines and technological experience. It was apparent from the researchers’ perspective that the experience of the faculty teaching the online courses dictated the level of interaction with the students within the courses. The depth of the online educational deliverables and the interactive course design or lack thereof; was driven
by the faculties’ technology experience. Conversely, the level of faculty-student course
interaction was also predicated on the faculty understanding and training in the technological
tools. The dichotomy of online course experience from the researcher’s perspective was so
drastically different from course-to-course, that the decision was made to develop research in this
area, which speaks to the questions of this study. It is believed that students who are
technologically experienced and have a sense of self-discipline can do well in online courses.
Online teaching set the stage for a different kind of learning and faculty must be experienced in
technology and trained in the prescribed applications to have the ability to develop online
teaching that has a direct correlation to the student’s creativity, communication, collaboration,
and research initiatives. While the online platform may not invoke the same interactions as the
face-to-face course the availability of the instructor within the context of student-faculty
interaction; the clarity of assignments and the overall educational deliverables must be as
significant an experience online as it is face-to-face. These courses must build the same capacity
for students as the brick and mortar classroom. Does the administration make the assumption
that faculty who can teach in the classroom naturally have the capacity to teach online? This
study addressed the need for technology experience, institutional training and support, and the
level of the experience that shaped the individual attitude toward online teaching.

The primary participants for this research were the Governors State University (GSU)
faculty that consisted of full and assistant professors, instructors, lecturers, adjunct faculty, and
other. The criterion was based on faculty who were currently teaching online, blended, and other
technology-infused courses. Snowball sampling was used to provide additional feedback from
faculty who teach at other institutions who have the similar characteristics of the GSU faculty.
Current training practices initiated at the Governors State University encompassed new faculty orientation for all new faculty hires, which includes Blackboard orientation and IT orientation. All faculty members have access to assistance from IT and Blackboard; IT is available during course offerings to ensure assistance with technology. The faculty is able to receive certification in online teaching, albeit it is not a requirement to teach online. Phones are equipped in the smart classrooms to ensure that faculty has immediate access to technology assistance when needed, as well as Blackboard assistance. All faculties at GSU are required to utilize a course shell in Blackboard to ensure that students have access to course material such as syllabi, even if the course is not an online class.
Chapter Two

LITERATURE REVIEW

Higher education is experiencing a decline in institutional resources, student demographics are changing, and there is a shift in teacher to student-centered learning, the impact of technology on faculty roles, and the paradigm shift from the industrial age to the technological age has had a major influence. These challenges and opportunities exist simultaneously in the faculty and leadership ranks of our colleges and universities (Eddy & VanDerLinden, 2006). Thus, faculties in higher education are being mandated to infuse technology in their teaching modalities. This requires a paradigm shift for many faculty members who are only accustomed to teaching in face-to-face settings and are reluctant to move into the online paradox.

This quantitative study was based on faculty and their use of technology, technology experience, and perceptions as they relate to online teaching, and the training and support institutions provide. The study also examined relational institutional challenges from leadership as higher education becomes increasingly dependent on technology-driven learning. In addition the study examined the correlation of reluctance of faculty to accept the challenge to utilize technology due to the lack of unfamiliarity with the medium and/or the lack of perceived support from their institutions.

The time-honored tradition of tenured professors lecturing and dispensing individual assignments where technology is limited to PowerPoint slides (O'Neill, 2013) is a thing of the past. We have
moved firmly into the digital age, and there are significant implications for higher education institutions, faculty, and leadership with regard to delivering education via technology. Carlson (2000) wrote that integrating faculty members and technology with education continues to be a priority among administrators. There are challenges and opportunities for institutional leaders to design concrete and comprehensive initiatives for technological development for faculty. Leadership in higher education must be transformative to change the nuances of higher education to meet the needs of faculty members who are at the forefront of transforming higher education in the 21st Century. Bass (2010) stipulated that an organization that is permeated with transformational leadership from top to bottom conveys to its own personnel that it has its eyes on the future.

As a result, this study was designed to create a comparative analysis of the level of faculty technology experience as it relates to the institutions’ implementation of comprehensive effective online teaching. Technology has drastically changed the view of previously perceived student learning processes. Guskin (1994) suggested that the primary environment for students, the fairly passive lecture-discussion format where faculty talk and students listen, is contrary to almost every principle of optimal student learning. Faculty will be challenged with restructuring their role in higher education due to technology-enhanced courses, and the mandate for institutions of higher education to compete. Faculty must be able to embrace change and develop curriculum inclusive of technology with sustained support from institutional leaders. The far-reaching impact of technology whether it is digital, mobile or virtual (O’Neill, 2013) will profoundly affect pedagogy deliverables as we move forward. Georgina and Olson (2007) stipulated that we must define technology literacy to understand the integration of technology in
higher education and the impact on pedagogy. The U.S. Department of Education defined technology literacy as the ability to use computers and technology to improve learning productivity and performance, it is as fundamental as individual skills to reading, writing, and arithmetic (1996, par 1). Faculty must have the ability to embrace online teaching modalities relying upon their own perceptions of technological skill levels and preparedness. Sellani and Harrington (2002) stipulated that online teaching has created new challenges for faculty and administration. This study was designed to bring context and understanding of how the infrastructure must support faculty members and provide systemic and sustainable development for faculty members to embrace new ideas and innovation with regard to technology in education. It also reviewed literature on (Orr & Penington, 2009; Dolence & Norris, 1995; Bensimon & Newman, 1989; Bodia & Nawaz, 2010; and Bolliger, Inan, & Wasilik, 2004; Bass, 2010) how the institutional leader’s leadership style impacts the paradigm shift for faculty support and their ability to embrace technology within the curriculum. It is suggested that some faculty are more adept at technology than others and have natural digital fluency (Wang, Com, Myers, & Sundaram, 2013). National Research Council (1999) defined digital fluency as “the ability to reformulate knowledge to express creatively and appropriately, and to produce and generate information rather than simply to comprehend it” (p. 9).

This research explored the variance of three technology literacy groups: digital immigrants, digital moderates, and digital natives with regard to experience, perceived quality of online teaching, and institutional training and support. For the purpose of this research, faculty technology experience was defined as follows: digital immigrants are beginners with minimal understanding of the technology, possessing the ability to create a simplistic document, and to
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send and receive email; digital moderates, intermediate level users, have the ability to format
documents, graphs, and charts using various styles; and lastly digital natives, experienced users,
intrigued by technology, uses technology mediums and platforms with ease, and have the ability
to troubleshoot technology issues. Oblinger and Oblinger (2005) stipulated that there is a
common belief that older faculty members have less experience with technology and are more
committed to traditional teaching methods, and conversely are less likely to adopt educational
technologies. It was the contention of this study that technology experience and the support
structure of implementation are the driving force for faculty integration to online teaching.

Among the nation’s largest research institutions, 99% offer some online courses with
over 55% offering complete degree programs online. Regarding institutional strategic planning,
58% consider online learning key to institutional growth (Allen & Seaman, 2007). Faculty
members who are comfortable with teaching face-to-face realized that this experience is not
transportable to the online environment, a new set of skills must be developed encompassing
both technical computer skills and communication skills (Sellani & Harrington, 2002). The
study by Tabata and Johnsrud (2008) revealed that there are eleven significant variables crucial
to faculty embracing online instruction. It identified the importance of software, e-resources,
skillful use of technology, faculty technical skills, quality of the online course, perceived as high
as traditional classroom course, online education being compatible to work style, faculty self-
image is enhanced by technological innovations, online education courses perceived as difficult,
the ability to see results of online delivery, and the ability to try out online teaching before
committing. As faculty move from the bricks and mortar classroom, they must be adaptable to
these modalities to embrace the transition to online teaching. Sellani and Harrington (2002)
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Posited some faculty members see technology as one of the greatest gains in education; other faculty members want to avoid technology completely. The faculty members’ lack of technology experience is the determining factor of how they use technology as a teaching modality. The individual technological competency is the guiding force of how online teaching is embraced within the teaching environment. Providing appropriate administrative support, technical expertise and online infrastructure have also been reported as barriers to faculty involvement in online education (Li, 2004).

Fear of technology is always an issue; developing online courses demand considerable instructional development effort and time on the part of faculty members, and doing so requires them to master the technology to deliver online teaching (Finney, 2004). For faculty to be successful at embracing this change, it is critical that institutions support online teaching methodology. While faculty members who are skilled in teaching in bricks and mortar classrooms they must develop an entirely new skill set to be adaptable to teaching online. Based on the demands of the institution to move to online teaching modalities faculty have had to shift paradigms to adjust to online teaching, although they may lack the appropriate training and preparation. Conversely, faculty members are not committed to the process and the question arises surrounding the viability of this process and how it impacts the institutional academic deliverables.

Tabata and Johnsrud (2008) indicated five variables attributing to the decreased likelihood of faculty involvement in online teaching. These include the perception of faculty that 1) resources are not available to support online teaching, 2) the institution does not value online education, 3) participation in online instruction is not voluntary, 4) faculty cannot share online
instruction results with other faculty, and 5) the advantages of teaching online do not outweigh the disadvantages. As the reality of the five variables were examined; faculty who feel unprepared due to the lack of support and resources of structured online training and the lack of technology experience tend to shy away from teaching online courses. While they have been trained to teach face-to-face they find it difficult to navigate online concepts; and as a results feel disconnected from the process. With the lack of face-to-face contact, the faculty members find it difficult to share instruction with their colleagues due to different levels of technology experience. When faculty lack the technology experience, their perspective of online learning advantages is eliminated through their inability to have contact with students; and their inability to receive non-verbal cues from students to ensure clarity of understanding. Orr, Williams, and Pennington (2009) suggested that the institution's recognition of faculty members' efforts to teach online in relation to the traditional concepts of scholarship, tenure, and promotion is an important motivational factor for sustaining effectiveness in the online teaching environment.

This study examined institutional efforts to alleviate or overcome challenges faced by faculty members in creating and teaching online courses and investigated faculty members' perceptions regarding these institutional efforts. Hislop and Ellis (2004) conducted a study of faculty members who have made the migration to online teaching. They attribute the result of this growth in online education to the increasing number of faculty at academic institutions that are being asked to teach an expanded number and variety of courses in an online format, with the lack of synchronous interactions between faculty and students. In addition, many courses taught in a traditional face-to-face format are incorporating one or more elements of online education, including the use of email, bulletin boards, chat rooms, virtual office hours, and online availability of course materials such as slides and links to tutorials. While the study looked at
these issues, it also investigated the impact of the capacity of faculty members to meet online teaching modalities and the impact of institutional leadership. In addition, the study looked at the variance of level of experience and contrasting perceptions and attitudes regarding online teaching and training.

The Online Learning Consortium (2015) specified the five criteria for quality online learning that guide the familiar continuous quality improvement (CQI) process of identifying goals and benchmarks, measuring progress towards goals, refining methods, and continuously improving outcomes (Sloan Consortium, 2006). The pillars are learning effectiveness, cost effectiveness and institutional commitment, access, faculty satisfaction and student satisfaction.

Online Learning Consortium Goals:

- **Learning Effectiveness** – Demonstrates that online learning outcomes meet or exceed institutional standards.
- **Cost** – Continuously improve services while reducing costs
- **Access** -- All learners who wish to learn online can access learning in a wide array of programs and courses.
- **Faculty Satisfaction** -- Faculty are pleased with teaching online, citing appreciation and happiness.
- **Student Satisfaction** - Students are pleased with their experiences in learning online, including interaction with faculty and peers, learning outcomes that match expectations, services, and orientation

Institutional Leadership Perspective
Institutions of higher learning are finding themselves under immense pressure to compete with for-profit online institutions and the ever-changing advances in technology. Institutional leaders are facing pedagogy transformation and in many cases are demanding that faculty keep pace with these demands. Many faculty members are experiencing trepidation due to their advanced skills in bricks and mortar classrooms are not transferable to the online teaching environment. As institutional leadership shapes the environment to embrace online teaching, some faculty members are not committed to the process, so leadership style is paramount to faculty's transformation to the technology-driven education (Georgina & Hosford, 2008).

The traditional model of leadership in higher education dictated that the administrator of the institution manages and shapes the environment and sets the goals and objectives through the skilled use of personal attributes, interpersonal abilities, and technical management skills (Baldrige, Curtis, Ecker, & Riley, 1977/2000). Other models stipulated that leadership is dependent upon the organization and faculty should have an integral role in shared governance. While the collegial leader acts from the position of first among equals to forge consensus among multiple constituents in an effort to meet these needs; acting as a power broker to exert influence through persuasion and diplomacy, using mediation and negotiation to build coalitions (Cohen & March, 1986; Estler, 1988). The traditional model indicates that leadership resides within one person rather than in a group and that leadership is defined on the basis of individual qualities and practices rather than in regard to the collective contribution of the organization’s members (Bensimon & Neumann, 1993). Leadership is the process of influencing a group towards the achievements of goals and a leader as the individual who can influence others (Bennis, 2010). The ability of the institutional leadership to positively influence change must occur through
in institutional support of faculty to create the infrastructure of developing training initiatives to provide ongoing support and resources of the technology. The institutional leader’s leadership style is paramount to creating a culture of change and how faculty members embrace that change.

The American Association of State Colleges and Universities (2006) has suggested that there is a gap between the dramatic expansion of online educational offerings by colleges and universities and the ability of these institutions to meet the needs of students and the faculty who teach these courses. According to research this type of leadership employed transactional leadership which focuses on attaining goals and connecting rewards to the attainment of the goals. There are two factors that are identified in transactional leadership behavior; 1) initiating and organizing work, concentrates on accomplishing the task at hand, and 2) showing consideration for the employees, satisfying the self-interest of those who do good work. This is a recognition based system that rewards when the task is well done or penalizes for poor performance. Bernard Bass stipulated that transactional leadership is a prescription of mediocrity. This is true if the leader relies heavily on passive management by exception, only intervening when procedures and standards to accomplish the task are not being met (Bass, 2010). The lack of rewards and recognition has been identified as a barrier among faculty who teach online, based on the increased time to create and monitor online courses.

According to The Society for College and University Planning Published Transforming Higher Education: A Vision for Learning in the 21st Century by Michael G. Dolence and Donald M. Norris, which examined teaching, training, experiences, and perspectives offered by higher education and the need to be realigned with the needs of society (Dolence and Norris, 1995).
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There is a rationale that online teaching improves student access, has higher degree completion rates, and appeals to millennial and non-traditional students. Conversely, Allen and Seaman (2007) identified institutional barriers as the lack of faculty acceptance and high costs associated with online development and delivery. Bolliger and Wasilik (2009) conducted a Faculty Satisfaction with Online Teaching Study that identified three factors that affected faculty satisfaction in the online environment: student-related, instructor-related, and institution related. The faculty related factors included: self-gratification and recognition for their work (Sloan Consortium, 2006); faculty are provided professional development opportunities (Panda & Mishra, 2007, Sloan Consortium, 2006); and the expectation of reliable infrastructure and technology (Panda & Mishra, 2007; Sloan Consortium, 2006). It was the contention of this research that faculty preparedness has a direct correlation to the institutional infrastructure for training and support services to teach online courses. Satisfaction for teaching online will generally decrease if faculty experience technological difficulties and do not have access to adequate resources and tools. The emergence of online teaching and the ability to compete with for-profit online institutions that are providing advanced online teaching modalities creates new challenges for faculty and administrators. Campuses across the country are feeling the impact of the technological revolution and as a result institutional leaders are demanding that education deliverables keep pace. Leadership is paramount to the advancement of these new technological modalities and how faculty makes the adjustment.

In review of institutional leadership, the previous focus was on the institutional leaders' personalities; more recent studies are focused on a full range of leadership styles and skills. A survey conducted by Bodia and Nawaz (2010) the Multifactor Leadership Questionnaire
measured transformational and transactional leadership styles among teaching staff in higher education institutions. Among 700 questionnaires the response rate was 41% and 265 questionnaires were used in the analysis. Hypothesis 1: There was significant difference in transformational leadership between public and private sector faculty. The research revealed that 59% of public sector faculty while 47% of those in private sector prefer transformational leadership style (Bodia & Nawaz, 2010). This, in part, indicates that faculty is receptive to implementing change that is needed to keep pace with the ever-changing nuances of higher education. The rise of the for-profit institutions speaks to the paradigm shift of the infusion of technology in higher education. It is incumbent upon the leadership within the institution to ensure that training and support are available as faculty makes the transition from classroom to online teaching modalities. Leadership concentration should be on improving the student experience and assisting faculty in advancing their technological teaching practices. This required accessibility to resources, support, and professional development, which are paramount to developing technology instruction.

In review of for-profit institutions like the University of Phoenix, faculty- training programs are structured to provide intensive training as a prerequisite for online teaching. They also assign a veteran faculty person as coach and mentor, and provide twenty-four-hour access to IT assistance. Traditional institutions are challenged with keeping pace with the convergence of technology and the lack of resources in this growing industry and have begun to redefine their market share through online course offerings. Breneman, Pusser, and Turner (2006) posited the entrepreneurial behavior of the for-profit sector of higher education and the student-centered educational offerings as the catalyst that advanced the for-profit institutions forward. While
traditional institutions have resources available on average to accommodate faculty training, many of these institutions do not require a structured online teaching training as a prerequisite to teaching an online course. For example, Governors State University offers an online teaching certification program, which is not a prerequisite to teaching an online course, Blackboard orientation; IT support and Blackboard support are not available 24 hours. Smart classrooms are equipped with phones to access IT support in real-time while class is in session. A survey of chief academic officers in 2009, reported that 19% of institutions did not provide training; and the same survey in 2011, reported a substantial decrease; of those surveyed, only 6% reported that no training was provided for faculty teaching online. (Allen & Seaman, 2011).

Institutional leaders must become proactive to ensure that ongoing training systems are in place to support the infrastructure to deliver online teaching modalities. Training systems must be designed to meet the needs of the faculty members; Bailey and Card (2009) stipulated that institutions have focused on providing faculty with technological training to enhance their online teaching while faculty need to learn more effective pedagogical practices. Institutional leaders must be mindful that technology is evolving and it creates a significant challenge for faculty to keep pace. They must be able to develop innovative faculty training programs; addressing communication and pedagogy using synchronous tools for successful transitions from bricks and mortar to online learning.

Turner and Thompson (2014) identified a change in teaching approach and interaction style that occurs in instructors of online courses, based on results of semi-structured interviews of 20 online instructors at NJIT. In 20 semi-structured interviews of faculty, coded with pattern analysis software, the authors captured role changes enacted by instructors in asynchronous
learning network (ALN) settings-cognitive roles, affective roles, and managerial roles. The
cognitive role, which related to mental processes of learning, information storage, and thinking,
shifts to one of deeper cognitive complexity. The affective role, which related to influencing the
relationships between students, the instructor, and the classroom atmosphere, required faculty to
find new tools to express emotion, yet they found the relationship with students more intimate.
The managerial role, which dealt with class and course management, required greater attention to
detail, more structure, and additional student monitoring. Overall, faculty reported a change in
their teaching persona, towards more precision in their presentation of materials and instructions,
combined with a shift to a more Socratic pedagogy, emphasizing multilogues with students.
O’Neill (2013) stipulated that institutions must be able to accommodate different learning styles
and the integration of technology in the educational curriculum supporting different learning
styles and alternative pedagogies to achieve student-directed learning.

Online enrollment has grown substantially faster in the past eight years than overall
higher education enrollment (Allen & Seaman, 2011). Institutions must be cognizant of
providing quality professional development, which will assist faculty with the skills for effective
online teaching. Vaill and Testori (2012) posited that organized faculty development programs
are a critical factor in the successful transition to online teaching, accompanied by ongoing
support and professional development opportunities. Garrison and Kanuka (2004) stipulated that
hybrid or blended learning will be transformative to higher education, because it is a low-risk
strategy that positions institutions for the next wave of new technological developments that will
emerge in the next few years. As Dolence and Norris (1995) stipulated, institutions must refine,
reengineer and redesign their institutional educational paradigm.
Understanding the faculty perceptions of institutional efforts to overcoming barriers to online teaching and learning is as important as online education is a necessary transformative innovation to meet the changing demands for higher education and to sustain institutional growth (Moller et al, 2008). It is imperative that transformational leaders’ make their presence felt throughout the organization and employees respond positively to engage in a shared vision; this leadership is contagious and resonates throughout the institution. These leaders must empower their faculty to enact change and create an atmosphere of inspiration to enact extra efforts to realize goals and objectives of the institution.

Institutional leaders must become proactive to ensure that training systems are in place to support the infrastructure to deliver online teaching modalities. Institutions must develop innovative faculty training programs; addressing communication and pedagogy using synchronous tools for successful transitions from bricks and mortar to online learning. Kirkup and Kirkwood (2005) and Zemsky and Massy 2004 contended that faculty may adopt instructional technologies that are fairly easy to incorporate, but may be hesitant on those that require radical teaching changes. Experience and comfort with one type of technology will encourage using other types, “unfamiliarity with or inadequate use of technology was a major cause of the problems and failures in online education” (Zhao, Alexander, Perreault, Waldman, & Truell, 2009, p 209).

A 2006 study by Britten and Craig (2006) found that 30% of faculty use technology daily for supporting instruction and 63% use it fewer than ten times each semester. New administrative concerns and strategies are being driven by the lack of the technology adoption and the increased cost of technology. Reid (2014) spoke to the lack of faculty willingness or
interest to adopt technology; absent of a full understanding of possible obstacles, higher education institutions are hampered in developing appropriate goals or sound strategies to adopt technology. This thought process directly correlates to Dolence and Norris (1995) premise that the need for higher education to be realigned with the needs of society and then redesigned, redefined, and reengineered. Conceptually, there is an understanding that higher education needs to refocus on the student-centered learning. It is the goal of higher education to ensure the capacity for the success of the students and the organization. Galloway and Lasley (2010) posited that current educational practices such as the centric lecture and classrooms designed for students to tell and grade is anachronistic and ill-suited for 21st Century students. It is clear that the dynamics of the faculty and the student interaction must change in order to keep pace with the changing landscape caused by the informational age in which students now reside. Schlechty (2011) stipulated that if classrooms are to be engaging and exciting, faculty will need to become “designers of experience for students” (p.3).

Zhao and Cziko’s (2001) Perceptual Control Theory (PCT) is a model of goal-oriented behavior. The framework speaks to the "goals of the faculty and how the use of technology might help or hinder their goals” (p.9). It implies that all behavior is goal-oriented. Conversely, it is the faculty's perception of the effectiveness of technology that determines whether the technology will be used, not the effectiveness of the technology (p. 21). Faculty should be focused on pedagogy rather than the iniquitousness of the technology. Administrators mistakenly make the assumption that faculty who can teach in the classroom inherently have the capacity to teach online. This study addressed the need for technology experience, institutional training and support, and analyzed how the level of experience shapes the individual attitude
Shifting Paradigms: Faculty’s Navigation From the Class

toward online teaching. It was the assumption of this study that basic attitude toward online education was negatively shaped in part by competition reinforced through the rapid growth of for-profit institutions and the mandate of technology. As these institutions were 100% online and were rapidly called "diploma mills" and the only criterion to gain entrance was the ability to qualify for funding. Newman and Couterier (2001) spoke to the trend toward competition of virtual or online courses from virtual institutions, enrolling well over a million students. While these institutions were market driven, they addressed the needs of students on their own terms, and satisfied a growing interest in convenience and student-centered choices. The change emerged in higher education in the last half-century; information technology companies were managing certificate programs, and corporate universities, which now number more than 2000, has fundamentally changed the climate of competition (Newman & Couterier, 2001). When reviewing quality education, Georgina and Olson (2008) stipulated there continues to be a disconnect between faculty who are willing to learn more by utilizing new technology, and faculty who would rather disregard online teaching to remain in the traditional classroom.

The emergence of for-profit online education and traditional institutions inclusion of online degree programs and hybrid courses indicated technology has changed the landscape of education. According to Newman and Couturier (2001) technology has accelerated another powerful trend of change, the emerging globalization of higher education (p. 3). During the course of this technological influx, there have been many pockets of resistance with faculty questioning the quality of online teaching and the refusal to use technology in their teaching modalities. Critics of online education have questioned the value, effectiveness, and quality of online education. Ulmer, Watson, and Derby (2007) examined perceptions of faculty pertaining
to the value of online education and reported statistically significant differences in findings between faculty with and without online education experience. Their results suggested that experienced faculty view online education as effective in terms of student performance and instructor-to-student interaction, and they “promote and recommend engagement in online education” (p. 69).

Bolliger and Wasilik (2009) posited that faculty satisfaction is considered an important factor of quality in online education. Their online faculty satisfaction survey (OFSS) was developed and administered to all instructors who had taught an online course in fall 2007 or spring 2008 at a small research university. When faculty is confident in their technological abilities they are more apt to utilize technology with their courses. Davis (1989) developed The Technology Acceptance Model (TAM), which encompasses two variables, “perceived ease of use and perceived usefulness” in a complex relationship between system characteristics (external variables) and potential system usage. It remains the dominate model in investigating factors affecting users’ acceptance of technology.
Chapter 3

METHODOLOGY

The quantitative action research study was based on faculty technology experience, perceptions, and attitudes with regard to technology that encompassed usage and quality of online education, and the relational institutional challenges from leadership. The overall objective of this study was to understand the correlation of faculty perceptions and attitudes as it relates to online teaching. This research study was centered on the faculty participants at Governors State University (GSU) and the institution’s shift to online teaching offerings such as online degree programs and online courses. Faculty is challenged with restricting their role in higher education due to technology-enhanced courses, and the mandate for the institution of higher education to compete. The criterion was based on faculty who were currently teaching online, blended courses, utilizing the Blackboard platform in the classroom, and other technology-infused courses. The snowball sampling provided additional feedback from faculty who teach at other institutions who have the similar characteristics of the GSU faculty and face similar challenges. This population is represented by many faculties in higher education who have had to shift paradigms as their institutions transitioned into offering online teaching. Faculty members across the country have been challenged with keeping pace with the ever growing expectations of creating quality education utilizing technology.

Subjects for the study were selected from faculty currently teaching at Governors State University who were teaching online courses, blended, or using the Blackboard platform in their classroom. Through snowball sampling (Thompson, 2002), faculty members were asked to
identify other faculty in their sphere of influence for the purpose of constructing a valued sample. Faculty included full and assistant professors, instructors, lecturers, and adjunct professors queried randomly, others would include administrators who may also be teaching courses. The survey was developed and administered to all faculty members who taught at the university and any of their colleagues who were interested in participating in the survey; the only qualifier was that the respondents must be teaching online courses, blended courses, or utilizing the Blackboard platform. Based on the subject matter, it was necessary to create specific survey questions to reach the core of information needed to draw conclusions and understanding of faculty paradigms. As a result, additional questions were added to The Teacher Technology Integration Survey (TTIS) questionnaires (Vannatta & Banister, 2009). The standardized form could not be manipulated nor altered, and answers were not ambiguous.

Figure 1 – Faculty Categories and Response Percentage

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full/Asst Professor</td>
<td>41.67%</td>
</tr>
<tr>
<td>Instructor</td>
<td>5.83%</td>
</tr>
<tr>
<td>Lecturer</td>
<td>19.17%</td>
</tr>
<tr>
<td>Adjunct</td>
<td>30.83%</td>
</tr>
<tr>
<td>Other</td>
<td>2.50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

GSU offers online and hybrid courses in almost every program area and field of study. These options provided the flexibility to individuals of meeting the demands of life, family, and career. GSU offers 5 online degree programs, more than 200 online, and more than 62 hybrid courses (GSU, 2017)
There were 121 respondents who participated in the research study (*n* = 121). The breakdown by gender represents 77 females and 41 males and 3 declined to answer. Female respondents represented 65.3% with males representing 34.7% for a total of 118 respondents who answered the question. The data was then analyzed and cross tabulated to determine the gender demographic breakdown by level of experiences Level 1 female (20) and male (15); Level 2 female (34) and male (8); Level 3 female (23) and male (18). Three declined to answer the gender questions (1 from level 2 and 2 from level 3).

Table 1.

*Experience * Gender Crosstabulation

<table>
<thead>
<tr>
<th>Experience</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrant</td>
<td>20</td>
<td>15</td>
<td>35</td>
</tr>
<tr>
<td>Digital Moderate</td>
<td>34</td>
<td>8</td>
<td>42</td>
</tr>
<tr>
<td>Digital Native</td>
<td>23</td>
<td>18</td>
<td>41</td>
</tr>
</tbody>
</table>

The age of respondents was cross-tabulated with regard to the level of experience (*n* = 119). In the age group of the 30-40 there was a total of (23) representing the following levels: Level 1 (3), Level 2 (7), Level 3 (13); the age group of 41-50 there was a total of (29) representing the following levels: Level 1 (9), Level 2 (16), Level 3 (4). Total respondents for Level 1 (35), Level 2 (43), and Level 3 (41), two respondents did not answer this question. The
results indicated that the largest percentage of faculty were in the age group of 51 or older, which represented 56% of faculty surveyed.

Table 2.

*Experience * Age Crosstabulation

<table>
<thead>
<tr>
<th>Count</th>
<th>Age</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30-40</td>
<td>41-50</td>
<td>51 or more</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Immigrants</td>
<td>3</td>
<td>9</td>
<td>23</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Digital Moderate</td>
<td>7</td>
<td>16</td>
<td>20</td>
<td>43</td>
<td></td>
</tr>
<tr>
<td>Digital Native</td>
<td>13</td>
<td>4</td>
<td>24</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>29</td>
<td>67</td>
<td>119</td>
<td></td>
</tr>
</tbody>
</table>

The research data was further analyzed by the years of experience teaching and then cross-tabulated based on the level of experience. Faculty with less than 5 years of experiences: Level 1 (5), Level 2 (7), and Level 3 (6); Faculty with 5-10 years teaching experience: Level 1 (6), Level 2 (15), Level 3 (10); Faculty with 11-15 years teaching experience: Level 1 (7), Level 2 (4), Level 3 (8); Faculty with 16 and over years of teaching experience: Level 1 (17), Level 2 (16), Level 3 (18). Two respondents did not answer this question.

Table 3.

*Experience * Years Teaching Crosstabulation

<table>
<thead>
<tr>
<th>Count</th>
<th>Years Teaching</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Less than 5</td>
<td>5-10</td>
<td>11-15</td>
<td>16 and over</td>
<td>Total</td>
</tr>
</tbody>
</table>
The research data was then analyzed to determine years teaching online courses including technology-enhanced courses by the years of experience teaching and then cross-tabulated based on the level of experience. Faculty with less than 2 years online teaching experience, total respondents (36), Level 1 (11), Level 2 (16), Level 3 (9); Faculty with 2 – 4 years online teaching experience, total respondents (19), Level 1 (6), Level 2 (6), Level 3 (7); Faculty with 5 – 10 years of experience, total respondents (47), Level 1 (11), Level 2 (17), Level 3 (47); Faculty with 11 or more years of online teaching experience, total respondents (14), Level 1 (5), Level 2 (3), Level 3 (6). Five respondents did not answer this question.

Table 4.

Experience * Years Teaching Online Courses (Include technology enhanced courses)
Crosstabulation

<table>
<thead>
<tr>
<th></th>
<th>Less than 2</th>
<th>2-4</th>
<th>5-10</th>
<th>11 or more</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrant</td>
<td>11</td>
<td>6</td>
<td>11</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Digital Moderate</td>
<td>16</td>
<td>6</td>
<td>17</td>
<td>3</td>
<td>42</td>
</tr>
<tr>
<td>Digital Native</td>
<td>9</td>
<td>7</td>
<td>19</td>
<td>6</td>
<td>41</td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>19</td>
<td>47</td>
<td>14</td>
<td>116</td>
</tr>
</tbody>
</table>

This action research quantitative study was an exploratory study based on faculty and their use of technology, perception of preparedness to teach online, the relational institutional challenges to infuse technology within the higher education curriculum, and the impact training
Shifting Paradigms: Faculty’s Navigation From the Class

and support institutions provide to faculty as higher education becomes increasingly dependent on technology-driven online teaching.

The quantitative data was focused on the central research questions:

1. Is there a relationship that exists between technology experience and faculty’s attitude to deliver online teaching?

2. Is there a relationship between faculty’s perceived quality of online teaching and their personal technology experience?

3. Is there a relationship between technology experience and institutional support and resources in technology to deliver online teaching?

4. Is there a relationship between technology experience and technology self-efficacy?

Governors State University has approximately 449 faculty members, for this study, the total respondents from faculty were (n = 121). The primary participants for this research was based on the GSU faculty that consisted of full and assistant professors (42%), instructors (6%), lecturers (19%), and adjunct faculty (31%), and other (2%). The criterion was based on faculty who were currently teaching online, blended courses, utilizing the Blackboard platform in the classroom, and other technology-infused courses. The snowball sampling provided additional feedback from faculty who are from traditional institutions that are competitively offering online courses, like Governors State University. Respondents from Governors State University represented 91% of the survey respondents, 9% represented other institutions.

Institutions Represented in Other:

University of Maryland University College, Joliet Junior College, Benedictine University, Prairie State College, Lewis University, Notre Dame University, University of
Illinois, Austin Peay State University, Indiana Wesleyan, Wabash College, Chicago State University, Cardinal Stritch University, Concordia University, University of Delaware.

Sampling Strategy

The sample was reflective of the current faculty population; including faculty members who have taught in face-to-face classrooms settings prior to teaching online courses. Subjects for the study were selected through convenience sampling from faculty currently teaching at Governors State University and the utilization of snowball sampling (Thompson, 2002), which allowed faculty members to identify other faculties in their sphere of influence for the purpose of constructing a valued sample. The survey instrument contained 56 questions, within four specific categories: demographics; technology experience; attitude toward online teaching; and availability of resources to support technology needs. The survey was available to all faculty members who taught at the university and any of their colleagues who were interested in participating in the survey. The questionnaire demographics contained qualifying questions to identify the technology skill level of faculty’s teaching experience and technology usage. These characteristics were used in stratifying the sample population during the analyses phase.

The study looked at faculty members who are digital immigrants who have previously taught in traditional classrooms and are now teaching in technology enhanced or online environments. The study cross analyzed the integration of digital immigrants with digital moderates and digital natives that are experienced and comfortable with the technology. Governors State University was the location to extract the sampling and any faculty derived from utilizing snowball sampling. There are approximately 449 faculty members at Governors State
who were eligible to complete the survey and an unknown number of faculty colleagues that may have randomly completed the survey through snowball sampling. Sample size target was estimated at a minimum of 100 to provide a sample large enough to concretely measure the data. The survey was available for a period of three weeks with an initial invitation to the survey participants and one reminder before reaching the acceptable 121 respondent survey sample.

Survey Instrument

The Teacher Technology Integration Survey (TTIS) questionnaires was designed to assess teachers’ technology integration practices (Vannatta & Banister, 2009). It did so by tapping into constructs of teachers' attitudes, behaviors, and comfort with technology; their perceived benefits of utilizing technology for pedagogy; their beliefs and behavior about classroom technology use; their technology support and access; their technology use for instruction, instructional support, and communication. The survey measured six constructs of teacher technology integration:

1. Risk-taking behaviors and comfort with technology;
2. Perceived benefits of using technology in the classroom;
3. Beliefs and behaviors about classroom technology use;
4. Teacher technology use;
5. Facilitation of student technology use; and
6. Teacher support for technology use and access to technology.

The survey has an overall reliability score of .84 (Vannatta & Banister, 2009).
A factor analysis was performed on the original TTIS instrument by Vannatta and Banister (2009), using principal components analyses to evaluate the underlying structure of TTIS. The preliminary factor analysis of all items, limiting extraction to six factors, confirmed the general structure of the proposed subscales with the addition of two factors. Items among similar subscales overlapped, three subsequent factor analyses were conducted to generate cleaner factors. Once factor analyses were completed, internal reliability was evaluated by calculating Cronbach’s Alpha for each factor. Risk-taking Behaviors and Comfort with Technology ($\alpha = .85$), Perceived Benefits I using Technology in the Classroom ($\alpha = .85$), Beliefs and Behaviors about Classroom Technology Use ($\alpha = .88$), Technology Support and Access ($\alpha = .74$). The current research utilized the TTIS instrument with aforementioned subsections with modifications to each section adding relevant items to each section. The additional questions were generated by the current researcher on the basis of experience and informal feedback from colleagues about barriers to their use of technology and other issues related to the use of technology specific to Governors State University.

Technology Experience

The researcher adapted the TTIS survey for this study using the Risk-taking behaviors and Comfort with Technology ($\alpha = .85$) questions, which correlates to Section I -- Technology Experience adding six questions to the category and received a Cronbach’s Reliability score of .86.

Table 5.

Section I – Technology Experience (questions added to TTIS survey instrument)

Questions 1, 2, 3, 12, 13, and 14
Q1. I consider myself a digital immigrant (Beginner) technology user can perform basic tasks: send emails, create word documents, search the web, etc.). Generally, needs assistance with technology.

Q2. Digital Moderate ((intermediate) ability to format documents using various styles and templates spreadsheets, charts, and basic graphic concepts.

Q3--I am a digital native (an experienced computer person) uses technology consistently; able to utilize and install software programs, ability to troubleshoot technology issues, consistently uses various technology mediums and platforms with ease.

Q12—The time it takes for me to learn how to use technology is better spend on other aspects of my work.

Q13—I am intimidated by technology.

Q14—Technical problems do not discourage me from teaching online.

The analysis began with classification of faculty level of technology experience. Technology experience in this study will be defined as the ability of the respondent’s technology usage as it relates to computer-mediate skills. Measurement of the variable technology experience was correlated and defined by the following scale: digital immigrant, digital moderate and digital native. The levels and corresponding attributes are listed below. Comparative analysis of the research variables was analyzed for each technology literacy level.

Level 1 -- Digital immigrant (beginner) ability to use a mouse and keyboard, create a simple document, send and receive email, generally needs assistance with other technical issues.

Level 2 -- Digital moderate (intermediate) ability to format documents using various styles and templates spreadsheets, charts, and basic graphic web creations.

Level 3 -- Digital native (experienced user), intrigued by technology, uses technology
consistently, able to utilize and install software programs, the ability to troubleshoot technology issues, consistently uses various technology mediums and platforms with ease.

The corresponding levels of experiences were quantified with questions one through three.

Q1: I consider myself a digital immigrant (Beginner) technology user can perform basic task: send emails, create word documents, search the web, etc.). Generally, needs assistance with technology

Figure 2 – Digital Immigrants

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>(no label)</td>
<td>31.67%</td>
<td>36.67%</td>
<td>2.50%</td>
<td>19.17%</td>
<td>10.00%</td>
<td>120</td>
<td>2.39</td>
</tr>
</tbody>
</table>

Q2: Digital Moderate (intermediate) ability to format documents using various styles and templates spreadsheets, charts, and basic graphic concepts.

Figure 3 – Digital Moderates

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>(no label)</td>
<td>16.81%</td>
<td>33.61%</td>
<td>13.45%</td>
<td>24.37%</td>
<td>11.76%</td>
<td>119</td>
<td>2.81</td>
</tr>
</tbody>
</table>

Q3: I am a digital native (an experienced computer person) uses technology consistently, able to utilize and install software programs, ability to troubleshoot technology issues, consistently uses various technology mediums and platforms with ease.

Figure 4 – Digital Natives

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Total</th>
<th>Weighted Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>(no label)</td>
<td>21.01%</td>
<td>32.77%</td>
<td>10.08%</td>
<td>10.92%</td>
<td>25.21%</td>
<td>119</td>
<td>2.87</td>
</tr>
</tbody>
</table>
Attitudes Toward Online Teaching

The researcher blended Perceived Benefits of Technology ($\alpha = .85$ and Beliefs and Behaviors about Classroom Technology Use ($\alpha = .88$) from the TTIS survey instrument to create Section II -- Attitude Toward Online Teaching, this section contained a total of 20 questions and the researcher added ten questions to the section. The researcher’s Section II – Attitude Toward Online Teaching received a Cronbach's Reliability score of .94

The following represents the questions that were added to Section II – Attitude Toward Online Teaching instrument.

Table 6.

Section II – Attitude Toward Online Teaching (questions added to TTIS survey instrument)

<table>
<thead>
<tr>
<th>Questions 26, 28, 9, 30, 31, 35, 36, 38, and 39</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitude Toward Online Teaching Questions added by Researcher</strong></td>
</tr>
<tr>
<td>Q26. Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.</td>
</tr>
<tr>
<td>Q28. The flexibility provided by the online environment is important to me.</td>
</tr>
<tr>
<td>Q29. I do not feel that online teaching delivers a quality education.</td>
</tr>
<tr>
<td>Q30. I think teaching should remain in the classroom with face-to-face learning.</td>
</tr>
<tr>
<td>Q31. Do you feel that online teaching is the way of the future?</td>
</tr>
<tr>
<td>Q35. Do online courses offer the same quality of education as in-person classes?</td>
</tr>
<tr>
<td>Q36. Would having a technology rich classroom/learning environment change the way you teach?</td>
</tr>
<tr>
<td>Q38. I have no desire to teach online.</td>
</tr>
</tbody>
</table>
Q39. Do you feel that technology is distracting to teaching modalities?

– The researcher adapted for this study using Technology Support and Access (α = .74) from the TTIS survey to create Section III -- Availability of Technology Support and Resources adding five questions to the category. The reliability of the survey after questions was added and received a Cronbach’s Alpha Reliability score of .88.

Table 7.

Section III – Availability of Technology Support and Resources for Online Teaching (questions added to TTIS survey instrument)

Questions 44, 45, 47, 48, and 49

<table>
<thead>
<tr>
<th>Support and Resources Questions added by Researcher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q44. Are you satisfied with the technology professional development you receive?</td>
</tr>
<tr>
<td>Q45. I am able to obtain technical help quickly when needed?</td>
</tr>
<tr>
<td>Q47. Are faculty trained to teach online prior to implementation?</td>
</tr>
<tr>
<td>Q48. I have convenient access to technology resources to support my online teaching?</td>
</tr>
<tr>
<td>Q49. Faculty received continuous training to teach online?</td>
</tr>
</tbody>
</table>

Table 8.

Perceived Quality of Online Teaching (questions added to TTIS survey instrument). The researcher received a Cronbach’s Alpha Reliability score of .78.

Questions 29, 30, 31, 35, 39
Perceived Quality Online Education Questions

Q29. I do not feel that online teaching delivers quality education.

Q30. I think teaching should remain in the classroom with face-to-face learning.

Q31. Do you feel that online teaching is the way of the future.

Q35. Do online courses offer the same quality of education as in-person classes

Q39. Do you feel that technology is distracting to teaching modalities?

Exploratory Research

Table 9.

Technology Self-Efficacy (TTIS survey instrument questions used). The researcher received a Cronbach’s Alpha Reliability score of .91.

Questions 7, 8, 9, 10, 11, and 14

Technology Self Efficacy Questions

Q7 – I feel comfortable about my ability to work with technology.

Q8 – I enjoy finding new ways that I can use technology in the classroom.

Q9 – I get excited when I am able to show my students a new technology application tool.

Q10 – I am confident in my ability to troubleshoot when problem arise while using technology.

Q11 – Learning new technologies that I can use in the classroom is important to me.

Q14 – Technical problems do not discourage me from teaching online.
Technology Self-Efficacy section received a Cronbach’s Alpha Reliability score of .91. Some variables were strongly correlated and significant, suggesting that multi-collinearity existed or that the variables essentially measure the same thing. As result 19, 20, 22, 27, 33, 34 and 37 were omitted from the analysis.

Data Analysis

The study utilized correlational methods, reliability, frequencies, analysis of variance, Pearson correlation of means differences, T-Tests, and Oneway ANOVA. Reliability was analyzed to determine the reliability of the overall research instrument, and the grouping and compatibility of questions within the context of categories: attitude, support, experience, and technical self-efficacy.

ANOVA allowed the researcher to determine if the three levels of groups (digital immigrants, digital moderates, and digital natives) differ in characteristics with regard to support, quality of education, attitude, and technical self-efficacy. The T-Test analysis was used to compare levels of experience; based on digital immigrants, digital moderates, and digital natives. Split files were used to compare groups based on their experience. Analysis of Variance was used to compare means grouping based on attitude, technical self-efficacy, quality of online education, and support and resources (training). In using correlation analysis, the correlations and means difference was employed to determine a means difference between groups (digital immigrants, digital moderates and digital natives). Bivariate was also used to correlate attitude, quality of education, and support. Lastly, ANOVA and T-Test were used for individual questions for variables that did not fit with specific grouping categories. There was a small percentage of missing data less than one percent. The researcher utilizing the 5-point Likert scale, adjusted for the mid-point of the scale.
Pearson Correlation analysis was employed to examine the relationships between faculty perceptions, technology literacy, and training as it relates to online teaching. Measurements of the variables were realized through the items in the survey instrument that were relevant to each of the research questions: 1. Technology experience and attitude on online teaching was measured by Section I Technology Experience questions; 2. Faculty attitudes and perceptions for quality online teaching was measured by Section II - Attitudes Toward Online Teaching questions; 3. Institutional support and resources to teach online will be measured by Section III - Technology Resources and Support questions; and 4. Technology Self-Efficacy was measured by Section I Technology Experience and Section II Attitudes Toward Online Teaching. Questions may be reviewed in Appendix A.

Hypothesis Statement

The hypothesis of this study asserts the following:

A. There is a positive relationship that exists between technology experience and faculty’s attitude to deliver online teaching.

B. Faculty’s perceptions of online teaching and their personal technology experience are positively related to perceived quality of online teaching.

C. There is a perceived relationship between technology experience and institutional support and resources in technology to deliver online teaching.

The research analyzed the variance of the three technology experience groups in relation to the variables of technology experience and attitudes, perceived quality of online education, institutional technology support and resources, and technology self-efficacy. The study also measured the impact that technology experience has on the faculties’ attitudes toward teaching online through the survey instrument.
Theoretical Framework

There are two theories that informed this study. The first is constructive theory, which provided the inclusion of a variety of learning perspectives related to faculty being receptive to other perspectives and the exploration of active learning. Underhill (2006) stipulated that pedagogy of constructivism and particularly socio-constructivism is the basis of online learning and teaching currently being developed. The second theory is transformational learning, which is the capacity for critical thinking and evaluation of basic assumptions. Mezirow (2000) pointed out that reflective discourse and vigorous dialogue “allows for intense intellectual relationships, where faculty can be attuned precisely to students’ thinking and development” (p.96). As we look at pedagogy transformation it is necessary for faculty to adhere to the paradigm shift in delivering online teaching, the focus is on developing technical skills to meet this demand.

Based on the scientific method, the research began with a theory and collected data that supported or refuted the theory. The research was to develop relevant, true statements, which explained the theory and described the causal relationships. The quantitative study advanced the relationship among variables, using this methodology allowed the generalization from the sample population to allow inferences about characteristics attitudes and behavior.

Research Design

The quantitative research design consisted of an exploratory study that utilized emerging questions and procedures, data typically collected in the participant setting, data analysis, and building from specific to general themes that allowed interpretation of the data (Creswell, 2014).
The method included a correlational design that described and measured the relationship between variables, and the incorporation of causal paths.

Quantitative data was collected from faculty via survey; queried on technology experience, attitudes related to online teaching, institutional technology support and resources, perceived quality of online education, training mandates and/or absence thereof, tangible support while teaching class, special requirements mandated by the university for teaching technological/online courses, and the comfort level of using technology. The quantitative method was selected due to the nature of the subject matter and needing a large sampling to validate the results from a cross section of faculty members in order for the data to be of value. Utilizing this methodology allowed the actualization of a better sampling without being intrusive to the respondents and the ability to maintain anonymity. It concisely extracts information without bias to expedite the data collection from a large sampling of faculty members, based on their beliefs and attitudes. The assumption that faculty would be more receptive to complete a survey that is not intrusive, whereby making it more conducive to engage the sample population.

The instrument was created in an electronic platform using SurveyMonkey and respondents were provided a link to access the survey. The instrument utilized a five-point Likert scale for measurement indicating the level of respondents' "Strongly Disagree, Disagree, Nether Disagree or Agree, Agree, and Strongly Agree are response options.

The institutional standards of online teaching and training programs were reviewed from public institution documents and the research did not require specific intervention or questions. The data was used as a reference correlated to the faculty outcomes. The instrumentation used
for this group was observation and secondary data i.e., documents, physical data and archived data that is public information (Johnson & Christensen, 2007). The findings for this group would have a bearing on the treatment group's variables which would help correlate the outcomes. The study reviewed institutions of higher education through observation of viable technological training programs and/or required training courses for faculties such as; online certification programs offered and/or required, online learning teams; faculty institutes, or structured orientation that includes technology skill building, and other online training courses offered to faculty teaching online courses. A review of the mandates from higher education administrators as it relates to optional or required faculty participation in training prior to teaching technology enhanced and/or online courses. The study also correlated training offerings for faculty participation and/or involvement in technology training initiatives, and the support systems in place while faculty is actively teaching courses. This data was aggregated based on the infrastructure within the institution to support the primary findings of the study.
Chapter 4

FINDINGS

Introduction

This chapter provides a review of the study results based on the research questions. Information regarding faculty’s technology experience, perceived normative behavior and attitudes based on technology, and online teaching was collected from 121 faculty teaching at Governors State University and other institutions of higher education.

Purpose

The purpose of the study examined faculty perceptions and attitudes as they are shifting paradigms from the traditional classrooms and are now teaching in computer-enhanced or online environments.

Research Questions

The following research questions guided this study:

1. Is there a relationship that exists between technology experience and faculty’s attitude to deliver online teaching?
2. Is there a relationship between faculty’s perceived quality of online teaching and their personal technology experience?
3. Is there a relationship between technology experience and institutional support and resources in technology to deliver online teaching?
4. Is there a relationship between technology experience and technology self-efficacy?
The findings in this study provided correlations and a comparative analysis based on the specification of three levels of technology experiences. (Table 9). The research was based on addressing faculty technology experience, attitudes toward online teaching, perceived quality of online teaching, institutional support and resources, and technology self-efficacy. The study required first defining faculty level of technology experience in order to understand how technology experience correlated to the research questions. The data was statistically analyzed to identify level of technology experience and then divided into three groups: Level one represents Group 00 – digital immigrants (n = 35); Level two represents Group 1 – digital moderates (n = 43), and Level three represents Group 2 – digital natives (n = 43).

Levels of Experience

Level 1 -- Digital immigrant (beginner) ability to use a mouse and keyboard, create a simple document, send and receive email, generally needs assistance with other technical issues.

Level 2 -- Digital moderate (intermediate) ability to format documents using various styles and templates spreadsheets, charts, and basic graphic web creations.

Level 3 -- Digital native (experienced user), intrigued by technology, uses technology consistently, able to utilize and install software programs, the ability to troubleshoot technology issues, consistently uses various technology mediums and platforms with ease.

Frequencies

Table 10 – Level of Experience

Q1: I consider myself a digital immigrant (Beginner) technology user can perform basic tasks: send emails, create word documents, search the web, etc.). Generally, needs assistance with technology
Q2: Digital Moderate ((intermediate) ability to format documents using various styles and templates spreadsheets, charts, and basic graphic concepts.

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>23</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
<td>35</td>
</tr>
</tbody>
</table>

\( N = 121 \)

Q3: I am a digital native (an experienced computer person) uses technology consistently, able to utilize and install software programs, ability to troubleshoot technology issues, consistently uses various technology mediums and platforms with ease.

<table>
<thead>
<tr>
<th>FREQUENCY</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>13</td>
</tr>
<tr>
<td>Strongly Agree</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>43</td>
</tr>
</tbody>
</table>

\( N = 121 \)

Research Questions
Hypothesis A – There is a positive relationship that exits between technology experience and faculty’s attitude to deliver online teaching.

The null hypothesis stipulates that a positive relationship that does not exists between technology and experience and faculty attitude to deliver online teaching. The research demonstrates that there is a positive relationship that exists between technology experience and faculty’s attitude to deliver online teaching, so therefore the null hypothesis is rejected. The statistical analyses utilized frequencies, t-test analysis, Oneway ANOVA, Pearson’s Correlation, and Cronbach’s Alpha Reliability scores. The research examined differences in the means between Group 00 – digital immigrants, Group 1 – digital moderates, and Group 2 – digital natives. Oneway ANOVA analysis of variance comparing the experience at three different levels.

Table 11.

ANOVA and T-Tests

<table>
<thead>
<tr>
<th>Experience</th>
<th>P value</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrant &lt; Digital Moderate -- t(76) = -4.12, p &lt; .05, x (low) = 2.84 x (mod) = 3.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Immigrant &lt; Digital Native -- t(76) = 5.27, p &lt; .05, x (low) = 2.84 x (high) = 3.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Moderate = Digital Native -- t(76) = 1.40, p &gt; .05, x (mod) = 3.58 x (high) = 3.79</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The t-test demonstrated that there is a significant difference in attitude between low and moderate. The relationship of technology experience in Group 00, digital immigrants affects their attitude toward the confidence in technology usage as it relates to online teaching. Group 1, digital moderates have a higher level of technology experiences and as a result are apt to be fairly confident in their attitude toward their ability to utilize technology for online teaching. The follow-up t-test found that attitude for moderate to high was statistically equal. Based on the similarity in scoring both digital moderates and digital natives have an adequate level of technology experience that creates a certain level of confidence, which parleys into a similar attitude as it relates to online teaching.

Attitudes were measured based on online usage, gratification of teaching online, overall feeling of technology online, planning online instruction, quality of online teaching compared to face-to-face teaching. Digital natives (M = 3.79, SD = 0.68) demonstrated that they were technology savvy and are receptive to online teaching. Digital moderates (M = 3.58, SD = 0.68) also had a healthy understanding of technology and were receptive to teaching online. The digital immigrants (M = 2.84, SD = 0.91) showed a reluctance to teach online and overall questioned the validity of online teaching. Group 00 level of technology experience did not demonstrate the level of confidence in technology as Group 1 and 2. On average, the data demonstrated that faculty who were experienced with technology was receptive to online teaching. (See Table 11 and 12) There were sixteen questions used to determine the attitude toward technology and with a Cronbach’s Alpha reliability score of .94. Questions 29, 30, 38, and 39 were reversed based on the five point Likert Scale. Scale statistics demonstrate the mean (55.01), Variance 183.02, Standard Deviation 13.52 for the sixteen items.
Hypothesis B – Faculty’s perceptions of online teaching and their personal technology experience are positively related to perceived quality of online teaching.
The null hypothesis stipulates that faculty’s perceptions of online teaching and their personal technology experience are not related to perceived quality of online teaching. Faculty’s perceptions of online teaching and their personal technology experience were positively related to perceived quality of online teaching. The statistical analyses utilized frequencies, t-test analysis, ANOVA, Pearson’s Correlation, and Cronbach’s Alpha Reliability scores. The research examined differences in the means between Group 00 – digital immigrants, Group 1 – digital moderates, and Group 2 – digital natives. Utilizing t-test analysis, the research examined differences in the means between Group 00 – digital immigrants, Group 1 – digital moderates, and Group 2 – digital natives. Quality online education was measured based on quality of online teaching compared to classroom, distraction of technology to teaching modalities, teaching should remain face-to-face, online teaching is not quality education.

Table 13.

ANOVA and T-Tests

<table>
<thead>
<tr>
<th>Experience</th>
<th>P value</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrant = Digital Moderate</td>
<td>$t(76) = -1.57$, $p &gt; .05$</td>
<td>$x = 2.87$ (low) $x = 3.20$ (mod)</td>
</tr>
<tr>
<td>Digital Immigrant &lt; Digital Native</td>
<td>$t(76) = -3.33$, $p &lt; .05$</td>
<td>$x = 2.87$ (low) $x = 3.55$ (high)</td>
</tr>
<tr>
<td>Digital Moderate = Digital Native</td>
<td>$t(84) = -1.92$, $p &gt; .05$</td>
<td>$x = 3.20$ (mod) $x = 3.55$ (high)</td>
</tr>
</tbody>
</table>
The correlation of the t-test shows between digital immigrants and digital moderates, digital moderates and digital natives there is no significant difference in the perceived quality of online teaching and they are considered equal in value. (Table 13 and 14) However, there is a significant difference in the perceived quality of online teaching between digital immigrants and digital natives. The level of technology experience between digital immigrants and digital natives are significantly different, digital moderates are much more advanced in the technology experience and view technology as a useful tool to integrate processes, while digital immigrants at best are able to manage basic technology skills, which are probably very cumbersome and time consuming. There is a direct correlation to technology experience and perceived quality on online education; based on the data, digital immigrants are more comfortable in the bricks and mortar classroom where face-to-face teaching is considered quality education to infuse student-teacher interaction.

Conversely, the technology experience of digital natives allows the confidence in creating a well-rounded experience utilizing technology and understanding how technology would be integrated to create quality online teaching. Digital natives see technology as an enhancement to teaching; they possess the ability to utilize technology to add value and nuances to accentuate their online teaching. This group completely embraces technology and views new technology as a challenge. There is no significant difference between digital moderates and digital natives, digital moderates also possess an adequate technology experience to utilize technology in online teaching and understands that technology is relevant to online teaching. Conversely, digital immigrants and digital moderates also demonstrated no significant difference. That is an indication that while digital moderates have technology experience there is no resounding
endorsement of quality education from digital moderates. Both groups feel that teaching should remain in the classroom face-to-face, and online teaching does not offer the same quality of education. Digital immigrants overwhelmingly did not support the concept that online teaching offered a quality education. While this group has technology experience there are some who still need reinforcement of technology tools. There were five questions used to determine perceived quality of online teaching with a Cronbach’s Alpha reliability score of .91. Questions 29rev, 30rev, 39rev were reverse based on the five point Likert Scale. The research supports the faculty’s perceptions of online teaching and their personal technology experience are positively related to perceived quality of online teaching, therefore the null hypothesis is rejected.

Table 14. Quality Online Education T-Test Comparison of Means

<table>
<thead>
<tr>
<th>Experience</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrant</td>
<td>35</td>
<td>2.87</td>
<td>1.03</td>
</tr>
<tr>
<td>Digital Moderate</td>
<td>43</td>
<td>3.21</td>
<td>0.87</td>
</tr>
<tr>
<td>Digital Native</td>
<td>43</td>
<td>3.55</td>
<td>0.75</td>
</tr>
</tbody>
</table>

\(N = 121\)

*Hypothesis C – There is a perceived relationship between technology experience and institutional support and resources in technology to deliver online teaching.*

The null hypothesis stipulates that there is no relationship between technology experience and institutional support and resources in technology to deliver online teaching. In the 21st Century faculty will need effectively structured and continuous institutional support and resources in technology to meet the demands of higher education in delivering online teaching. The statistical
analyses utilized frequencies, t-test analysis, and Oneway ANOVA, Pearson’s Correlation, and Cronbach’s Alpha Reliability scores. The research examined differences in the means between 0 – digital immigrants, 1 – digital moderates, and 2 – digital natives.

Utilizing t-test analysis, the research examined differences in the means between Group 0 – digital immigrants, Group 1 – digital moderates, and Group 2 – digital natives. Support and resources were measured based on available resources for support, professional development, ability to obtain technical support quickly, continuous training, assistance to integrate technological ideas, availability of sufficient training and support, and formal training prior to online implementation. Digital natives (M = 3.28, SD = 0.71), digital moderates (m = 3.28, SD = 0.88), and digital immigrants (M = 3.15, SD = 0.85) albeit, the levels of technology experience are vastly different from digital natives and digital immigrants. On average, the results for all three groups within the context of support and resources showed no significant difference. (See Table 15)

The research suggested that there was no relationship between technology experience and institutional support and resources in technology to deliver online teaching and therefore the null hypothesis is accepted. The data indicates that support and resources are not significant factors to determine preparedness for faculty to teach online. The data can be interpreted that training is not considered a factor for technology adoption or it can be determined as insignificant. The researcher makes the assumption that institutional support and resources may be categorically important but, the similarity between groups indicated that all three groups viewed this category the same. The implication exists that faculty did not determine that this was not an important factor, but it was not the factor that determined their ability to be prepared to embrace
technology. It may be interpreted that training may be a contributing factor for faculty to teach online, but it is not the driving factor for faculty to feel prepared.

Table 15. Support and Resources T-Test Comparison of Means

<table>
<thead>
<tr>
<th>Experience</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrant</td>
<td>35</td>
<td>3.15</td>
<td>0.85</td>
</tr>
<tr>
<td>Digital Moderate</td>
<td>43</td>
<td>3.28</td>
<td>0.88</td>
</tr>
<tr>
<td>Digital Native</td>
<td>43</td>
<td>3.28</td>
<td>0.71</td>
</tr>
</tbody>
</table>

$N = 121$

Exploratory Analyses

The premise of the research is based on the level of faculty technology experience, attitudes toward technology and online teaching, perceived quality of online teaching, and the impact of institutional support and training for technology support and resources. Conversely, there is an interesting finding that evolved from the data, which speaks to internal motivations that predict faculty’s ability to implement online teaching. While it is understood that technology experience was a factor in emerging attitudes about technology and online teaching, there is another factor that emerged through the research that indicates that self-efficacy is a predictor of faculty’s adoption of technology. Self-efficacy was added to the stratification and the statistical analyses utilized correlations, t-test analysis, Oneway ANOVA, Pearson’s Correlation, and Cronbach’s Alpha Reliability scores. The research examined differences in the means between Group 00 – digital immigrants, Group 1 – digital moderates, and Group 2 – digital natives.
Table 1.

**ANOVA and T-Tests**

<table>
<thead>
<tr>
<th>Experience</th>
<th>P value</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrants &lt; Digital Moderate -- t(76) = -5.28, p &lt; .05, x = 2.58 (low) x = 3.57 (mod)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Immigrant &lt; Digital Native -- t(76) = -9.53, p &lt; .05, x = 2.58 (low) x = 4.24 (high)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digital Moderate &lt; Digital Native -- t(84) = -4.24, p &lt; .05, x = 3.57 (mod) x = 4.24 (high)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Utilizing t-test analysis, the research examined differences in the means between Group 00 – digital immigrants, Group 1 – digital moderates, and Group 2 – digital natives. Digital natives (M = 4.24, SD = 0.66), digital moderates (M = 3.57, SD = 0.79), digital immigrants (M = 2.58, SD = 0.88). (See Table 16 and 17) Faculty's ability to deliver technology enhanced teaching modalities was measured by technology self-efficacy; technology level of comfort, new paradigms to use technology, excited to discover new technology tools, confident in troubleshooting issues with technology, and excited to use new technologies in courses. The results between digital natives, digital moderators, and digital immigrants demonstrated a significant difference in self-efficacy as it relates to technology. On average, the digital natives are self-assured and willing to take on technology platforms, which indicate the overall level of personal technology usage. The digital moderate also demonstrated the ability to embrace
technology in online teaching modalities, but the digital immigrants’ self-efficacy in technology was not conducive to demonstrating a confidence level to create innovative technology online teaching. Self-efficacy is driven by the faculty person’s individual paradigm as it related to technology experience.

<table>
<thead>
<tr>
<th>Experience</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Immigrant</td>
<td>35</td>
<td>2.58</td>
<td>0.88</td>
</tr>
<tr>
<td>Digital Moderate</td>
<td>43</td>
<td>3.57</td>
<td>0.79</td>
</tr>
<tr>
<td>Digital Native</td>
<td>43</td>
<td>4.24</td>
<td>0.66</td>
</tr>
</tbody>
</table>

Technology self-efficacy was queried through a t-test to determine the mean for each group in this category. Technology self-efficacy was measured based on comfort level of working with technology, ability to learn new technologies, confidence in troubleshooting technology, introduce new technology teaching modalities, Group 2, digital natives (M = 4.24, SD = 0.66) demonstrated that they were eager to introduce new technologies in their courses, had confidence in their ability to troubleshoot technology technical issues, and were confident in their ability to work with technology. Group 1, digital moderates (M = 3.57, SD = 0.79) shows that this group has technology experience and a willingness to work with some new technology they did not demonstrate that their technology experience allowed them the confidence to troubleshoot technical issues or forge ahead with new technology applications independently. Group 00, digital immigrants (M = 2.58, SD = 0.88) demonstrates that this group has no confidence in their technological experience, they would be reluctant to use technology in their
courses and do not generate the skill level to troubleshoot technology nor forge ahead with new technology on their own.

While many studies indicated that institutional support and structured training are an impetus to understand faculty’s ability to deliver quality online teaching and meeting online expectations this study found a differing approach as demonstrated in Sanderson’s Exploratory Research Theory Model (SERT) (Table 18).
The Sanderson Exploratory Research Theory Model (SERTM) (2017) posited that the research indicated the existing belief that support and resources impact quality and attitude. Conversely, it is the assumptions of this research that technology self-efficacy is a predictor of quality and attitude determined by the level of technology experience. The level of technology experience has a direct impact on the level of technology self-efficacy, and as a result shaped faculties’ attitudes and perceptions on the quality of online teaching. The correlation of the significance of technology self-efficacy and attitude; and the significance of quality education and attitude (Table 19) statistically supports the SERTM model. Ertmer and Ottenbreit-Leftwich (2010) stipulated there is “evidence that suggests that self-efficacy may be more important than skills and knowledge among teachers who implement technology in their classrooms” (p.261).

The research acknowledged that structured training and resources are a factor for faculty preparedness to teach online, research results indicate for this particular group that faculty across all three levels of experience neither agree or disagree that training was a major factor that determined their ability to teach online. Faculty was categorized within levels of experience: digital immigrants, digital moderates, and digital natives. Results indicated that the level of variance between each group within the subject matter of support and resources did not quantify support and resources as a significant factor to teach online. The results showed that the variance between these groups within mean scores: digital immigrant (3.15), digital moderates 3.28), and digital natives (3.25) were significantly similar without regard for the level of experience. The data showed that support and training were not a significant factor to determine online teaching adoption. It was determined that technology self-efficacy was the major factor to garner expectations for online teaching.
As demonstrated in the Pearson Table of Correlations (Table 19) with (.77) as an overall score; (.77) attitude has a high correlation to technology self-efficacy. As demonstrated in the table the impact of technology self-efficacy and attitude have a high correlation with digital immigrants (.73), digital moderates (.72) digital natives (.80). This is a clear indication that we must go further with structuring training and support; institutional programs must be developed to foster the needs of different levels of experience. What is required for the digital moderates and digital natives is not conducive for digital immigrants. The research shows that before faculty can begin to think about teaching online their self-efficacy will determine what resources are needed to sustain their ability to move to online teaching. The needs of the digital natives and moderates are tantamount to the integration of technology, but support and resources to create quality student-centered online teaching modalities are more of a concern. Their level of experience demonstrated that basic skills are not necessary to reinforce the technology, but higher level instructional design focused on creating a more integrated classroom, which is impactful of student learning.

Training systems must be designed to meet the needs of the faculty member; institutions must implement diversification in technology training offers. Bailey and Card (2009) specify that institutions have focused on providing faculty with technology training to enhance their online teaching while faculty would like to learn more effective pedagogical practices. Institutions must understand that in order for their faculty to be successful with online teaching modalities, there must be a concentrated investment to develop training that is not one dimensional.

Table 19 Pearson Table of Correlations
### OVERALL  \( (N = 121) \)

<table>
<thead>
<tr>
<th></th>
<th>Support</th>
<th>Tech SE</th>
<th>Attitude</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tech SE</td>
<td>.24**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>.26**</td>
<td>.77**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quality Ed</td>
<td>.23*</td>
<td>.49**</td>
<td>.82**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

### EXPERIENCE 00 – Digital Immigrant – \( (N = 35) \)

<table>
<thead>
<tr>
<th></th>
<th>Support</th>
<th>Tech SE</th>
<th>Attitude</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tech SE</td>
<td>.23</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>.06</td>
<td>.73**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quality Ed</td>
<td>-.07</td>
<td>.38*</td>
<td>.80**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

### EXPERIENCE 1 – Digital Moderate – \( (N = 43) \)

<table>
<thead>
<tr>
<th></th>
<th>Support</th>
<th>Tech SE</th>
<th>Attitude</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tech SE</td>
<td>.47**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>.36*</td>
<td>.72**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quality Ed</td>
<td>.34*</td>
<td>.46**</td>
<td>.87**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)

### EXPERIENCE 2 – Digital Native – \( (N = 43) \)

<table>
<thead>
<tr>
<th></th>
<th>Support</th>
<th>Tech SE</th>
<th>Attitude</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>-.04</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
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<td>.70**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Quality Ed</td>
<td>.44**</td>
<td>.42**</td>
<td>.80**</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed)
* Correlation is significant at the 0.05 level (2-tailed)
Interpreting the data based on difference in means where Group 00 = digital immigrants, Group 1 = digital moderates, and Group 2 = digital natives. Based on the analysis of mean differences (Table 20) we can conclude the following:

There is a significant difference in technology self-efficacy between the digital immigrant (2.58) and the digital moderate (3.57), and a larger gap between the digital native (4.24). The digital native has a confidence level in self and technology, which far out-weighed the digital immigrant as well as the digital moderator. There is a clear indication that the digital immigrant does not have the confidence level or the experience for the implementation of technology for online teaching platforms. This information suggested that the digital moderate and the digital native are confident in the technology, and demonstrate the experience and confidence to utilize technology in online teaching platforms. Previous studies have viewed institutional support and training as the catalyst that employed faculty to adopt online teaching modalities. It is the contention of the researcher that self-efficacy and personal technology experience are the predictors that drive faculty to adopt technology for online teaching. The training and support are the catalysts that sustain and improve the quality of online teaching.

When analyzing the mean for support there is a clear indication that all levels of experience: digital immigrant (3.15) digital moderates (3.28) and digital natives (3.28) view support through a similar lens. This posits that these three groups “neither agree nor disagree” on the significance of technology support and training. Conversely, it does not speak to the value of training, but to the significance of implementation as a driver to adopt the technology. Alternatively, the data substantiated the theory that individual technology experience and self-efficacy may be the predictor to the adoption of technology. Specifically, noted in the support
and resources category training may be viewed as necessary and available, but the basic technology skills are needed for implementation.

The correlation of attitude among the three groups indicated that digital immigrants (2.84) have a much lower attitude toward technology and online teaching modalities. The data identified that digital moderates (3.58) and digital native (3.80) are fairly similar in attitudes regarding online teaching and technology. This can be affirmed that digital moderates and digital natives are perceived to have a better understanding of the technology and will tend to gravitate toward teaching online, based on their confidence and experience in using technology. As specified in Table 20.

Based on the data, digital immigrants differ succinctly from digital moderates and digital natives as to their view of online teaching as a quality education. While the mean differences within the three groups are statistically different, there is a significant difference between digital immigrants and digital natives on perceived quality online teaching. The data also indicated that digital natives have the technological experience to adequately infuse technology within the online experience to create the necessary well-rounded interaction necessary to engage students.

Table 20  Table of Mean Differences

<table>
<thead>
<tr>
<th>Experience</th>
<th>0 Mean</th>
<th>1 Mean</th>
<th>2 Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tech SE</td>
<td>2.58</td>
<td>3.57</td>
<td>4.24</td>
</tr>
<tr>
<td>Support</td>
<td>3.15</td>
<td>3.28</td>
<td>3.28</td>
</tr>
<tr>
<td>Attitude</td>
<td>2.84</td>
<td>3.58</td>
<td>3.80</td>
</tr>
<tr>
<td>Quality Ed</td>
<td>2.87</td>
<td>3.21</td>
<td>3.55</td>
</tr>
</tbody>
</table>
Review of Institutional Technology Support and Resources

The researcher reviewed information from four institutions identified in the survey sample to provide insight into institutional offerings of structured technology support and resources for faculty who deliver online teaching and blended courses. The four institutions represent one for-profit institution, University of Phoenix; and three traditional institutions offering online courses: University of Northwestern Ohio, Concordia University; and Governors State University.

University of Phoenix provides a rigorous training program for their faculty to teach online. They provide a prepared online course already structurally designed so the faculty member is not challenged with instructional design. The faculty member is assigned a mentor that will train and evaluate for the entire semester/quarter. A master binder is provided, along with the mentor’s structured one-on-one training that provides tutorials, simulation training, and 24 hour resources. They have implemented best practices and require all faculty members to adhere to the same policies, no exceptions. Once the faculty member begins to teach a ‘live’ course, the mentor is available to answer all questions and continue to provide guidance. There is a check-in with the mentor each week and the mentor/trainer is able to monitor the class to ensure that policies are followed and a comprehensive understanding of the nuances of online teaching. The faculty person is responsible for adhering to the established best practices with course check-in, response time to students, and facilitating discussion. Once faculty has completed the semester/quarter the mentor/training makes a recommendation to disconnect or continue your employment. Employment is predicated on your knowledge of the subject matter along with the assumption that you have the basic skills of technology use. It is a rigorous
process and many traditional institutions find those faculties who have taught online at for-profit institutions demonstrate the technological experience to successfully deliver online teaching.

University of Northwestern Ohio – Faculty Training

The University of Northwestern Ohio (UNOH) provides all new online instructors with a tailored certification program designed to introduce the online course delivery model. The Center for Education Excellence Online Faculty Certification Course (OFC-101) incorporated information regarding the UNOH mission and student demographics; instructor expectations, policies, and procedures; best practices in teaching online; effectively using academic technologies; and effective online course design and preparation. The instructor certification program is delivered asynchronously, in an online format, using Distance Learning LMS. This certification course is required of all instructors interested in teaching online for UNOH. This program is free to all qualified interested candidates and represents the commitment to faculty development and training. Online faculty is selected from the faculty who successfully complete the training.

Concordia University Chicago (CUC)

Concordia University takes recommendations from the department chairs and program leader to identify faculty to teach either an online or hybrid course at Concordia University Chicago. CUC requires that all faculty teaching in online programs be certified by taking a four-week online course. The course will focus on the pedagogy of online instruction. Faculty are required to read relevant literature, participate in online discussions, build course elements in a Blackboard practice course (sandbox) and begin the process of planning their own online
learning module. The course takes about four hours per week to complete. The course is administered online; no face-to-face meetings are required nor a need to be on campus to complete the course. The course training is facilitated by the CUG’s Director of Instructional Design, a veteran of online teaching. The course is released one week at a time to encourage timely discussion and participation.

Governors State University (GSU)

Governors State University Center for Online Teaching and Learning (COTL) assists faculty in developing and delivering quality online classes and provides support and training in the Blackboard Learning Management System. COTL also offers an online teaching certification program, which is not a requirement to teach online courses. The Faculty Lab provides one-on-one training to faculty for Blackboard courses, and twenty-four-hour access to Blackboard tutorials and workshops. In classroom support is provided by the IT department as well as one-on-one training. GSU offers faculty professional development through the Faculty Summer Institute and the Fisk Mini Grant for faculty technology professional development.

Ethical Consideration

Prior to conducting the study, the proposal along with the survey was submitted to IRB. There were informal conversations with faculty sharing the information about the research. Through respect of the site, permission from the IRB was established to conduct the study with the faculty at Governors State University. The survey extracted general demographic information without correlation to the individual participating in the study. Participants were informed of the confidentiality and anonymity of the data collection to build trust regarding the
Shifting Paradigms: Faculty’s Navigation From the Class

research. Consistent consideration and respect for participants was ongoing throughout the study. Rosenthal’s (1994) work posited that ethics is closely linked with the quality of a research study, such that high-quality studies are more ethically defensible than low-quality studies.

Limitations

As the research moved forward identifiable limitations were the time frame to conduct the research and how it impacted the inability to receive a larger sample size. There was concern that faculty members would not complete the entire survey, and/or truthfully answer, based on IRB required that the clause be added to instruct respondents that they were not required to answer all the questions in the survey instrument. There was a small percentage of missing data less than one percent, and the researcher utilizing the 5 point Likert scale adjusted for the mid-point of the scale. The limitation with the quantitative methodology was the inability to receive an actual statement from the subject, albeit based upon the sample size and timeframe it was not conducive to the research at this time.
Chapter Five

Conclusions

Traditional education as we know it in the 20th Century has been anchored with the teacher in the brick and mortar classroom. As professors utilized personal contacts to distribute education to those who were deemed qualified to have the collegiate experience. Leadership was based on transactional leadership techniques and we did not deviate from that dynamic. Leaders of higher education created the formula for delivering pedagogy through classroom interaction and students who wanted to receive a degree were regulated to selecting courses that fit into the norm of the on campus college experience. Moving forward into the 21st Century there is evidence that a new dynamic in pedagogy emerged; the emergence of the technology. Multitasking students who are growing up in a digital world with the inherent ability to share and collaborate contrast strongly with tenured professors on campuses where the time-honored approach of lectures and individual assignments prevail and technology is limited to a slide presentation (O’Neill, 2013). This is not to imply that the traditional institutions who are still teaching classes conventionally have not embraced online learning aggressively. The transformation of technology in higher education is moving progressively.

This study was an attempt to understand the correlational relationship between the dependent and independent variables; teaching experience and technology skills, and how these factors impact faculties' attitudes toward online learning. Institutional support and training initiatives were also measured as it related to the faculty member's perceived level of comfort to teach online and/or technology-enhanced courses, which contributed to the measurement of
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faculty's perceived preparedness. It was the contention of this study that these variables are predictors for online teaching outcomes, which directly influenced faculty’s attitude and ability to teach online. The study examined other variables that impact this research such as societal demands; perceived quality of online education, and institutional mandates to infuse technology into higher education curriculum.

If higher education plans to meet the needs of students, transformation must permeate these institutions and not just with the institutional leader. The faculty as well as the administration must be entrenched in transformational leadership utilizing shared governance. In examination of the faculty’s role in transformative leadership, many faculty members have delivered pedagogy in the context of their own paradigm and maintain complete autonomy of their course structure, which as we move to the 21st Century has become somewhat problematic in the institution’s ability to transform. Faculty brings implicit theories of their own to our educational facilities; one being the discourse surrounding the definition of quality education. The research confirmed that there is a perceived relationship that exists between technology experience and attitude that impacts faculty's ability to deliver comprehensive effective online teaching. The Sanderson Exploratory Research Theory Model (SRTM) demonstrated the correlation of the significance of technology self-efficacy and attitude; and the significance of quality education and attitude based on the level of experience. The level of experience has a direct impact on the level of technology self-efficacy, and as a result shaped faculty’s attitudes and perceptions on the quality of online teaching. There was a clear indication that the existing belief that support and resources impacted perceived quality and attitude may need to be analyzed differently. The correlation of the significance of technology self-efficacy and attitude;
and the significance of quality education and attitude is statistically supported. The research showed the correlations between the digital moderate and digital natives are experienced in technology and demonstrated self-efficacy, which permits them to be receptive to utilizing their skills and accepting the challenge to teach online; inclusive of implementation of new technological tools. The level of experience also impacts their ability to teach online whether or not formal training and support systems are in place.

As we are transforming our modalities of delivering education, i.e. online teaching, blended courses, and technology infused classrooms, there are some faculty members who are digital immigrants who are slow to adapt to the increasing changes brought by technology in higher education. Faculty brings their own attitudes, behaviors, and mental models to the online learning community. O’Neill (2013) spoke to generational clashes also arising among faculty members. Some faculty may be perceived as resistant to online learning based on the variable of being uncomfortable with the medium. Based on the literature some faculty members indicated that there is a lack of connectedness from institutional leadership to the faculty’s technological learning process. Sellani and Harrington (2002) posited some faculty members see technology as one of the greatest gains in education; other faculty members want to avoid technology completely. There is a clear indication from this research study that there is a positive relationship between faculty’s technology experience and their ability to adopt online teaching. Faculty who possess a personal skill level of technology and consistent usage are more apt to be receptive to utilizing technology in the online teaching environment. Technology was classified within three categories of experience: digital immigrants, digital moderates, and digital natives. The research data demonstrated that digital moderates and digital natives’ technology experience that correlates to consistent personal usage and willingness to utilize in their educational
platforms. Conversely, digital immigrants demonstrated apprehension to adopt technology within the context of online teaching. Their level of experience is a basic understanding of technology usage and required additional time and instruction to be able to implement effectively and consistently. Digital natives and moderates are more self-assured in their technology usage and will on average be able to meet the challenge of online teaching.

As stipulated in the research, 94% of institutions in higher education provide training to assist faculty with online teaching, but lack structured training and ongoing support as the technology methodologies increase in capacity. There is a new paradigm that has evolved from this study that indicated that all faculty levels: digital immigrants, digital moderates, digital natives neither agree nor disagree that training and support is important to the landscape of online teaching. There are other factors that have evolved within the research, which indicates the importance of self-efficacy to become a major factor in the context of faculty adopting the technology. This research study does not advocate that we should dispense with training, support, and resources. The data suggested that we should review the practices and methodologies of the support programs that are being delivered. The research takes the position that training, support and resources are important to the landscape of providing comprehensive student-centered online teaching. Conversely, there needs to be a precursor that tailors the training programs to meeting the needs of the faculty’s level of experience. The institution has made an investment in online teaching modalities, and there should be an investment in assessing the needs of the faculty person to deliver useful training and support initiatives to develop well-rounded faculty who are just as adept at teaching online as in the classroom.

The results between digital natives, digital moderators, and digital immigrants demonstrated a significant difference in self-efficacy as it relates to technology. On average, the
digital natives are self-assured and willing to implement online teaching modalities, which spoke to the overall level of personal technology usage. The digital moderate also demonstrated the ability to embrace technology in online teaching modalities, but the digital immigrant’s self-efficacy with regard to technology is not conducive to providing the confidence level to implement innovative technology teaching modalities. Technological self-efficacy is driven by the individual paradigm as it relates to technology experience.

Faculties’ attitudes toward online teaching were predicated on their personal technology usage and teaching experience, which formed the basis of their online teaching perceptions. The research shows that the level of faculty experience impacts how faculty embraces teaching online and formulated the attitude about perceived quality online teaching. As the classification levels demonstrate, faculty were self-identified based on their level of experience, which categorized digital immigrants, digital moderates, and digital natives. The research also indicates that the digital moderates and digital natives have a higher level of experience with regard to technology usage, which the research indicates there is a healthy relationship with regard to perceptions and attitudes toward online teaching.

Traditional institutions like Governors State University must be cognizant that the reality of enrichment of online programming must not be one dimensional. While there is an investment in the technology tools; there must also be an investment in training and professional development for faculty to successfully integrate technology within their educational modalities. Conversely, the objective is to provide students an integrated online experience that is student-centered, which will emulate the same quality of learning and interaction as the classroom experience. The infrastructure for online teaching must be supported to ensure that a varied
ongoing training process is designed to meet the technology level of the faculty members. Specifically, structured to assist and prepare faculty to ensure that they are able to embrace the technological transition to online teaching. Additionally, the institution must establish university standards and adopt best practices for online teaching, while at the same time affording faculty autonomy to design their courses. These standards must be implemented consistently within the framework of online offerings and faculty must be able to meet these standards to deliver a quality online experience. In the classification of technology level of experience for digital immigrants, digital moderates and digital natives there were different needs.

Digital immigrants must have basic technological training to enhance their technology usage to build their technology self-efficacy. This group will require opportunities to increase their technology skills to become comfortable with technology before they are able to transition to online teaching. The digital immigrant’s comfort level is in the face-to-face classroom and as a result, they are reluctant to embrace online teaching. Until they reach a level of confidence regarding their skills to utilize technology there will continue to be pockets of resistance. This group would do well to have a basic certification in Blackboard attesting to their basic technology usage prior to utilizing the system for teaching.

Digital moderates have technology experience and their training needs to be designed to reinforce their skill level. Training for this group should encompass support in designing their online curriculum and utilizing technology to develop a quality online course. Within the correlation table, this group was more receptive to training, which indicates that their technology experience and technology self-efficacy indicates that they understand the value of technology in relationship to online teaching. They demonstrate a confidence level to embrace technology as a
viable tool to create a quality online course. Their training should include online teaching certification.

Digital natives have the technology experience and technology self-efficacy to forge ahead to completely embrace the nuances of online learning. They have the confidence to implement technology in their teaching modality with or without formal training. Training for this group would be well served to introduce new technology and instructional design. This group’s technology experience and confidence would be enhanced through professional development and implementation of new technology developments. This group would be served well to have an advanced online teaching certification.

Based on the varied level of technology experience, it is imperative that faculty have support and resources that are geared toward their level of experience. Applying a one size fits all would be a disservice to the advancement of the institution, students, and faculty who are teaching online. The objective is to ensure that faculty embrace the technology and can effectively make the transition from classroom to online teaching. The online teaching experience must be as effective as the experience in the face-to-face classroom.

The previous research outlined in this study is relevant to understanding the methodology of how technology has greatly impacted faculty and their teaching modalities, and where we need to go. While moving into the digital age with increased speed, pedagogy is drastically changing and; institutions must realign and redesign their approach to educational deliverables and the role of faculty. The research indicated that faculty at all three levels of experience find teaching face-to-face continued to be of paramount importance, and online teaching has to be designed to significantly embrace that concept. With the rise of for-profit institutions and online
learning in traditional institutions, learning without borders; and in student-centered pedagogy, institutions must conceptually transform online teaching deliverables.

The nuances of online teaching are having a major impact on faculty who are required to embrace this medium. Institutional leaders are transforming their leadership styles and changing paradigms regarding educational deliverables; affording higher education institutions the ability to remain relevant in addressing a new age of students whose expectations are dictating the change. The research is important to create a timeline of the evolution of this process; and it is abundantly clear that we need to continue the research. Technology is an ever-changing process which has a profound effect on our faculty, students, and higher education deliverables. As technology has continued to be infused in higher education in the 21st Century; faculty will need effectively structured and continuous training in technology to meet the demands of higher education in delivering quality technological curriculum. The research indicated that among the three groups in the study that training and support was not the major factor in delivering technological curriculum. Support and resources are paramount to the educational landscape, as institutions continue to erect the infrastructure for overall excellent for faculty teaching online.

There are a number of faculties who do not believe that quality teaching and learning is a transferable trait to the online environment. There is doubt regarding the value and legitimacy of online education (Allen & Seaman, 2011; Jaschik & Lederman, 2014). Allen and Seaman (2014) posited that the faculty rate of acceptance for online education has not kept pace with the rate of yearly online enrollment increases. As faculty engaged in online teaching we must be cognizant of the difference between utilizing technology to deliver quality curriculum as opposed to just adopting quality technology. Institutional leaders must be mindful that technology is evolving and it creates a significant challenge for faculty to keep pace. They must be able to
develop innovative faculty training programs; addressing communication and pedagogy using synchronous tools for successful transitions from bricks and mortar to online learning.

Recommendations and Future Research

Quality curriculum entails dedicated and knowledgeable faculty who have the necessary technology experience, tools, and resources to meet the challenges of students born with an innate understanding of technology. Antithetical assumptions that faculty who are able to teach in the classroom can easily transition to online teaching is not grounded in fact. It is the assumption of this research that training and support is an important factor to assist faculty in providing quality online teaching, however, there must be a succinct development of technology self-efficacy in order to be able to confidently participate in the structured ongoing training programs. Fear of technology is always an issue; developing online courses demand considerable instructional development effort and time on the part of faculty members, and doing so requires them to master the technology behind distance delivery (Finney 2004). For faculty members who have not mastered technology skills, there will continue to be apprehensions regarding joining in training initiatives that are not gear to their level of need. The lack of possessing a comprehensive understanding of the technology tools leaves these faculty members apprehensive at best in joining structured online training and support programs.

Conversely, digital immigrants as stipulated from the onset of the research are the group that lacks the technology experience for meaningful implementation of online teaching. As a result, members in this category will typically prefer to teach in the traditional classroom, and display a reluctant attitude toward online teaching. This group will need increased opportunities and support to elevate their technology experience to allow the catalyst to increase their skill
level to reach technological self-efficacy. Until self-efficacy is reached within this group they will continue to be reluctant to place online teaching in their repertoire, and continue on a trajectory to provide the basic requirements of mandates implemented by the institutions. Digital natives and digital moderates will be well served with ongoing professional development as their technological self-efficacy affords them the skill level to be able to comprehensively utilize technology with regard to online teaching.

The research indicated that institutions are continuing to increase online curriculum and as we move forward with online offerings the expectation is that these offerings will continue to increase. For example, GSU offers five online degree programs, over 200 online courses, and over 65 hybrid courses. This paradigm has become typical of the engagement of traditional institutions in this technological age. Twenty-first Century faculty must possess a structured level of expertise as related to technology to meet the demands of educational deliverables.

There is very little work that has been done that looks at the impact and preparedness of faculty members succinctly who possess varied levels of technology experience. Institutional training has provided a “cookie cutter” approach where all faculty members regardless of the level of experience receive the same training. How institutions train and support digital immigrants must be succinctly different than digital moderates and natives. Bolliger and Wasilik (2009) stipulated that “components of faculty satisfaction needs to be investigated as online education becomes more prevalent and dynamic forces such as adoption rates, learner expectations, levels of support, and conditions continue to change” (p.104). The training and support must be fluent to incorporate the faculty’s technology experience with consideration of the behavioral effects. Specifically, examining the faculty paradigm shift and their level of preparedness, and how it...
impacts their teaching modalities. There is continued work to be done in this area due to the enormous presence of technology and the ever-changing nuances associated with online deliverables in higher education. As online teaching modalities impact the student learners there must be degrees of training to meet these needs.

As technology continues to evolve and students have varied choices within the context of how they receive their education, the research must continue to encompass technology self-efficacy and, faculty attitudes and perceptions, as they relate to the causal effects of faculty’s ability to deliver quality online teaching. There is continued research needed in this area.
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Appendix A

Shifting Paradigms and Teacher Technology Integration Instrument
Research Introduction

Higher education is experiencing a decline in institutional resources, student demographics are changing, and there is a shift in teacher-to-student centered learning, the impact of technology on faculty roles and the paradigm shift from the industrial age to the technological age has had a major influence. This quantitative study will be based on faculty and their use of technology, the relational institutional challenges from leadership, and how it impacts their teaching modalities. While examining the training and support institutions provide to faculty as higher education becomes increasingly dependent on technology-driven learning, specifically contrasting digital immigrants and digital natives, and faculty resistance with the institutional commitment to be competitive in the 21st Century. Data will also be analyzed based on faculty’s perceptions, experience, and technology usage in the classroom and current methods employed in the online classroom.

Shifting Paradigms: Faculty’s Navigation From the Classroom to Technology Enhanced Learning

You are invited to participate in a research study about the impact of technology on faculty to deliver technology-enhanced teaching modalities. This research project is being conducted by Sheree Y. Sanderson, a doctoral candidate at Governors State University.

The objective of this research project is to attempt to understand faculty behaviors and attitudes as it relates to their capacity to deliver technology-enhanced teaching modalities? The survey is being given to current faculty at Governors State University in addition to utilizing the snowball sampling. Feel free to disseminate to other colleagues at other institutions. There are no known risks if you decide to participate in this research study, nor are there any costs for participating in the study. The information you provide will help correlate how best to understand the role of institutional training programs and resources as it pertains to the needs of faculty teaching technology infused courses. The information collected will quantify a general understanding of faculty technological literacy, support, and resources needed to assist faculty in this medium.

The questionnaire should take approximately 15 minutes to complete. Please answer all questions honestly; there are no right or wrong answers.
Risks and discomforts
There are no known risks associated with this research. I do not anticipate any risks to respondents participating in this study.

Potential benefits
There are no known benefits to you that would result from your participation in this research. This research may help to understand the shifting paradigms related to online teaching modalities and the impact on faculty.

Protection of confidentiality
The data will be gathered in complete anonymity, even the researcher will not be aware of the correlation of the survey to the individual. This will be applicable for both GSU faculty and "snowball sampling" faculty. All data will be compiled electronically. The researcher will utilize the anonymous feature within Survey Monkey that does not track IP addresses of the respondents, therefore; no IP addresses will be retained. The research data will be collected via the researcher’s home desktop computer and the raw and aggregated data will be concealed and stored by the researcher in a locked file cabinet in the researcher’s home office. Once data has been collected and analyzed, the data will be shredded. Identities will not be revealed in any publication resulting from this study.

Voluntary participation
Your participation in this research study is strictly voluntary. As a respondent, you may choose to not answer one or more specific questions and you are able to discontinue the survey at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

This survey will remain anonymous for all participants. If you choose to participate, no one will be able to identify your participation, nor will anyone be able to determine the employing institution. There will be complete anonymity with regard to your participation in this study. If you have any questions, comments, or concerns about participating in this study, you may contact me, Sheree Y. Sanderson at [contact details] or email me at [contact details]. You may also contact my committee chairperson, Dr. Stephan Wagner, College of Business, Governors State University, University Park, IL, 60484, or email [contact details].

If you have any questions or concerns about this project or your rights as a research participant, please contact the GSU Institutional Review Board Chair Renee Theliss, Ph.D. at [contact details].

By clicking the next tab, you acknowledge that you have read this information and consent to participate in this research.
### Section I -- Technology Experience

Section I consists of information pertaining to your personal technology prowess. Please honestly rate your personal computer usage there are no right or wrong answers.

* 1. I consider myself a digital immigrant (Beginner) technology user can perform basic task: send emails, create word documents, search the web, etc.). Generally needs assistance with technology

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 2. Digital Moderate (Intermediate) ability to format documents using various styles and templates spreadsheets, charts, and basic graphic concepts.

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<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 3. I am a digital native (an experienced computer person) uses technology consistently, able to utilize and install software programs, ability to troubleshoot technology issues, consistently uses various technology mediums and platforms with ease.

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<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
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* 4. Learning new technology is confusing to me.

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<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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</table>

* 5. I get anxious when using new technologies because I don’t know what to do if something goes wrong.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
</tr>
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</table>

* 6. I am confident in trying to learn new technologies on my own.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
</tr>
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<tr>
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</table>

* 7. I feel comfortable about my ability to work with technology.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
8. I enjoy finding new ways that I can use technology in the classroom.

9. I get excited when I am able to show my students a new technology application or tool.

10. I am confident with my ability to troubleshoot when problems arise while using technology.

11. Learning new technologies that I can use in the classroom is important to me.

12. The time it takes for me to learn how to use technology is better spent on other aspects of my work.

13. I am intimidated by technology.

14. Technical problems do not discourage me from teaching online.

**Section II -- Attitude Toward Online Teaching**

Section II examines attitudes and perceptions related to technology-enhanced learning paradigms. Please answer each question based on your own opinion.

15. Technology allows me to create materials that enhance my teaching.

16. Technology helps me be better organized in my curriculum.
<p>| | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>17. Technology can be an effective learning tool for students.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>18. Using technology to communicate with others allows me to be more effective.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>19. My students are excited when they use technology in the learning process.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>20. There is no incentive from my institution for learning how to use and integrate technology in the classroom.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>21. Using technology in teaching is a priority for me.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>22. I regularly plan my curriculum to include student using technology.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>23. When planning instruction, I think about how technology could be used to enhance student learning.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>24. I try to model effective technology use for my students.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>25. When planning instruction, I consider state and national technology standards.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>26. Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Neither Agree or Disagree</td>
<td>Strongly Disagree</td>
</tr>
</tbody>
</table>
* 27. The level of my interactions with students in the online course is higher than in a traditional face-to-face class.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 28. The flexibility provided by the online environment is important to me.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 29. I do not feel that online teaching delivers a quality education.

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<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
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* 30. I think teaching should remain in the classroom with face-to-face learning.

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<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 31. Do you feel that online teaching is the way of the future.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 32. Do you feel that social media can be used to educate in the online environment.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
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* 33. I feel pressured by administration to teach online.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Not Sure</th>
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* 34. Do you feel that for-profit institutions (e.g. University of Phoenix, etc.) shaping the future of higher education.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 35. Do online courses offer the same quality of education as in-person classes

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**37.** Do you feel you are encouraged to use technology as a teaching tool.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**38. I have no desire to teach online.**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
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**39. Do you feel that technology is distracting to teaching methodologies?**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**Section III - Availability of Technology Support and Resources**

Section III pertains to training, resources, and support provided by the institution to assist faculty in teaching online and technology-enhanced courses. Select the answer that you believe best correlates to your personal understanding.

**40.** A vision for technology use in our university is clearly communicated to faculty.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**41. Curriculum support is available to assist with technology integration ideas.**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**42. Technology support is available to assist with troubleshooting.**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**43. My colleagues are committed to integrating technology in the classroom.**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**44. Are you satisfied with the technology professional development you receive.**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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</table>
* 46. Do you feel your institution provides ample training and support for online teaching.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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</table>

* 47. Are faculty trained to teach online prior to implementation.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 48. I have convenient access to technology resources to support my online teaching.

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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* 49. Faculty receive continuous training to teach online.

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<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neither Agree or Disagree</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
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**Section IV -- Demographics**

Section I consists of demographic questions to gather general background information that will only be utilized to correlate analysis of this research study and will not be revealed or released to any outside parties.

* 50. Gender

- Female
- Male

* 51. Highest Degree

- Bachelor's Degree
- Master's Degree
- Doctorate Degree
- Other

* 52. Academic Rank

- Full/Associate Professor
- Instructor
- Lecturer
- Adjunct
- Other
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
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</thead>
<tbody>
<tr>
<td>*53. Years Teaching</td>
<td>Less than 5, 5-10, 11-15, 16 and over</td>
</tr>
<tr>
<td>*54. Years Teaching Online Courses (includes technology enhanced courses)</td>
<td>Less than 2, 2-4, 5-10, 11 or more</td>
</tr>
<tr>
<td>*55. Age</td>
<td>Under 30, 30-40, 41-50, 51 or more</td>
</tr>
<tr>
<td>*56. Institution Affiliation (where you teach or taught previously)</td>
<td>Governors State University, Other (please specify)</td>
</tr>
</tbody>
</table>
Appendix B

Demographic Charts
Shifting Paradigms: Faculty’s Navigation From the Class

Shifting Paradigms and Teacher Technology Integration Instrument

**Q50 Gender**

Answered: 118  Skipped: 3

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>65.25%</td>
</tr>
<tr>
<td>Male</td>
<td>34.75%</td>
</tr>
<tr>
<td>Total</td>
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</table>
### Q51 Highest Degree

Answered: 118  Skipped: 3

<table>
<thead>
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<th>Answer Choices</th>
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<tbody>
<tr>
<td>Bachelors Degree</td>
<td>0.85%</td>
</tr>
<tr>
<td>Masters Degree</td>
<td>39.02%</td>
</tr>
<tr>
<td>Doctorate Degree</td>
<td>58.4%</td>
</tr>
<tr>
<td>Other</td>
<td>0.85%</td>
</tr>
<tr>
<td>Total</td>
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</tbody>
</table>
Q53 Years Teaching
Answered: 119  Skipped: 2

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>15.13%</td>
</tr>
<tr>
<td>5-10</td>
<td>28.85%</td>
</tr>
<tr>
<td>11-15</td>
<td>15.97%</td>
</tr>
<tr>
<td>16 and over</td>
<td>42.86%</td>
</tr>
<tr>
<td>Total</td>
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</tbody>
</table>
### Q54 Years Teaching Online Courses
(Includes technology enhanced courses)

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2</td>
<td>31.03%</td>
</tr>
<tr>
<td>2 - 4</td>
<td>15.38%</td>
</tr>
<tr>
<td>5 - 10</td>
<td>49.52%</td>
</tr>
<tr>
<td>11 or more</td>
<td>12.07%</td>
</tr>
<tr>
<td>Total</td>
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</tbody>
</table>
Shifting Paradigms and Teacher Technology Integration Instrument

**Q55 Age**

Answered: 119  Skipped: 2

<table>
<thead>
<tr>
<th>Answer Choices</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 30</td>
<td>0.00%</td>
</tr>
<tr>
<td>30 - 49</td>
<td>19.33%</td>
</tr>
<tr>
<td>41 - 50</td>
<td>24.37%</td>
</tr>
<tr>
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Shifting Paradigms: Faculty’s Navigation From the Class

Shifting Paradigms and Teacher Technology Integration Instrument

SurveyMonkey

Q56 Institution Affiliation (where you teach or taught previously)
Answered: 119  Skipped: 2

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