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Vocational Faculty Experience with Emerging Technology

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Vocational Faculty Experience with Emerging Technology

by
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Abstract

This case study illuminates the vocational faculty experience with emerging technologies. Interviews were conducted with vocational faculty who incorporated emerging technology into their practice within three years of the study. The researcher sought to (1) discover experiences and perceptions regarding role, motivation, and self-efficacy related to technology integration, (2) gain an understanding of how emerging technologies are influencing pedagogy, and (3) discover what types of institutional support are valued. Data collected within this study provides evidence that emerging technologies are impacting pedagogy. A distinction between classroom technologies and industry-related technologies was revealed. The centrality of industry-related technology in vocational program pedagogy is a key finding from this study. Study participants exhibited intrinsic motivation demonstrated by a strong sense of self, independence, and self-efficacy. This closely aligns with key social determination theory factors of autonomy, competence, and relatedness. The experience of faculty in this study differs in distinct ways from that of faculty found in existing literature. Further research that increases understanding of the vocational faculty experience, when added to knowledge of other faculty groups, can result in the development of a holistic approach to establishing expectations and support related to the integration of emerging technology across higher education institutions.

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Chapter I: Introduction

Statement of Problem

The higher education industry is experiencing a period of tremendous challenge and change. Internal and external influences, brought about by rapidly advancing technology, are creating a need for institutions to consider culture, practice, and outcomes. Massification in higher education has birthed an entrepreneurial emphasis on maximization of market share. The fight to stay solvent is fueled by reduced government funding and the challenge of creating and maintaining a brand that attracts and retains students (Mount & Bellanger, 2004). Adding further complexity, rapidly advancing technology has raised a challenging set of identity issues within higher education (Amirault, 2012; Mount & Bellanger, 2004). There now exists a disparity between mission and identity i.e., between administrators vying for a place in the industry and faculty, many of whom live within the old identity of knowledge and truth (Mount & Bellanger, 2004). As leaders struggle to adjust processes and practice to respond to changing needs and expectations, faculty struggle to adjust to shifting paradigms regarding their practice.

Existing literature primarily represents attitudes and perceptions of faculty at two and four-year liberal arts institutions. Routine national studies benchmark shifts in faculty attitudes and acceptance of online learning growth. Published case studies highlight the efforts of individual institutions to implement academic technological initiatives with varying levels of success. Technological advances seemingly work in tandem with shifts in pedagogy from teacher-centered to student-centered approaches and contribute to shifting faculty roles. The internet and subsequent e-learning tools are the primary catalyst for the faculty growth and development continuum. Faculty are no longer the single point of expertise in a student's learning community. Instead, faculty have taken the role of peer in sharing opinions, viewpoints,

and critique to create mutual understanding (Garcia, Elbeltagi, Brown & Dungay, 2015). Faculty have gradually shifted their view of e-learning from a tool to provide information to students, to a medium for reducing transactional distance between teacher and student, and now also a tool for creating collaborative space that enables students to construct and develop understanding of course content (Gonzales, 2010).

Multiple studies reveal that faculty struggle to see the value of available educational technologies within their pedagogy. The sheer number of technologies available makes it challenging for faculty to identify appropriate technologies for their specific needs. Faculty grapple with learning the full capabilities of selected technology and finding the time needed to develop proficiency (Si, Radford, Fabian & Fan, 2016). Additionally, faculty encounter real challenges in developing technology-related course management skills. They struggle to apply technological tools to meet the instructional needs of the curriculum and support student learning. Developing plans for teaching students to use the tools correctly and proper management of computer hardware and software adds even more complexity (Ertmer & Ottenbreit-Leftwich, 2010). Without a clear understanding of what will be gained, there is a reluctance to invest the time and effort into mastering available technologies.

Institutions have attempted to compensate for slow adaptation to e-learning methodology in a variety of ways. As faculty attempt to respond to shifting pedagogy, institutional forces are creating further disruption in the form of academic outsourcing, course standardization, and increased usage of adjunct versus tenured faculty. Outsourcing in higher education allows the unbundling of traditional learning tasks through development of instructional design teams or by delegating course design to private companies. Additionally, there has been a significant shift in the ratio of full-time tenure-track faculty to adjunct, or non-tenure-track faculty. These

approaches seemingly allow for gains in institutional efficiencies and fiscal stabilization, while also perpetuating the dichotomy of mission and identity.

Existing literature offers a comprehensive view of the disparity between administrative technology-related goal setting, and liberal arts faculty perception of emerging technologies as it relates to their role and motivation to teach. There is a gap in the literature, however, concerning the attitudes and perceptions of vocational faculty as emerging technologies enter their practice. As a result, it is not possible to ascertain if the experience of vocational faculty is the same or different than that of liberal arts faculty. In institutions that blend both liberal arts and vocational education, it is not known if expectations for faculty use of technology are equal or disparate, or if the approach to e-technology integration is uniform across the institution. Illuminating the vocational faculty voice to enable understanding of similarities and differences between liberal arts and vocational faculty experiences may be beneficial.

Existing literature also fails to connect the core themes inhibiting faculty adoption of emerging technologies with meaningful change management techniques. Change management theory teaches leaders the futility of attempting to manage change without addressing the human response and potential impact on affected employees. The literature provides evidence of institutional failed attempts to manage change associated with emerging technologies. Higher education will continue to be challenged to steward their mission and manage the evolution of higher education identity within an ever-changing landscape. Technology will continue to advance and changing student needs will persist in challenging the faculty role and the way that institutions deliver education. To effectively support faculty through the transition between the current environment and future reality, it is crucial that leaders understand faculty motivations and perceptions towards changes impacting their professional practice.

Purpose

The purpose of this study was to (1) compare experiences and perceptions of vocational faculty within a technical and community college in Minnesota regarding role, motivation and feelings of self-efficacy, as emerging technologies are incorporated into their teaching practice, to that of the experiences and perceptions of liberal arts faculty as found in existing literature and (2) identify which strategies are most successful in supporting faculty needs.

Significance of the Study

Higher education has a rich history of adaptation. However, with the introduction of personal computers and networked technology, it is experiencing a landscape of rapid change never before encountered (Amirault, 2012). The literature suggests the role of faculty in higher education is changing because of technological advancements and changing student demographics (Amirault, 2012; Dewan & Dewan, 2010). It further suggests that success or failure in adaptation to new roles and expectations among faculty is a significant concern to the institution (Amirault, 2012). Political and economic factors require that higher education institutions embrace globalization, adopt rapidly changing technology, and adapt to ever-shifting expectations regarding student and institutional outcomes. While these factors influence all areas of the institution, the classroom is the primary space in which these concerns converge.

The existing literature provides evidence of a disconnect between administration and faculty that slows adaptation to the changing higher education landscape. Decisions regarding educational technology choices, training methods, and implementation strategies are made without full understanding the implications and impact to faculty. Training and development efforts typically focus on teaching faculty about technical aspects of emerging technologies without facilitating a connection to pedagogy. The impact that educational technologies can

have on the role of faculty, both positive and negative, are often misunderstood by both faculty and administration. Further, compensation and reward structures in higher education institutions remain rooted in traditional models that do not account for new skills, challenges, and opportunities that successful adaptation to emerging technology requires.

There is a gap in the literature regarding the connection of core themes inhibiting adoption of emerging technologies in teaching practice with meaningful change management techniques that would result in harmonious transition into the changing higher education landscape. This study was focused on developing an understanding of how faculty are perceiving and experiencing their role regarding incorporating emerging technologies into classroom practice. Learning about how faculty experience self-efficacy when work environment and performance expectations may be changing, what motivates faculty, and how emerging technology is shaping pedagogical practice has the potential to inform academic leaders on how best to mentor faculty from the current environment to their future reality.

Delimitations

This case study was conducted in September 2019-November 2019 and focused on vocational faculty employed at a mid-sized community and technical college in Minnesota. Faculty chosen for participation in the study were expected to have utilized institution-selected learning management systems, to have incorporated emerging technology within their pedagogy, or to have transitioned to fully online instruction within three years of the study. The study sought to gather experiences and perceptions of these faculty regarding role, motivation, and self-efficacy apart from contractual limitations.

Research Questions

1. In what ways are emerging technologies shaping pedagogy in the vocational classroom?

2. How has the integration of e-tools in pedagogy altered faculty perceptions of role, motivation, and self -efficacy? If not at all, why is that?
3. What experiences and institutional support are most helpful to vocational faculty when facing change?
4. In what ways does the vocational faculty experience differ from what is reported in the literature about the liberal arts faculty experience?

Organization of the Study

This study is organized in to five chapters concluding with a reference list. Chapter Two synthesizes existing literature regarding the evolution of technology in higher education and its impact on pedagogy, shifting faculty roles, and institutional responses to resulting challenges. Chapter Three describes the methodology of the study and its research design and offers an analysis of data gathered. A discussion of findings related to data gathered within the study is presented in chapter Four. Chapter Five provides a final analysis, study conclusions, and recommendations for educational practice.

Chapter II: Review of Literature

The higher education industry is going through a period of rapid change fueled by technological advances, changing student demographics, and political and social rhetoric which is critical of higher education cost and outcomes. Changing student demographics is creating a demand for flexibility and personalization that challenges traditional institutional culture. In practice, this disruption has led to a crisis of identity and mission for many higher education institutions and the individuals who work in them.

Fiscal challenges are creating the impetus for change across the industry. In stark contrast to the historical competitive market to which higher education institutions have been accustomed, the growth in fully online academic programming has created a free market higher educational system in which students may elect to participate in education without political or geographical boundaries (Amirault, 2012). Institutions are challenged to envision and deliver higher education in ways not previously experienced. This is due to external pressure resulting in the development of new technologies, and internal pressures created by student desire to utilize new technologies for learning (Amirault, 2012). Effective utilization of emerging technologies is pivotal to success and future sustainability.

Faculty members are central to the facilitation of student learning and the realization of institutional mission. There is abundant research available to inform administration of faculty attitudes and priorities relevant to incorporation of emerging technology in teaching practice. Successful transition and sustainability can occur when administration better understands faculty perceptions of role, their motivations to teach, and how to remove barriers to support the creation of new opportunities as emerging technologies enter teaching practice. In the following literature analysis, four topics are addressed: (1) cultural forces in higher education, (2) the

faculty role and technology, (3) institutional forces in faculty experiences, and (4) faculty experience.

Cultural Forces in Higher Education

Massification of education.

Massification is the term used to describe the methods utilized to increase access to higher education and educate larger numbers of people. Measured by gross enrollment numbers within a nation's population, and growth in the number and types of higher education institutions available for students to access, massification of education has historically been viewed as an economic imperative for all nations (Tyndorf & Glass, 2016). Statistically, many microeconomic studies support the theory that individual economic gains are directly correlated to educational advancement. There are fewer studies to support macroeconomic correlation between an increase in the gross number of educated members of society and economic growth in that country (Tyndorf & Glass, 2016). However, studies in all nations do show a correlation between total education enrollments and significant economic growth. "A 1% improvement in tertiary educational enrollment results in a .6% percentage rise in GDP per capita" (Tyndorf & Glass, 2016, p. 8); a correlation that supports the idea of massification of education as a key economic strategy.

Massification in education has been used as a strategy for economic growth in the United States for decades. Beginning with President Harry S. Truman in 1947, no fewer than six subsequent United States Presidents have established goals for educational enrollment and attainment. These goals build on the premise that achievement in both areas is necessary to meet workforce demands and maintain global competitiveness. In 1947, President Truman set a goal to double the 2.3 million students enrolled in higher education by the year 1960. The United

States reached that goal in 1963 after implementing a series of groundbreaking strategies. Under the guidance of the Truman administration, (1) community colleges were established, (2) federal student financial aid; first for veterans of the military- and then for all was provided, and (3) progressive policies were developed that expanded education programs for adult learners and began work to eradicate racial and religious discrimination in higher education (Nettles, 2017).

President Lyndon B. Johnson unveiled the "Great Society" programs that birthed the Elementary and Secondary Education Act and Higher Education Act in 1965. Both programs resulted in increased support to individual states for investment in colleges and universities and strengthened financial aid support for individuals (Nettles, 2017). In 1990 the George H.W. Bush administration developed "NEGP", a series of six educational goals for elementary and secondary education that worked to increase student readiness for education at all levels, improve the quality of teaching and learning, ensure student academic achievement and completion, and ensure the nation's global competitiveness in math and science (Nettles, 2017). These goals morphed into the more well- known "No Child Left Behind Act" in 2002 under that same administration.

More recently, in 2009 President Barack Obama established college degree attainment goals. Attainment of the goal for 60% of all 25-34 aged individuals to earn an associate or bachelor's degree by 2020 was intended to place the United States as the leader in the massification of higher education globally and address growing labor market demands for individuals with postsecondary education and training (Nettles, 2017). At the end of the Obama Administration, 48% of the target population had earned an associate or bachelor's degree and disparities across ethnic groups had become more pronounced (Fry, 2017).

Most developed countries fall somewhere along the spectrum of massification, whether at the stage of rapid expansion of educational opportunities and enrollment, or related to universal access (Tyndorf & Glass, 2016). For example, universal access to enrollment in higher education for all college-aged individuals evolved over a 22-year span in Japan and corresponded with the rate of economic growth experienced in that country (Huang, 2012). This growth was initially facilitated by steady growth in universities, then by junior college and colleges of technology in the early 1960s to mid-1970s. Later growth was the product of university expansion and the development of specialized training colleges (Huang, 2012). It took over 40 years to achieve enrollment of 50% of all college-aged individuals, but by 2007 Japan enjoyed an enrollment rate of 96% of the college-aged population (Huang, 2012). Massification in Japan was expedited through privatization of higher education. In contrast, massification to universal access in the United States has been accomplished through publicization of higher education (Huang, 2012).

Sidorkin (2012) likened massification of higher education to a transition from individual craftsmanship to mass production. While there are statistically proven individual and societal economic benefits to massification, growth of this magnitude naturally creates negative consequences that must be mitigated. Massification has shifted the way that individuals think about the purpose and benefit of higher education and has created cultural and fiscal dissonance across the higher education industry. Whelan (2016) spoke of the impact of massification from a market fundamentalist perspective. Society and students have begun to view education and the increase in knowledge as a productive "exchange" to be used by the student to increase personal market value in the labor market – a commodification of education (p. 52). Prior to universal access, participation in higher education allowed for differentiation of self from others because

institutions had the ability to exclude students. Access to higher education was restricted to some rather than available to all. In an environment of universal access, higher education institutions lose the ability to exclude students (Sidorkin, 2012). This changes the demographics of a student body and changes the dynamics of learning processes inside classrooms. Educators are grappling with the challenge of keeping students engaged in learning when participation in learning is no longer viewed as a differentiating characteristic (Sidorkin, 2012).

Massification for the sake of access and economy backfires if techniques are isolated from characteristics that make education valuable in the first place (Allais, 2014). The primary grievances against massification are lack of fiscal resources to serve larger populations of students and the way that massification changes how faculty interact with students (De Courcy, 2015; Hornby & Osman, 2014). Increasing class sizes are the most visible byproduct of massification. Large class sizes challenge how faculty interact with students and affect teaching practice (Hornsby & Osman, 2014). Large class sizes force faculty to create new pedagogical approaches and seek efficiency of process. "Technological innovation has become the pedagogical salve to the diminishing academic profession" (Whelan, 2016, p. 53). Emerging educational technologies change the way that education can be delivered and challenges traditional academic roles. Educational technology companies have entered the market with products that change how students engage with information and develop knowledge. Faculty cannot operate in traditional ways in the new higher education environment. Instead, they need to become more collaborative while working within their specialty to be effective (Courtney, 2013).

Technological advances in higher education.

An examination of the history of higher education reveals a strong tradition of adaption and advancement in relation to emerging technology. The industry has sustained through a revolution of telecommunications and digital computing advances. Each stage has challenged the relevancy of educational services provided by the institution and required the institution to adopt new ways of conducting business. It has also caused institutions to examine their practice of teaching and learning (Amirault & Visser, 2009). While the industry has repeatedly demonstrated the ability to adapt and thrive, the rate of technological advancement in the current environment has outpaced previous experience (Amirault, 2012). The complexity of the issue cannot be minimized as advancing technologies affect all corners of higher education.

The expansion of the internet has created the platform for mass distribution of information. A phrase and click of a button allow the least informed to become pseudo-experts in all manner of topics. With little effort, one may become a seemingly semi-competent historian, economist, physician, electrician, or plumber. Increasing affordability and advances in technological tools brought about by open-source activities has influenced a level of access to information not previously imagined and has challenged the traditional confines of education. "Sage on the stage" is a phrase associated with traditional pedagogy in which students rely heavily on the instructor for both dissemination of information and establishment of meaning and application. We now have the capability to publish content that is easily accessed for update and available outside of existing learning systems (Downes, 2004). As technological tools and methods become more sophisticated, they create limitless ways and places for learning. Basic subject matter has become globally available (Downes, 2004; Hassel, 2011). This has been the impetus for a shift to learner-centered pedagogy in which students take ownership in their

learning and instructors assume the role of guide in the interpretation of information gathered from multiple sources (McWilliam, 2008). This impacts the role of the educator in the classroom and creates significant challenges for institutions in determining what technologies, when adopted, will best serve the needs of the institution while allowing it to continue to fulfill its educational mission (Amirault, 2012; Dewan & Dewan, 2010).

Access to learning is no longer restricted to location-dependent, brick and mortar institutions. Advances in technology and access to integrated telecommunication networks, when coupled with changing student preferences, is the primary impetus to shift courses and academic programs online in higher education institutions across the nation (Amirault, 2012). The Babson Survey Research Group, which reports generalities about student enrollment, reported in 2012 that the rate of enrollment in online courses had grown at a substantially higher rate than overall enrollment growth in higher education. It had reported that in 2002, 1.6 million students were enrolled in at least one online course. That number grew to 6.1 million by 2010 (Allen, Seaman, & Babson Survey Research, 2012). Statistics gathered in the fall of 2014 show 5.8 million students enrolled in at least one online course and 2.85 million students enrolled exclusively online (Stumshein, 2016). Information published by the National Center for Education Statistics reports that in the fall of 2019, 6 million students were enrolled in at least one online course and 2.4 million students were enrolled exclusively online. The lack of substantive change in enrollment levels from 2014 to 2019 may indicate that enrollment in online courses has plateaued and that the period of rapid growth has passed. However, what has resulted is a level of "massification" in higher education that has birthed an entrepreneurial emphasis on maximization of market share. Fueled by reduced and re-aligned government funding, and the challenge of creating and maintaining a brand that attracts and retains students

that are susceptible to the allure of other institutions, technological advances are contributing to an environment where solvency is an important challenge for higher education leaders (Mount & Bellanger, 2004).

The Faculty Role and Technology

Shifting faculty roles.

The Internet is reportedly the primary catalyst for change in teaching and learning. It is said that the internet has gone through three iterations to-date. These iterations are commonly referred to as web 1.0, web 2.0 and web 3.0. Each evolution of the internet has influenced a corresponding change in higher education. Web 1.0 was the impetus for the shift from one-size-fits-all to customized education (McKee, 2010). This shift is described in other literature as the shift from teacher-centered to student-centered learning models. Web 1.0 provided faculty with expanded access to information and increased the ability to collaborate with peers in the development of learner-directed approaches (Acikgul Firat & Firat, 2021; McKee, 2010). Most faculty struggled to utilize the benefits of Web 1.0 effectively and continue to struggle to maximize Web 2.0 features. Web 2.0 offers expanded resources to increase interactive networking and learning experiences that are more personally meaningful and connected to student's social constructs. Some faculty resist forfeiting agency over learning to the Internet where students individually connect to a network of educational experiences (Acikgul Firat & Firat, 2021; McKee, 2010). Web 3.0, with the introduction of augmented reality, intelligent tutoring system and 3d visual and gaming environments, has continued to challenge how faculty view their role and connection to the institution (Acikgul Firat & Firat, 2021; McKee, 2010). Though change is often difficult, and there is a perception that faculty struggle in a negative way to adapt to technological forces, the 2012 Babson Survey of Digital Faculty debunked the myth

that faculty fear growth in online education and technological advances that alter the tools used to conduct their craft. In fact, over 60% of the survey respondents reported more excitement than fear (Allen, Seaman, & Babson Survey Research, 2012).

Archambault, Wetzel, Fougler, & Williams (2010) surveyed faculty participants of a pilot professional development project utilizing technological educational tools. They found that the majority of faculty reported having a positive experience. Faculty noticed a shift from being the focus of learning, to becoming a facilitator of learning, and a technology helper as students took a more active role in their own learning (Archambault, Wetzel, Foulger, & Williams, 2010). Results from this pilot project seem to support the idea of a significant shift in perception of faculty role over the past few decades. McWilliam (2008) described a transition in faculty role from "sage on the stage" to "guide on the side" as pedagogy has moved from a teacher-centered to a student-centered approach (p. 263). Garcia (2015) described this shift in relation to popular learning theories. The faculty role in a connectivist construct is "faculty as peer" in sharing collaboratively opinions, viewpoints, and critique, to gain mutual understanding. This differs from the traditional role of "faculty as expert" and singular source of knowledge (Garcia, et al., 2015, p. 880). Distributed cognition recognizes that students are now expected to seek expertise from multiple resources to facilitate learning. This moves faculty from the single source of expertise to one of many sources of knowledge and expertise within the student's learning community (Garcia, et al., 2015). Quality teaching practice has become focused on faculty's ability to become coaches and mentors within their knowledge arena and propagator of facilitated course content navigation (Brown, 2015). McWilliam (2008) argued that the current learning environment requires an additional shift from "guide on the side" to "meddler in the middle" (p. 263). "Meddler in the middle" illustrates a learning environment that equalizes

faculty and student in a mutual quest for knowledge and understanding. Both parties are equally vulnerable and open to risk taking and experimentation, and equally engaged in critical evaluation. This shift in pedagogy reshapes the view of what it means to be a good teacher (McWilliam, 2008).

As previously stated, introduction of the internet and subsequent e-learning tools have provided the primary catalyst for the faculty development continuum. Faculty are gradually shifting their view of e-learning from a tool to provide information to students to a medium for reducing transactional distance between teacher and student, and finally as a tool for faculty to create collaborative space that enables the student to construct and develop understanding of course content (Gonzales, 2010). Online course faculty are more advanced within the shift and have achieved this advancement through use of higher-level flexible, innovative, collaborative, and empowering strategies than traditional classroom faculty have employed. For this reason, online faculty have become institutional leaders as they guide and mentor faculty through the transformation of traditional face-to-face learning to technology facilitated learning environments (Dewan & Dewan, 2010). Advances in technology are perpetuating a constant state of professional development in faculty as they work to utilize technology to its full potential in effort to maximize pedagogical impact (Amirault, 2012). Hassel (2011) predicted that digital tools will replace what separates excellent teachers from their peers. He predicted that digital tools will diagnose learning levels and match instruction to it. In the future, more than ever, successful teaching will be about more than delivery of core instruction (Hassel, Hassel, & Fordham, 2011).

Development of e-learning.

The development of e-learning pedagogy has rolled out in phases that align with shifting faculty beliefs about the purpose and value of technological tools. The first phase in the continuum is described as a time when faculty held the assumption that pedagogy used in the traditional face-to-face classroom could simply be transferred to an e-learning environment with no change in quality or student learning outcome (Cowie & Nichols, 2010). Faculty associated the function of teaching with lecture. The second phase involves the utilization of e-learning tools to structure learning differently (Cowie & Nichols, 2010).

Various opinions exist regarding faculty progress within phase two adaptation of e-learning pedagogy. Full adaptation requires the release of belief that technology is merely useful to supplement teaching, and the adoption of an understanding that effective technology use is required to facilitate student-centered learning (Ertmer & Ottenbreit-Leftwich, 2010). One significant barrier to adaptation is the number of technologies available for faculty use, and the time associated with researching options, learning the full capabilities of the technology selected, and what is required of faculty to gain proficiency (Si, Radford, Fabian, & Fan, 2016). Additionally, teaching in an e-learning environment requires increased knowledge of pedagogical practices within multiple variables of course planning, implementation of learning strategies and activities, and evaluation techniques (Ertmer & Ottenbreit-Leftwich, 2010). Faculty must possess technology-related course management skills. These skills allow for (1) selection of appropriate technological tools to meet instructional needs related to the curriculum and learning needs of students, (2) plans for teaching students to use the tools correctly, and (3) management of computer hardware and software. Lack of technology-related course management skills can prevent or prohibit incorporation of technology in pedagogy (Ertmer & Ottenbreit-Leftwich, 2010). Many institutions have attempted to compensate for gaps in faculty

technology-related course management skills through the unbundling of traditional learning tasks. Through the development of instructional design teams, or outsourcing course design to private companies, courses that have been built by content experts, instructional designers, and technical experts are sold in modules for use in online courses (Amirault, 2012).

Progress in the e-learning continuum has been slow and arduous for faculty. Opponents of modularized instruction argued that the unbundling of individual learning objectives falls short in the embodiment of larger course themes (Downes, 2004). In contrast, Hassel, Hassel, and Fordham (2011) argued that successful teaching has always been about more than delivery of core instruction and that both students and faculty need the transforming benefits of the e-learning movement. These authors asserted that effective adaptation of e-learning tools and pedagogy will result in great teachers being able to teach more students. Digital learning utilizes student data to personalize instruction and enables faculty to reach more students remotely. They believed increased capacity will translate to higher faculty wages and better career opportunities. Further, they predicted that use of digital learning technology will shrink the skill gap between average teachers and great teachers. Average teachers struggle to manage and meet the learning needs of students with varying needs and abilities. Digital tools enable teachers to reduce the complexity of tasks associated with personalizing instruction, which then allows them to focus on areas of strength in their practice (Hassel, Hassel, & Fordham, 2011).

The concept of personalized learning creates difference of opinion among faculty. Proponents of personalized learning believe that learning is more effective and impactful when delivered at the time when the learner wants to learn the subject matter rather than when the learner is required to learn (Downes, 2004). Many others believe that personalized learning can lead to quality and access issues. They fear that personalized content will narrow the scope of

learning to align with learner interests to such an extent that important fundamentals of more complex content will be missed (Downes, 2004). Further, when learning is "commodified" rather than delivered within a teacher-led system of learning, special interests may influence the quality of the learning experience. Many believe stratification of delivery will lead to the delivery of education of varying quality and price, where those with the financial means to pay will receive the best quality education. They fear that those who cannot pay will be left out (Downes, 2004).

Integration of digital tools.

Integration of digital tools into practice offers faculty both reward and challenge. When surveyed, most faculty report positive impact from technology when used for communication with students, connection within the academic community, creativity, and productivity. Time is the primary challenge reported. Because digital tools have increased avenues of communication with others, faculty work hours have substantially increased (Allen, Seaman, & Babson Survey Group, 2012).

A case study conducted among faculty at the University of Missouri-St. Louis in 2012 examined faculty adaptation to digital tools within the construct of online course design and practice. Results highlighted disparity in perception and reality related to faculty competency within online course environments. The majority of faculty reported no difference between teaching online and in the classroom. Most were satisfied with the level of support for online course design and implementation. The study found congruence between faculty and student assessment of the quality of teaching skills offered in online courses (Grant, 2012). Disparity appeared within faculty self-perception of competency with digital learning tools - specifically with learning management systems. The study found that while most faculty reported feeling

competent, most were not utilizing the learning management system to facilitate student success (Grant, 2012). In 2012, when the survey was conducted, most faculty did not know how to extrapolate data from the learning management system to assess student learning or to identify necessary academic interventions for under-performing students. They quite simply did not know what they did not know (Grant, 2012).

In a 2016 study examining changes in faculty perception about online instruction, authors Redman and Perry reported a shift in faculty perception and level of integration of digital tools. They reported that in 2002 faculty primarily used technology for course preparation of materials, activities and resources intended to obtain or increase student participation. By 2016, the faculty group represented in this study were utilizing technological tools in a more intentional way to enhance teaching rather than prepare for teaching. Faculty in this study had come to believe that student success was dependent on their competence using course embedded technology to support pedagogical practices (Redman & Perry, 2020).

These studies, focused on faculty perception regarding value and competency in the integration of digital tools in teaching practice, highlight a challenge and area of opportunity for academic leadership in higher education institutions. If fiscal resources are allocated to obtain digital tools, institutions must maximize the capabilities of the tool to achieve the best possible results for the institution and its students. Research would indicate that digital tools are largely under-utilized. This presents an opportunity for institutions. The challenge lies in maximizing the full potential and useful application of digital tools in response to institutional needs. Further challenge exists in leading ongoing faculty training and development in a culture of autonomy.

Institutional Forces in Faculty Experiences

While faculty work to respond to shifting pedagogy, institutional forces are creating further disruption by introduction of academic outsourcing, course standardization, as well as increased usage of adjunct versus tenured faculty.

Outsourcing.

Outsourcing in higher education is a philosophical departure from the traditional mindset regarding the role of faculty in designing and delivering an educational experience (Amirault, 2012). Proponents believe that outsourcing allows faculty to focus on their areas of specialization while leaving the routine work of course design and bundling of relevant content to various technical professionals. Benefits include increased efficiencies and improved accuracy and consistency of course materials (Amirault, 2012).

Others voice significant concern about the impact of outsourcing on the quality of education and the future of the teaching profession. Many fear that digital tools and content developed by non-faculty will cause courses to become sterile and less valued by students. Information accessed as basic facts and figures lack the availability of the rich meaning-making experience students receive when being guided by knowledgeable and experienced faculty (Amirault, 2012; Hassel, Hassel, & Fordham, 2011). Further, opponents argue that packaged content may inhibit the faculty member's ability to emphasize critical content which may contribute to disparate student outcomes (Amirault, 2012; Hassel, Hassel, & Fordham, 2011).

Another source of controversy surrounds hypotheses that the use of digital educational tools will functionally replace faculty. Some believe that educational technology and the use of instructional design and support teams will result in reduction in the number of faculty needed. Faculty feel they may be the next victims in a growing trend towards reduction in employees

across various industries in direct correlation to outsourcing and automation. Increased use of adjunct faculty in place of tenured faculty, and increased use of instructional design teams and content experts appear to validate those fears (Hassel, Hassel, & Fordham, 2011). In contrast, others see an advantage to faculty and students in implementation of educational technologies. If digital tools replace lower-level faculty tasks and responsibilities, then faculty will be able to focus on high-level pedagogy to deliver better results across a larger scale. Efficiency of scale, efficiency of budget, and use of higher-level skill sets often result in higher wages within the workforce. This would provide a direct benefit to faculty. Replacement of less effective faculty with those that utilize educational technologies within specialized pedagogy will result in an improved educational experience for students (Hassel, Hassel, & Fordham, 2011).

Use of non-tenure-track faculty.

Significant shifts in the ratio of full-time tenure-track faculty to adjunct, or non-tenure-track faculty has coincided with growth in availability of online programs and shrinking institutional budgets. The National Center for Educational Statistics (NCES) has been tracking the number of full-time and part-time faculty in degree-granting institutions of higher education since 1970. Review of the data shows a steady decline in full-time faculty coinciding with an increase in part-time faculty numbers. The percentage of full-time faculty teaching in higher education institutions dropped 23.9% from 1970 to 2018 (NCES, 2020). Amirault, in a 2012 study of the state of distance learning in higher education, reported a 2010 statistic from the American Federation of Teachers in Higher Education that adjunct or part-time faculty made up 47% of all faculty in United States public colleges and nearly 70% in community colleges (Amirault, 2012).

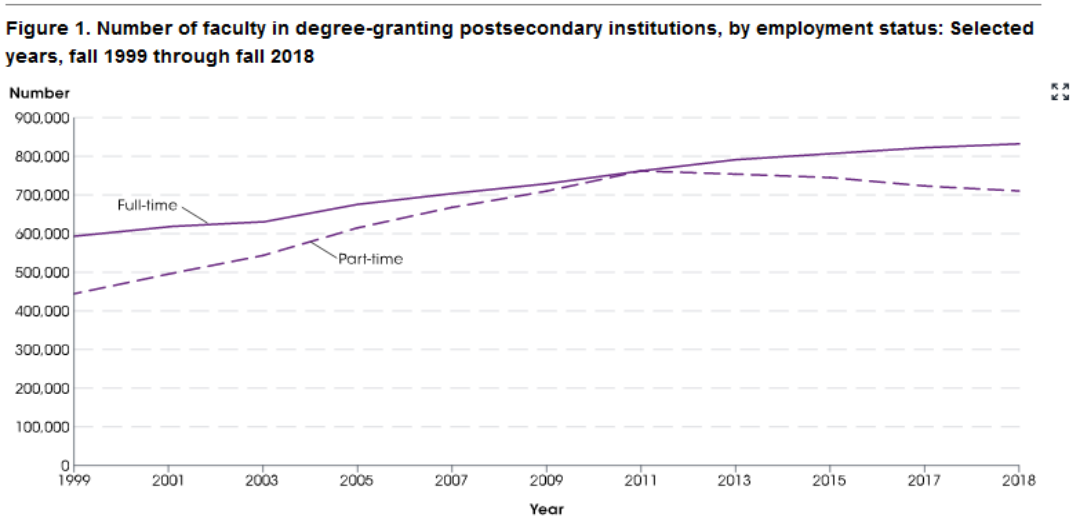


Figure 1. NCES condition of postsecondary faculty employment status tracking.

The National Center for Educational Statistics posted a report in May 2020 tracking hiring trends in all degree granting institutions in the United States. In the fall of 2018, 54% of all faculty in higher education institutions were employed at full-time status; 46% of faculty were part-time. Figure 1 demonstrates evidence that both employment groups enjoyed an increase in opportunity and rates of employment from 1999-2011, with part-time opportunities exceeding full-time opportunities at an approximate rate of 3:1 (NCES, Condition of Postsecondary Faculty, 2020). While not the only factor, it is likely that enthusiasm for, and willingness to teach in, non-traditional formats such as part-time or online, influenced this statistic. The Babson Survey group studied faculty feelings towards online education in 2012. They found that faculty from smaller two-year institutions felt more positive about online education than faculty at larger four-year institutions. Further study of multiple faculty subgroups concluded that faculty with longevity in teaching, and within traditional educational confines, were less enthusiastic about online education than their junior counterparts teaching in non-traditional formats (Allen, Seaman, & Babson Survey Group, 2012). It is logical to assume that a desire to

grow delivery of online courses, coupled with the differences in willingness to teach online courses between tenured faculty and non-tenured faculty, impacted the ratio of adjunct or part-time faculty to full-time, tenure-track faculty in United States public colleges during this time.

In 2011, the trendline splits, and full-time faculty continued to experience a 9% increase in employment while during the same period there was a 7% decline in part-time faculty employment across higher education institutions. One potential explanation for this split between full-time and part-time faculty is a shift in attitudes about online teaching. A 2015 study conducted by Terosky and Heasley found the majority of faculty who taught online had set aside their philosophical belief about the quality of online modalities in favor of practical necessity. Many faculty participants in the study cited a recognition of economic and student preference trends that contribute to the viability and growth in online education. These faculty believed it necessary to transition from in-person classroom teaching to online classroom teaching to retain relevance within their chosen profession (Terosky & Heasley, 2015).

Driven by massification of education and diversification of curriculum across academic programs to meet economic demands, faculty credentials and the qualifications required to achieve a teaching assignment have changed to allow for a growing number of non-PhD, non-tenured faculty to hold positions (Alleman, 2017). Institutions find cost savings in the scalability of standardized courses taught by any faculty member as opposed to courses created by full-time or tenured professors utilizing self-developed materials (Amirault, 2012). The reality that adjunct and part-time faculty compensation is considerably lower than tenured faculty compensation contributes to the economy of the practice. An adjunct pay rate is commonly one-fifth to one-third lower than the rate of pay full-time faculty receives (Lee, 2019). The fact that institutions find both administrative flexibility and a reduction in the cost of instruction when

using part-time faculty contributes to the growth of this practice across the industry (Maxey & Kezar, 2015). These economies of scale, however, are not without issue.

It is common practice to hire non-tenured faculty, considered experts in their field, to fulfill academic program needs that cannot be fulfilled with tenured full-time faculty. Work experience and expertise in the field makes the candidate attractive for specific assignments but creates disparate valuation among faculty role types. In a pilot study conducted in 2018, hiring decisions at the researched institution were made based on (1) teaching experience, (2) completion of a degree in the field of study matching the academic program, and (3) industry experience. According to Kezar (2018), just 38% of the survey respondents held the desired degree pointing to a consistent practice of hiring outside of ideal expertise parameters. Additionally, institutions wrestle to define how professional expertise translates across an academic discipline in relation to credentials needed to teach across a variety of subjects within the discipline (Meloncon, Englanc, & Iiyasova, 2016). As a result, these faculty enter the profession differently than tenure-track faculty, with less foundational knowledge of the academia and less support for their practice (Alleman, 2017). They are often treated poorly by the academic mainstream. The common narrative across academia is that part-time faculty are inferior to full-time faculty and that their low-quality teaching practice compromises the integrity of the institution at which they teach and diminishes the overall quality of the academic experience provided to students (Dolan, 2011). Meloncon, England, and Ilyasova in a 2016 report found that non-tenure-track faculty in technical and professional academic disciplines report a more positive experience than their counterparts in the liberal arts and sciences. The authors speculated that part-time faculty in technical and professional academic fields share a common professional background with full-time faculty. As a result, they are likely held in

greater esteem by full-time faculty than part-time faculty in other academic fields (p. 85). Technical and professional programs rely heavily on non-tenure-track faculty and will likely continue to do so. These non-tenured faculty are more likely than their peers in other academic disciplines to hold stable, full-time multi-year contracts (Kezar, 2018). This difference in experience seems to highlight the need for an approach to hiring that translates part-time faculty knowledge and expertise into quantifiable academic credentialing terms easily interpreted and understood by full-time tenure-track faculty.

Common hiring practices further compound the issues contributing to the devaluation of part-time faculty. Part-time faculty often receive assignments a short time before the class start date. This reduces preparation time available for faculty and may impact the way that the person interacts with the curriculum of the course. They often inherit course syllabi which may or may not align with the part-time faculty preferences for desired learning outcomes, reading, and course activities. Further, part-time faculty often do not have the ability to select their own textbooks because the late class assignment occurs past textbook ordering deadlines (Lee, 2019). Institutions often fail to offer orientation to new non-tenured faculty (Alleman, 2017). These faculty are often not provided the context of how the course they are teaching fits the academic program or how it aligns with other courses in the program. This creates repetition of content and activity that reduces the quality of the student experience and learning outcomes (Lee, 2019).

Because compensation rates for part-time faculty fall below that of full-time faculty, and class assignments are provided with short notice, part-time faculty frequently take on more than a full course load and often must work at multiple institutions (Lee, 2019). The ways that working conditions of part-time faculty impede fulfillment of higher education's mission for teaching, learning and student success is gaining visibility. More institutions are acknowledging

the adverse impact to students that occurs when part-time faculty do not have adequate course preparation time due to last minute hiring, are evaluated by methods that focus on student satisfaction surveys rather than teaching practice and have limited availability for student support due to the part-time nature of their assignment (Maxey & Kezar, 2015).

Visibility is also growing in relation to the systems and structures that place non-tenured faculty in competition with tenured faculty. This competition contributes to animosity between groups. Expectations of non-tenured faculty mirror expectations of tenure-track faculty but are devoid of the systems of support, reward, and recognition, as well as the opportunities for professional development enjoyed by tenure-track faculty (Kezar, 2018). It is common for non-tenured faculty to hold short-term contracts, resulting in diminished job security and satisfaction. This lack of job security results in a variety of reactions and behaviors. Some faculty in this situation take a minimalist approach to their work and contributions. Others work hard to increase professional visibility and increase their value to the institution by taking on tasks and projects that other faculty wish to avoid. This additional work routinely goes uncompensated. Others deploy a strategy to focus on their own work and avoid participation in tasks, projects, or institution issues that could otherwise draw negative attention and compromise the opportunity for continued employment (Waltman, et al., 2012). While full-time tenured faculty have a clear professional pathway for advancement and job security, non-tenure-track faculty are often unclear about their role and responsibilities. The pathway to advancement for non-tenured faculty is often ambiguous and unarticulated (Waltman, et al., 2012).

One of the key issues created by the increase in use of non-tenured faculty is slow erosion of faculty representation and voice in shared governance. This is an issue of diminishing returns. First, growing numbers of non-tenured faculty reduce the number of tenured faculty available to

participate in shared governance activities. In this environment, tenured faculty fear that non-tenured faculty lack the knowledge and investment in the institution necessary to adequately represent the faculty voice in shared governance discussions and decision making. Increasing membership of non-tenured faculty within faculty unions is creating a perceived shift in voice and power between non-tenure and tenure-track faculty. Second, tenure-track expectations and reward structures value research over teaching and other areas of faculty responsibility (Holcombe & Kezar, 2018). Incongruent expectations and reward structures further compounds the issue of faculty margin and creates additional pressure for tenure-track faculty participation within a system that neither supports nor rewards it. The result is dissatisfaction and dissonance between faculty groups.

Maxey and Kezar (2015) believed that higher education institutions are limiting their ability to consider viable alternatives when accepting the employment of large numbers of non-tenure-track faculty as both necessary and normative. These limitations are further exacerbated when various stakeholders accept non-equitable working conditions between faculty groups and systemic structures that breed conflict and discontent as "taken-for-granted institutional arrangements" (p. 567). Developing shared acknowledgement and understanding of issues and expectations related to differences in faculty roles is imperative if change is to occur (Alleman & Haviland, 2017). These authors asserted that for real change to occur, institutions must acknowledge existing arrangements and take advantage of the dissonance created by the contrast between these arrangements and the interests and ideas of stakeholder groups. It is in this space that opportunity for true and meaningful change exists (Alleman & Haviland, 2017).

Faculty Experience

Job Satisfaction.

The primary characteristics that contribute to job satisfaction seem to be universal to all types of workers. Most seek the respect of co-workers and compensation equal to their perceived value. What is distinct for faculty in institutions of higher education is the ability to achieve tenure as a benchmark of career success. Tenure is unique to higher education in the United States and carries with it a sense of prestige and job satisfaction unduplicated in other industries (Bozeman & Gaughan, 2011). It is important to note that non-tenure-track faculty are denied access to the opportunity to achieve the level of respect and recognition available to tenure-track faculty by the sheer nature of their employment contract (Bozeman & Gaughan, 2011).

In all employment sectors, a sense of belonging and the ability to enjoy the trust and esteem of colleagues is a strong performance motivator. Research indicates that, in higher education, faculty are highly motivated by a feeling of affiliation to the institution and connection to students (Dolan, 2011). Research also reveals the struggle that faculty experience when working in an environment that reportedly values collegiality but, in action, rewards individualism. Promotional policies that emphasize individual achievement and identity over collaboration contradict the affiliation needs required to motivate faculty performance (Kuntz, 2012).

Part-time faculty often report student connection as the primary performance motivator and often describe an absence of affiliation with the university. This has been a challenge for institutions seeking to establish loyalty among part-time faculty. The challenge is further exacerbated by the growth in distance education. Dolan (2011) suggested that administration

and part-time faculty agree that the majority of part-time faculty experience a feeling of disconnection to the institution, its culture, and its policies affecting students. Some administrators attempt to mitigate the issue by increasing the amount of face-to-face interaction between colleagues and by providing training and development opportunities (Dolan, 2011). This approach appears to cater to the factors impacting motivation in traditional faculty members and ignores the primary factors impacting institutional affiliation for part-time faculty. As it is widely reported that part-time faculty feel undervalued and often under-compensated, it seems logical that an alternative strategy is required (Dolan, 2011).

Part-time faculty and tenured faculty collectively report the same characteristics relative to job satisfaction. All categories of faculty gain satisfaction in teaching large groups of students (Waltman, Bergom, Hallenshead, Miller, & August 2012). All categories of faculty appreciate the flexibility of schedule that contributes to work-life balance. Part-time faculty overwhelmingly and consistently report a feeling of dissatisfaction with job security and workplace belonging. Many feel disrespected by tenure-track faculty and excluded from important work at the institution due to their contract status (Waltman, et al., 2012).

Short-term contractual employment contributes to a lack of job security and is a key contributor to dissatisfaction and reduced motivation (Waltman, et al., 2012). Existing literature provides evidence that part-time faculty report three responses in relation to job insecurity. Some invest less effort into teaching students and to activities that contribute to institutional priorities. Others over-commit, with a goal of increasing their personal perceived value to the institution. These faculty take responsibility for undesirable work that others do not want. Still others attempt to maintain anonymity by completing the assigned work and nothing more. They

believe reassignment is more likely granted through cooperation versus challenge (Waltman, et al., 2012).

Burnout.

Burnout is described as a chronic condition resulting in emotional exhaustion, depersonalization, and reduced personal accomplishment. Burnout diminishes faculty effectiveness and contributes to the erosion of job satisfaction (Enders et al., 2015; Frisby, Goodboy, & Buckner, 2015). In a 2017 study, Yorulmaz, Colak, and Altinkurt further defined burnout as the psychological reaction to negative experiences in the workplace and unpacked the individual dimensions of the condition. Emotional exhaustion is directly correlated to individual feelings of stress. Depersonalization is described by Yorulmaz, et al., (2017) as failing in the interpersonal dimension of engagement. Characterized as a coping mechanism, depersonalization manifests in negative or indifferent behaviors in times of work pressure or overload. Reduced personal accomplishment is related to negative self-perception of an individual's ability to be successful and productive in their work.

These three dimensions of faculty burnout, (1) emotional exhaustion, (2) depersonalization, and (3) reduced personal accomplishment, appear in different facets of the faculty role. Yorulmaz et al., (2017) described the connection between emotional exhaustion and individual feelings of stress. In multiple studies, faculty correlate a heavy workload to feelings of personal stress and emotional exhaustion (Enders et al., 2015; Frisby et al., 2015). The quality of relationship and interaction faculty have with students has the greatest impact on the faculty experience with emotional exhaustion and depersonalization. This is particularly true in conflict (Frisby et al., 2015). Interestingly, the impact of conflict varies depending on the student approach to expressing dissent, and a faculty's perceived ability to respond in a way that

preserves self-efficacy. When students verbally express dissent directly to faculty, faculty may explain pedagogy and seek resolution (Frisby et al., 2015). Faculty feel greater self-efficacy when able to engage in this kind of conversation with students. Expressions of student dissent, where faculty feel disrespected or without the opportunity for resolution, reduce self-efficacy and contribute to faculty burnout (Frisby et al., 2015).

Characteristics of the faculty role that influence self-efficacy and burnout differ slightly for faculty who teach online. A 2012 study conducted by Allen, Seaman, and Babson Survey Research examined faculty opinions regarding the impact of the emergence of digital communication tools in their practice. An equal percentage of faculty reported increased personal stress as did faculty reporting no change in perceived stress (p. 31). Faculty teaching online report less personal stress because of flexibility in schedule, convenience related to the ability to choose their place of work, and satisfaction derived from the opportunity to explore new teaching pedagogy (Portugal, 2015).

Existing research studies demonstrate a positive relationship between quality of student and faculty interactions and faculty self-efficacy (Frisby et al., 2015). Online instruction requires distinctly different pedagogy than face-to-face instruction and inherently involves a greater degree of challenge in relation to creating positive student and faculty relationships (Portugal, 2015). It requires a more individualized approach to student learning which impacts instructional design, course preparatory time, and methods used to provide timely instructional support and feedback for students regarding their performance in class (Portugal, 2015). Management of student behaviors and response to student dissent can be more challenging in this remote environment (Portugal, 2015). This contributes to greater risk for faculty burnout and potential feelings of reduced self-efficacy.

Motivation and self-efficacy.

The changing landscape in higher education is challenging tradition faculty roles. Students and administrator expectations regarding faculty knowledge and skill level is rising. The pressure for faculty to develop new pedagogical responses is high (Reid, 2014). Efforts to implement technology strategies are seemingly met by faculty with open resistance or disregard. There are a variety of valid reasons associated with common resistance themes that must be acknowledged and addressed by academic leaders and administration. As in any approach to change, attention must be given to shifting cultural narratives to support the future environment and ensuring that faculty and staff are provided the appropriate tools and training to allow for success. Review of incentive and reward systems to confirm alignment with revised personnel expectations and institutional goals is necessary for successful implementation of change efforts. One of the largest detriments to successful implementation of technological initiatives in higher education today, is that rewards and incentive programs for faculty are based upon traditional models, rather than models that support changing expectations (Reid, 2014).

There is a strong correlation between faculty feelings of self-efficacy, desired levels of recognition and reward, and faculty attitudes and resistance to the adoption of emerging digital tools and online education (Chiasson, Terras, & Smart, 2015). Variations in faculty motivation to adopt emerging technologies into practice is seemingly less connected to their level of interest, and more connected to their perceived reward in exchange for effort. In a 2012 study conducted by Allen, Seaman, and the Babson Survey Group, over 60% of faculty surveyed reported excitement about introduction of e-textbooks and e-resources into practice. The majority also reported favorable attitudes towards how faculty roles are shifting from lecture to coaching. Although most faculty expressed positive views about emerging technologies, just 43% of

faculty surveyed had put them into action. Faculty reported inequitable rewards compared to the amount of time and effort necessary to integrate emerging technologies into coursework. A 2015 study conducted by Chiasson, Terras, and Smart showcased these conflicting beliefs among faculty tasked with moving courses from face-to-face to online instruction. Faculty in the case study referenced a belief that it takes more time to develop an online course than it does a face-to-face course, and that consequently, additional compensation should be awarded. Yet, at this institution and many others, there is a lack of administrative support for compensation infrastructure applied to this task.

Considering negative faculty perceptions about administrative support and recognition and reward programs, self-efficacy is becoming increasingly important when considering new technology initiatives. Studies have found those with high self-efficacy are more likely to expend effort and persist in their work when faced with negative expectations or outcomes (Horvitz, Beach, Anderson, & Xia, 2015). Further, there is a significant relationship between faculty emotional intelligence and self-efficacy and the faculty's pedagogical success in the classroom (Dev, Nair, & Dwived, 2016). Students are entering college with advanced digital skills; and technology is used broadly for all forms of research, information gathering, communication, data processing and storage. As a result, the pace of learning for faculty and course developers must also increase (Greener & Wakefield, 2015). Most instructional technologies are not intuitive because they were not originally designed for education. This reality, when added to the abundance of technologies and the rapidly changing technical terrain, makes it difficult to keep skills current (Reid, 2014).

Kamali (2013) suggested that faculty's primary purpose for adopting technology in the classroom is improved productivity in faculty and student communication. Martin, Polly, Coles,

and Wang (2020) concurred that the majority of faculty technology adaptation is in response to a need for increased communication with students. However, a study by Martin, et al., (2020) asserted that faculty's main consideration of digital technologies is in relation to pedagogy. Faculty rank the importance of technology based on its perceived importance to teaching (Martin, et al., 2020). It is common for institutions to attempt to implement new technology without making a clear argument for the pedagogical benefit of the technology. Discussion and training efforts are typically focused on teaching faculty how to use the technology. This leaves faculty to discover on their own the connection to pedagogy and student learning (Greener & Wakefield, 2015). Administrators who wish to implement e-tools will have greater success in influencing faculty cooperation and full adoption if able to demonstrate utility and ease of use for faculty as it relates to pedagogical issues (Findik & Ozkan, 2013). Further, the Martin, et al., (2020) study highlighted the need for institutions to develop professional development opportunities, and invest in technological support services, to increase faculty competence with technologies and their belief in their ability to quickly resolve technological issues that arise.

Change is inherently difficult for many. Use of e-learning tools shifts faculty roles from teacher-centered to student-centered pedagogy. Further, it requires faculty to shift from being the primary source of knowledge transferred directly from faculty to student, to becoming the "guide on the side" (Kamali, 2013, p. 5) or coach supporting students as they discover knowledge from alternative sources. Faculty who are unprepared to step into this altered role are more likely to flounder and revert to comfortable pedagogy in which they and their students are clear about roles (Kamali, 2013). Virtual technologies are viewed as a threat to the face-to-face relationship with students that is so highly valued by faculty. Technology may contribute to increased transactional distance between faculty and student, which then contributes to feelings

of dissatisfaction and loss of control. Many reported feeling discomfort with technologies when they prove unpredictable and when challenging issues arise in the classroom. Lack of preparedness to successfully manage technological issues can contribute to faculty feeling that they appear less capable to students (McNaughton & Billot, 2016).

In the Chiasson, Terras, and Smart (2015) case study, faculty reported a feeling of unpreparedness for the shift in role created by the transition to an online delivery platform. When paired with perceived lack of administrative support, assistance, and training, the feeling of unpreparedness impacts the level of confidence individuals have in their ability to accomplish the task at hand. In this study, when faculty accepted perceived barriers and worked to overcome them, results were positive, including increased faculty feelings of self-efficacy. Faculty came away from the project with greater confidence in their teaching ability and felt that they had become better teachers because of a shift in role that caused students to take more responsibility for their learning. This would suggest that lack of administrative support, training, and appropriate compensation for changing expectations is not the only barrier to successful implementation of technological initiatives. Faculty self-efficacy and motivation are equally important.

Chapter III: Methodology

Introduction

The purpose of this study was to illuminate the vocational faculty voice through description of experiences with, and perceptions about, the incorporation of emerging technology within classroom practice. The researcher sought to (1) discover the experience and perceptions of vocational faculty regarding role, motivation, and feelings of self-efficacy within a fluid academic community, (2) gain an understanding of the degree to which the adoption of emerging technologies is influencing pedagogical methods, and (3) discover what types of institutional support are most helpful to vocational faculty when experiencing change. Much of existing literature focuses on the liberal arts faculty experience. This study was intended to address the gap in existing literature and to allow that vocational faculty experiences may differ from liberal arts faculty experiences in distinct and meaningful ways.

This chapter is divided into the following sections: Theoretical Framework, Research Method and Design, Research Questions, Researcher Disclosure, Sample, Instrumentation and Protocol, Data Collection, Data Analysis, Limitations, and Ethical Considerations.

Theoretical Framework

Creswell (2014) introduced an inductive model for qualitative research in which theory is formed by data analysis and the conclusions formed by what is represented in the data. As described by Creswell, this researcher employed an inductive process beginning with the process of gathering information from study participants and identifying patterns within the data that were then organized into categories and themes. These themes were then compared with existing literature related to the research topic. Self-determination theory emerged as the theoretical framework that best aligns with data collected within this study.

Figure 2. Inductive logic model for qualitative research. Adopted from "Research Design Qualitative, Quantitative, and Mixed Methods Approaches" by J. Creswell (2014), p. 66.

Multiple studies have been conducted to examine higher education faculty participation in, and resistance to, the integration of digital technology in their practice. A 2020 study published by Martin, Polly, Coles, and Wang found faculty resistance the largest barrier to technology adoption. Faculty use technological tools to solve problems and improve the teaching process. These authors reported that resistance to technology adoption occurs when faculty are unable to identify a pedagogical use for available or recommended technologies. Similar to the definition and application of self-determination theory, Martin, et al., (2020) identified three readiness factors that must be present to facilitate faculty use of technology, (1) importance, (2) competence, and (3) motivation. Faculty were motivated to adopt digital technologies when they could identify a true benefit to learning. Further, faculty indicated preference for technologies that helped to facilitate increased collaboration among students and an opportunity for critical thinking via improved access to resources. Lastly, faculty ratings of the importance of digital technologies in this study aligned with their feelings of competence in using the tool.

Another study conducted by Redman and Perry (2020) provides additional evidence of the connection between faculty's measure of technology importance, feelings of competency, and their willingness to integrate digital technologies into their teaching practice. This study

tracked changes in the perceptions of online graduate-level faculty from 2002, to 2007, to 2016. It marks a shift in the importance that faculty placed upon technologies to support student interaction between 2002 and 2016 when a newfound importance was assigned to technology that supported student self-directed learning. For the faculty in this study, the shift aligned with a shift in faculty role from teacher-centered director of facilitated learning to a student-centered pedagogy. This shift was supported by the integration of technology compatible with pedagogy that promotes self-learning. The study highlighted the centrality of faculty competency in the quest to integrate technologies within pedagogy. The authors reported the challenge for faculty, common to this and multiple other studies, in developing and maintaining appropriate knowledge of technology parameters and the ability to troubleshoot technical difficulties.

A 2017 study conducted by Chang, et al., (2017) examined the link between self-determination theory, innovation theory, and faculty willingness to adopt or reuse e-learning systems. The study sought to identify what impact intrinsic and extrinsic motivational factors had on faculty attitudes towards e-learning systems and their willingness to adopt it or continue to use it. The authors of the study examined e-learning system adoption and e-learning system continued-use separately and then compared the two groups for similarities and differences. For this study group, perceived autonomy and competence had a positive effect on intrinsic motivation. Faculty who possessed experience with e-learning systems also felt more confident and willing to continue using it. What was novel about this study's findings was evidence that intrinsic motivation factors drive faculty to continue using e-learning systems, and extrinsic motivation tactics and organizational policy had a negative impact on faculty attitudes about using e-learning systems. The opposite was true of the e-learning system adoption group. For

this group, extrinsic motivation factors had no impact on faculty attitude, but had positive impact on their willingness to adopt e-learning systems in their practice (Chang, et al., 2017).

Stupinsky, Hall and Daniels (2020) postulated that self-determination theory describes a human motivation continuum culminating in intrinsic motivation. They went on to define intrinsic motivation as innate satisfaction in performing certain activities occurring only when three core psychological needs are satisfied: (1) autonomy, (2) competence, and (3) relatedness (Stupinsky, et al., 2017). The authors suggested that when faculty social-environmental concerns are resolved in relation to work/life balance, clear expectations for tenure or promotion, and collegiality among coworkers, their psychological needs for autonomy, competence, and relatedness will also be satisfied, thereby resulting in intrinsic motivation and increased success in teaching and research activities (Stupinsky, et al., 2017). Skewes, et al., (2018) took this concept a step further and wrote that the self-determined experience, defined within self-determination theory at the point where autonomy, competence and relatedness intersect, is central to human motivation, performance, persistence, and overall well-being. Self-determination factors identified and defined within these two studies appeared regularly within the data collected in this study. Further, these factors intersected with data collected about faculty integration of digital technology so frequently that self-determination theory emerged as a relevant and informative theoretical framework for the study.

Research Method and Design

Qualitative research methodology was most appropriate to the purpose and goals of this study. Qualitative research methodology utilizes inquiry to discover how individuals experience, interpret, and make meaning of the world in which they live (Merriam, 2009). In alignment with qualitative research methodology, this study was designed to document individual vocational

faculty experiences and the resulting interpretation of meaning developed through those experiences. The researcher sought to understand how the meaning assigned to vocational faculty experiences with emerging technology influenced feelings of self-efficacy, affected definition of role, and impacted teaching practice.

Qualitative research does not begin with a theory to prove or disprove, but rather focuses on use of inquiry and analysis to develop theory about a phenomenon experienced by a group of individuals (Merriam, 2009). In the same spirit, the researcher approached the study with the goal of identifying patterns and themes in which the phenomenon could be fully described and potentially generalized across faculty groups. While it was possible during the discovery and analysis process that experiences and perceptions of individual vocational faculty in the study may correlate with experiences and perceptions reported in existing literature, it was not appropriate to begin this study with a fully developed theory to validate.

Merriam (2009) defined a case study as a bounded system in which clear parameters are established around a single entity or unit to be studied. In line with Merriam's definition, this case study design focused on the individual experiences of select vocational faculty within a single technical and community college in Minnesota. Selection of an institution that specialized in both liberal arts and technical career academic programs was instrumental to the purpose of the study. The opportunity to learn about the experiences of technical career program faculty, within the walls of a single institution that must balance the competing demands and contrasting needs between liberal arts and technical career program needs, enabled examination of perceived differences between liberal arts and technical career program faculty. Instrumental case studies attempt to redefine a generalization (Merriam, 2009). This bounded case study was instrumental in design since the data collected about study participants experiences and perceptions related to

emerging technology can potentially contribute to greater understanding of the general population of vocational faculty members across the higher education industry.

Research Questions

The purpose of this qualitative case study was to understand how vocational faculty are affected by emerging technology. The study intended to fill the gap in literature regarding vocational faculty experience by answering the following questions:

1. In what ways are emerging technologies shaping pedagogy in the vocational classroom?
2. How has the integration of e-tools in pedagogy altered faculty perceptions of role, motivation, and self -efficacy? If not at all, why is that?
3. What experiences and institutional support are most helpful to vocational faculty when facing change?
4. In what ways does the vocational faculty experience differ from what is reported in the literature about the liberal arts faculty experience?

Researcher Disclosure

The researcher has a professional connection to the research site and a basic understanding of its organizational structure and culture. The researcher referenced this connection with administration when seeking administrative approval for the research project and with potential study participants during recruitment. Reference to the researcher's past role as a long-time university partner and her subsequent familiarity with the institution, its programs, and faculty and staff was used to establish trust while orienting stakeholders to the research study and personalizing the recruitment process.

Additionally, the researcher is an employee of the college and university system in which the research site holds membership. Because of her leadership role, the researcher is equipped with information and an understanding of organization structures and systems that have the potential to impact the phenomenon of the study and influence participants willingness to disclose information. The researcher had first-hand experience navigating the dissonance created by misalignment of administrative expectations for technology adaptation and faculty willingness and ability to meet those expectations.

Self-disclosure is a process in which the researcher seeks to develop an unbiased attitude toward the research problem through consideration of the researcher's background and attitudes before conducting interviews (Patten, 2014). Through a process of self-disclosure, the researcher carefully considered how her professional relationship with study participants and knowledge about the research institution culture, systems, and organizational structure might create bias through all stages of the study. Bracketing is the action of revealing a researcher's own experience with the phenomenon to be studied prior to interviewing participants (Merriam, 2009). In this case, bracketing was accomplished through discussion between the researcher and a colleague. The researcher acknowledged the existence of certain opinions and attitudes formed through exposure to the research problem. In response, protocols were developed within data collection and analysis to reduce bias and maintain the integrity of the study.

Research Sample

Sampling Design.

The population for this bounded case study consisted of faculty members within a single technical and community college in Minnesota. Purposive sampling of faculty based on location, availability, and characteristics of participants was used to conduct this study (Orcher, 2014). The

sample consisted of five technical career program faculty who have (1) taught online, (2) incorporated emerging technology into their teaching practice, or (3) both taught online and incorporated emerging technology into their practice within three years of the time that the study was conducted. Recency of experience within the sample provided an opportunity for thorough examination of the phenomenon.

Participants were invited to choose a location for an interview, to include tours of classroom and lab spaces, and to provide course syllabus and materials as applicable to the purpose of the study. All interviews were conducted in-person. Four of five interviews were conducted in the faculty workspace. One interview was conducted at a public location of the participant's choosing and of mutual convenience for participant and researcher.

Recruitment of Sample.

The researcher met with the Vice President of Academic Affairs at the research institution to seek permission to conduct a study among the institution's vocational faculty. A brief overview of the purpose of the study, research design and protocol for consent and confidentiality was provided. The researcher provided the Vice President of Academic Affairs a copy of the participant recruitment email template and consent form for review. A letter of approval was received by the researcher along with instructions to utilize the Academic Dean for assistance with faculty recruitment.

The researcher met with the Academic Dean who oversees vocational academic program faculty at the institution. Presentation of the purpose of the study, research design, protocol for consent, and assurance for confidentiality was repeated. The recruitment email was provided to the Academic Dean for use in introducing the study to faculty and encouraging participation. Full approval and agreement regarding a plan for distribution of the introductory email was

obtained shortly before faculty went off contract for the summer. Distribution was delayed so that the introduction could align within the contract period and allow better visibility among faculty. Midway into fall semester, academic leadership at the research institution provided the researcher a complete list of career and technical education faculty and facilitated an introduction of the researcher and project to the faculty group.

One faculty member volunteered to participate in the study. This faculty member fully met the desired criteria established for the sample. Three additional participants were recruited by the researcher after careful consideration of the field of study in which they teach and longevity of career with the research institution. The final participant was recommended by another participant during the research interview based on the participant's suitability for the purpose of the study.

Description of Sample.

At a glance, career and technical academic programs represented in the study appear to vary greatly in potential use of technological tools. Programs geared toward machine-based and mechanical careers stereotypically do not include technological tools as they historically involve learning via mechanical machines and tools in a shop environment. In contrast, in the age of technological advancement, one would expect career and technical programs geared toward science-based careers or occupations conducted in professional office settings to involve an abundant use of technological tools. To validate standard assumptions and examine the variability of use of emerging technology within career and technical education programs, research participants were selected from two mechanical careers programs, two professional career programs and one science related career program. Longevity of faculty role at the research institution was an additional consideration in selecting participants, as existing literature

suggests variation in definition of role, motivation, and feelings of self-efficacy depending on the faculty member's career stage. Among participants selected for this study, two participants have taught within the same academic program for over 25 years, two participants are mid-career with 10 to 15 years of teaching experience, and one is a relatively new faculty member with less than 10 years of faculty experience.

Related to gender, 20% of the sample population was female and 80% male. This is disproportionate to the gender composition among total career and technical faculty at the research institution, where female faculty represent 46% of the whole. Development of a sample population to mirror this institutional gender makeup would have resulted in disparate representation of professional career programs and mechanical career programs. The researcher determined gender composition among faculty to be less valuable than academic program composition for the purpose of the study.

Instrumentation and Protocol

The researcher conducted recorded, semi-structured individual interviews with participants. After each interview, a field memo was created recording the researcher's reactions, perceptions, interpretations, biases, and expanded inquiry about the topic. In addition to individual interviews, the researcher examined available course materials such as syllabi, course assignments, and course outlines to identify pedagogical techniques that differ from face-to-face classroom pedagogy.

Interviews were structured within the following protocols:

- Introductions
- Researcher self-disclosure
- Verification of informed consent

- Assurance of confidentiality
- Review of research goals
- Discussion of interview structure and estimated length
- Obtainment of permission to record

The interview questions listed below were designed to reveal individual experiences, and the perceptions and meaning assigned to these experiences among participants. The researcher was intentional in selecting a semi-structured interview format to allow for flexibility in the conversation for both researcher and respondent.

Table 1

Interview Questions

Research Objective	Subcategory/Theme	Question
Explore pathway that brought participants to profession, uncover motivation to teach and determine if correlation exists between motivating factors and career longevity	Motivation – intrinsic and/or extrinsic	1. Tell me about yourself (background, training, years of teaching experience, longevity at CLC, academic program). 2. Why did you decide to become a college instructor? 3. What do you most enjoy about teaching? Has this remained constant over time? 4. In what ways has your job changed over time?
Determine faculty experience with discovery and valuation of available technology, experience with integration of technology in pedagogy, and feelings of self-efficacy throughout. Examine effective	Experience with emerging technology, Self-efficacy, Institution Support	5. Tell me about the different forms of technology you use in your classroom and lab. 6. How do you discover what technology is available for your use? 7. What is your process to assess the value and relevancy of technology that you are considering for use in your practice? 8. What steps do you take to become proficient with technological systems? 9. When you identify technology to utilize, how do you incorporate the technology in your classroom and lab?

institutional support and uncover gaps		10. In what ways has emerging technology impacted your teaching practice? In what ways does it help and/or hinder your work?
Reveal experience with existing support systems, particularly reward and recognitions systems. Determine to what extent institutional support contributes to faculty motivation	Institution support, Motivation	11. What incentive and support are offered by the institution for faculty who wish to incorporate emerging technology in their academic program, courses, and labs? 12. What forms of institutional support are most helpful to you?
Examine definition of role and determine if career longevity, or external and internal variables impact how faculty define their role.	Role	13. How would you describe your role as teacher? Has this remained constant over time? 14. In what ways, if any, has the use of technology in the classroom and lab affected your teacher role? 15. Related to your teacher role and practice, what are the most significant challenges that you are facing now and think that you will face in the future?

Data Collection

Potential participants received an invitation email from their Academic Dean that introduced the study and the researcher. Two weeks after that email, the researcher utilized the contact list provided by administration to place personal calls to select faculty based upon their perceived suitability to the study. The conversation followed the content of the invitation email found in Appendix B. Participants were informed of the purpose for the study and told of the specific characteristics that the researcher felt they possessed that aligned with study criterion and made them ideal for the experience.

When agreement for participation was secured, the researcher outlined the process and described next steps. Contents of the consent form found in Appendix C were discussed. Participants were once again invited to participate in an interview, at a location of their choosing and scheduled when convenient. Participants were instructed to plan for a one-to-two-hour experience. The researcher invited each participant to share course materials, syllabi, etc. as deemed relevant to the purpose of the study.

Consent forms were emailed to each participant and collected prior to the interview. Interviews were conducted at a location selected by the participant and on a date that the researcher was available to travel to the chosen location.

After each interview, the researcher created a memo to record initial impressions and questions created for the researcher within the interview experience. Identification of themes and patterns along with notation of potential meaning was included. An iterative process was used in the interview process to explore shared experiences within the phenomenon and test the dependability of data collected. For example, the first interview participant shared that the institution hosts an annual faculty professional development day focused on technology. In all interviews that followed, the researcher included a question specific to that professional development event and captured individual participant reactions and opinions regarding their experience with the event.

Data Analysis

Participant interviews were transcribed by a confidential transcription service. When transcripts were received, the researcher read through each transcript and compared each to the interview recording to ensure accuracy. Occasional disambiguation from cross-talking and background noise resulted in minimal edits to transcripts. The researcher removed names, and to

the extent possible, program identifiable information, to protect the confidentiality of study participants. Once the accuracy of the transcripts was confirmed and the confidentiality of participants was preserved, the researcher listened to interview recordings while reading transcripts to gain a sense of the scope of the data collected.

In the first level of analysis, the researcher performed a content analysis of the data. Merriam (2009) described content analysis as a quantitative process of raw data analysis that seeks to identify variety and frequency in phrases and patterns of speech while looking for insights into key topics. The researcher coded the data in alignment with the topics contained within the research questions. This activity ensured that interviews captured data that fully informed the intended purpose of the study and that there were no gaps in the discovery process. Data was sorted into four primary content areas and then analyzed by code to identify similarities and disparities of experience among individuals.

The researcher listened to interview recordings while reading through individual transcripts three more times. During this round of analysis, the researcher coded interview segments with words and phrases that described the content or theme of the segment. This resulted in 13 separate codes that expanded upon the four primary content areas identified in first level analysis.

Interview recordings and transcripts were reviewed three more times. As recommended by Creswell (2014) in the steps for qualitative research analysis, each subsequent review was focused on generating a general understanding of the information collected and reflection upon its meaning. Words and phrases were synthesized into 10 themes. These themes describe the scope of data collected as it relates to the research questions and offers a depiction of the study

participant experience describing the phenomenon. Themes are described in detail in the Chapter Four.

Limitations

This case study involves limitations that may negatively affect the results of the study. Readers should be aware of these limitations when considering the totality of the study and the potential to generalize results.

The primary limitation of this study was the sample size. Because this case study involved a single community and technical college and restricts faculty participation to those who have incorporated technology within their practice within the three years preceding the study, the sample is small. The small sample may not be fully representative of the vocational faculty voice and experience at the institution. Further, the size of the sample inhibited the ability to generalize the study to other higher education institutions. A larger sample drawn from vocational faculty at the research institution may enhance the ability to generalize results at the institution. A multi-case study incorporating several institutions and sample groups may expand the potential for generalization across the industry.

Faculty contracts and fiscal considerations created inherent restrictions in both faculty and administrative practice. Those restrictions may influence or bias faculty perceptions of their lived experience with emerging technology. Furthermore, the researcher is employed by a Minnesota State Colleges and Universities institution within the region. Despite research self-disclosure and assurances of confidentiality, faculty participants may have filtered or limited their response to interview questions in protection of their home institution, or from fear of personal or institutional exposure, thereby limiting the depth and relevance of information gathered.

Ethical Considerations

Several ethical considerations were identified and addressed within the framework and execution of this study.

Participant Protection.

A responsibility toward beneficence was emphasized in relation to protection of the research site and research participants. The researcher gained approval to conduct the study from administration at the research site. This included a phone interview with the Vice President of Academic Affairs in which full disclosure of research methods and activities, planned participant protections, and ideas about how the research project could affect the work of the research site were provided. Together, the researcher and administrator negotiated the faculty participant recruitment process. It was agreed that the Academic Dean associated with the population of faculty to be studied would assist the researcher with an initial introduction of the researcher and research study via email. Both the invitation email template and informed consent form were vetted and approved by the administrator before permission was granted for the researcher to proceed.

The researcher recognized the potential to collect information from study participants that could reflect negatively upon faculty study participants and other faculty or the academic leadership at the research site. Utilizing the Informed Consent Form found in Appendix C, special care was given in both the recruitment process and within interview protocol to facilitate a full discussion of informed consent and protocols developed to ensure participant protection. Particular attention was given throughout the study to ensure that the benefits of participation outweighed the burden for individual participants as well as for the study site. Interviews were scheduled during non-intrusive times and accommodated individual participant needs.

Participant confidentiality was maintained throughout the study. Researcher self-disclosure was added to the interview protocol to provide participants assurance of the protections put in place to maintain confidentiality throughout the study and within the written report. Interview recordings were transcribed by a transcription service. Individuals performing the transcription service had no access to identifying information and are held to a professional standard requiring the preservation of confidentiality in the service performed. Data was coded to remove the threat of identification by individuals other than the researcher, and no individual name or identifiable characteristics were included in the written report. All data collected from this study are retained in the secure and private files of the researcher. These records will be destroyed upon full approval of the researcher's dissertation by the university.

Researcher Self-Disclosure.

The researcher has a professional connection to the research site and a basic understanding of its organizational structure and culture. This connection was referenced while gaining administrative approval for the research project and during recruitment of study participants. Reference to the researcher's past role representing a long-time university partner and subsequent familiarity with the institution, its programs, and faculty and staff was used to establish trust while orienting stakeholders to the research study and personalizing the recruitment process.

Many characteristics of the researcher's experience had the potential to corrupt the research project process and results. The researcher has first-hand experience navigating the dissonance created by misalignment of administrative expectations for technology adaptation and faculty willingness and ability to meet those expectations. As an employee serving in a leadership role in the college and university system in which the research site holds membership,

the researcher has had the opportunity to develop opinions and assumptions about the phenomena of this study. For example, a primary assumption held by the researcher was that all faculty possess a certain degree of resistance to incorporating emerging technology in pedagogy and that this resistance stems from a combination of motivation and self-efficacy factors and issues within the faculty relationship with institution leadership.

In preparation for data collection and analysis, the researcher participated in a process of bracketing to uncover areas of bias. Following discussion with a neutral colleague regarding the purpose of the study and existing opinions and bias held by the researcher, the researcher adjusted data collection and analysis protocols to mitigate bias and preserve the integrity of the study.

Reliability, Validity and Trustworthiness.

Dependability of data and results is important. Following the bracketing process, the researcher refined the semi-structured interview questions to improve upon the flexibility of response for both the participant and researcher. Questions became more open-ended and generalized to enable the response to go in whatever direction the participant desired. Throughout the interview process the researcher tested the dependability of the data collected by utilizing information shared in prior interviews to formulate questions for subsequent interviews, with the goal of validating shared experiences within the phenomenon.

Because this was a case study with a small sample known to the researcher, removal of identifiers within the data was insignificant in the analysis process. It is significant to note, however, that no attempt was made during data analysis to generalize findings or to leave out or misrepresent data. The researcher utilized the data collected without adding information from other sources to fill gaps or expand topics. Enumeration is the measure of how many

participants mention important themes (Orcher, 2014). The process of enumeration was used to ensure reliability, validity, and trustworthiness of data collected. Enumeration data was considered representative of the phenomena and included in study results. Non-representative data was also included. This case study was intended to study the lived experience of a small set of vocational faculty members at a mid-sized community college in Central Minnesota.

Chapter IV: Results

Introduction

The purpose of this study was to illuminate the gaps that exist in available literature concerning the vocational faculty experience with emerging technologies. The study examined the integration of these technologies within pedagogy and how emerging technologies impact vocation faculty perceptions of role, motivation to teach, and feelings of self-efficacy. Participants were invited to choose a location for an interview, to include tours of classroom and lab spaces, and provide course syllabus and materials as applicable to the purpose of the study. The study sought to answer the following questions.

1. In what ways are emerging technologies shaping pedagogy in the vocational classroom?
2. How has the integration of e-tools in pedagogy altered faculty perceptions of role, motivation, and self -efficacy? If not at all, why is that?
3. What experiences and institutional support are most helpful to vocational faculty when facing change?
4. In what ways does the vocational faculty experience differ from what is reported in the literature about the liberal arts faculty experience?

Discussion of Sample

A sample of five technical career program faculty who had, within the last three years, taught online, incorporated emerging technology into their teaching practice, or both taught online and incorporated emerging technology into their practice participated in this study. Two participants have taught within the same academic program for over 25 years; two participants are mid-range within their careers, with 10 to 15 years of teaching experience; and one was a relatively

new faculty member with less than 10 years of faculty experience. The sample population was 20% female and 80% male.

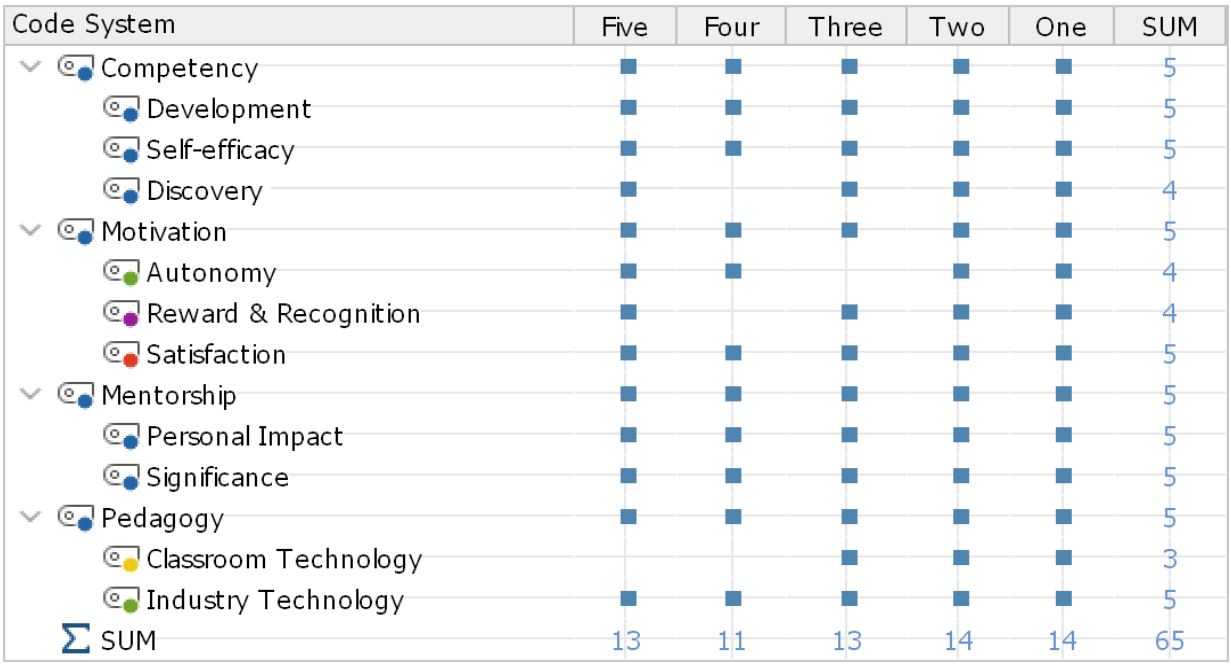
Located in the heart of central Minnesota, the research institution selected for this study consists of two campuses, approximately 45 miles apart. Considered a small to mid-sized institution in terms of total student headcount, each campus hosts a mixture of liberal arts and technical career programs of study, and each has a distinctly different feel when compared to the other. One campus hosts more liberal arts programs of study than the other and has a community college atmosphere. There are several soft seating spaces and soaring windows with natural light spilling into both common areas and classrooms. Hallways are littered with flyers advertising student life opportunities and community businesses offering special deals for students. Classroom spaces provide a combination of comfortable, generic classrooms; classrooms that are used for specific learning evidenced by posters and equipment strategically placed around the room; and technical program classrooms and lab spaces filled with the tools and equipment of the trade. In contrast, the other campus presents a more industrial feel both inside and out. Sterile hallways lead to utilitarian classrooms and learning laboratories or "shops" that house tools and equipment. Student lounge spaces are reminiscent of industrial employee breakrooms.

All interviews were conducted in-person. Four of five interviews were conducted in the individual faculty's workspace. One interview was conducted at a public location of the participant's choosing and of mutual convenience for participant and researcher.

Introduction of Themes

Interview transcripts and researcher field notes were loaded into MAXQDA, an electronic research software program, for the purpose of data organization and visual analysis. Themes were identified based upon the number of times codes appeared in individual interviews.

Figure 3 shows the codes identified in the data associated with each participant interview. A square indicates the code appeared at least one time in the participant interview. The "SUM" in the right- hand column indicates the total number of participants exhibiting each code.



Code System	Five	Four	Three	Two	One	SUM
Competency	■	■	■	■	■	5
Development	■	■	■	■	■	5
Self-efficacy	■	■	■	■	■	5
Discovery	■		■	■	■	4
Motivation	■	■	■	■	■	5
Autonomy	■	■		■	■	4
Reward & Recognition	■		■	■	■	4
Satisfaction	■	■	■	■	■	5
Mentorship	■	■	■	■	■	5
Personal Impact	■	■	■	■	■	5
Significance	■	■	■	■	■	5
Pedagogy	■	■	■	■	■	5
Classroom Technology			■	■	■	3
Industry Technology	■	■	■	■	■	5
SUM	13	11	13	14	14	65

Figure 3. Codes used for each participant. Codes were used to identify potential impact of emerging technology on pedagogy, role, motivation, and self-efficacy. Squares indicate that the code was used at least one time during the interview for that participant.

A total of 10 themes emerged from the data. Under the heading Pedagogy, themes related to educational technologies, distinguished as Classroom Technology and Industry Technology, emerged. Under the Mentorship heading the themes Seeking Significance and Personal Impact occurred. The Competency heading included Discovery and Development themes. Three themes appeared under the Motivation heading: Recognition and Reward, Autonomy, and Satisfaction. Table 2 offers a visual summary of themes and each theme is described in detail in this chapter.

Table 2

Themes: Impact of Emerging Technologies

Pedagogy	Mentorship	Competency	Motivation
Classroom Tech	Significance	Discovery	Satisfaction
Industry Tech	Impact	Development	Recognition & Reward
		Self-Efficacy	Autonomy

Technology's Impact on Pedagogy

Data collected within this study provides evidence that emerging technologies are impacting pedagogy. Pedagogy was defined by the researcher in this study as the totality of the teaching practice. Research questions were developed utilizing the phrase teaching practice rather than the term, pedagogy, to account for any differences in the definition of pedagogy between the researcher and study participants that may have existed.

Educational technology represents the full scale of technologies impacting teaching practice within this study. Similar to the researcher approach to the term pedagogy, research questions and discussion within participant interviews focused on educational technology as a whole. What emerged was a distinction between classroom technologies and industry-related technologies. Study participants understood classroom technologies as tools utilized in teaching to facilitate student learning in the classroom. They described industry-related technology as content-based tools contributing to student learning outcomes necessary for employment.

The centrality of industry-related technology in technical and career program pedagogy is a key finding from this study. The researcher began the study with a hypothesis that participant experience with emerging technology would almost exclusively be focused on emerging classroom technologies. Instead, what emerged was the prioritization of industry-related technologies within pedagogy, with a secondary importance assigned to classroom technologies.

It was particularly interesting to discover that, for these study participants, technology is integral to their academic domain rather than solely a tool for teaching. The discovery that these faculty define pedagogy in terms of classroom tools rather than the totality of their teaching practice is significant to the findings of the study.

Two of five participants acknowledged the incorporation of emerging classroom technologies in their practice. These participants readily described their use of classroom technologies to enhance student communication, facilitate learning, and manage classroom activities. One participant has developed OneNote as the learning management system utilized within his classes. He enthusiastically demonstrated how he records lectures, posts materials and assignments, maintains a classroom discussion board, and manages his gradebook within the program. For example, he shared how he utilizes recorded hands-on demonstrations to facilitate learning. Students are required to watch the demonstration videos before attending lab so that they arrive ready to fully participate in lab activities. Feedback from students is positive, and he believes the student lab experience has been improved. "They get halfway through doing something and can't remember how to do the rest. I'm over here helping somebody else. They just pull it up on their phone, watch the video again and keep going."

Another participant teaching in a fully online academic program provided numerous examples of the way she is incorporating emerging classroom technologies into her pedagogy. This participant offers students the option to attend class online in synchronous or asynchronous formats, or in-person. She utilizes a smart board in the classroom with a tablet to facilitate both demonstration and discussion. Class sessions are hosted online via Zoom technology and are recorded for students opting for asynchronous instruction and for future use by synchronous online and classroom students. The participant maximizes Kaltura and D2L technologies to

provide a course overview, deliver weekly messages to students, to record instruction of particularly difficult concepts, to provide feedback to students.

For two of five participants, technology is central to their field and so to their academic program. Instruction related to developing competency with industry-specific technology is essential to student learning outcomes within the academic program. Changes in industry-related technologies are impacting the pedagogy of these instructors. For example, both referenced changes they had made in assessment activities and techniques resulting from changes in technology. However, despite providing examples of how industry-related technologies are incorporated in their pedagogy, both participants exclusively associated classroom technologies with pedagogy during the discussion. One participant spoke extensively of classroom technologies when discussing pedagogy. This participant also spoke of industry-related technology, but not as part of their discussion about pedagogy, even though industry-related technology was described by the participant in pedagogical terms.

For two out of five participants, industry-related technologies are so omnipresent that it was not mentioned as integral to pedagogy during interview responses or was glossed over, until the researcher guided the discussion to specific details of its integration within classroom activities and assignments.

A variety of pedagogical approaches are used by study participants when incorporating industry-related technologies within classroom activities and student learning. Some participants self-study and master industry-related technologies before introducing technologies to students via lecture, demonstration, and classroom activities. Others learn alongside students. They either participate with their students in training delivered by industry partners, or they gain access to industry-related technologies for classroom use and teach and learn simultaneously.

Still other participants encourage students to seek training regarding necessary industry-related technologies outside the activities of the academic program. In this example, the academic program curriculum and total instructional hours cannot be altered to accommodate instruction in all industry-related technologies that a student may need for success in their chosen career field.

While not identified by participants directly as pedagogically significant, figure 4 demonstrates the significant presence of industry-related technologies in pedagogy as coded by the researcher.

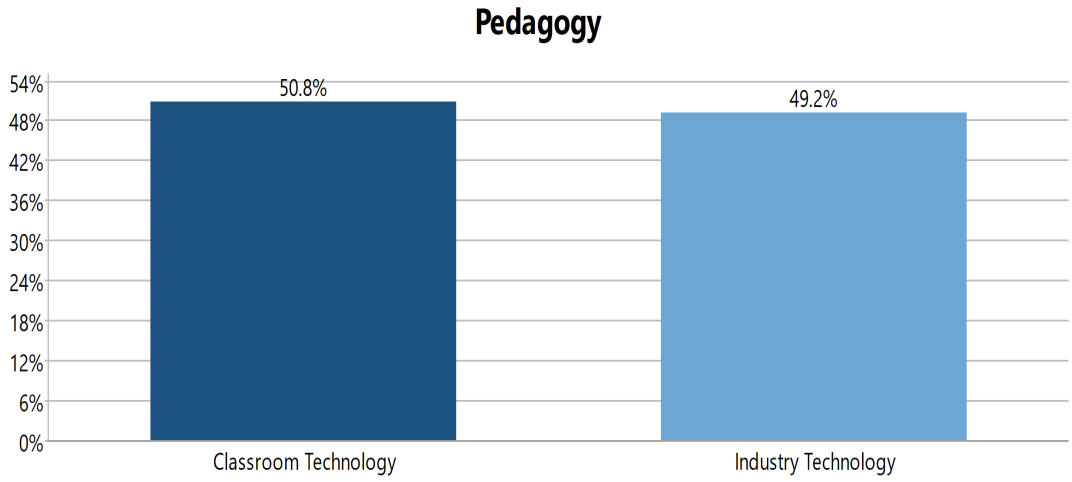


Figure 4. Percentage of pedagogy related interview segments coded by the researcher. Demonstrates significance of industry technology in pedagogy.

One participant teaching in a machine-based technical program indicated that he did not use emerging technologies in his practice. However, he shared at length technological advancements in equipment utilized within his trade and how those technological advancements were changing how individuals perform tasks. While he did not articulate a clear connection between these technological advancements and class content or methods utilized to teach students how to develop proficiency with industry related technology, one can assume such a connection certainly exists. Additionally, the same participant shared that simulators were used

in many of the classes found in the academic program, including one that he teaches. He described the high utility of a simulator for giving students consistent practice with required equipment as well as the opportunity to experience situations that cannot be replicated in a lab setting. While incorporation of simulators does not reduce the number of lab hours required in specific classes, it does enable the student to enter the lab setting with a foundation of knowledge and greater proficiency. When encouraged to elaborate, the participant talked of establishing minimum simulator hour requirements for students and described programming a "number of differing scenarios" in the simulator as a method for students to develop proficiency in required skills. Again, although this participant did not articulate the connection between this industry-related technology and his pedagogy, a connection was apparent.

Mentorship

Mentorship is a theme that emerged when examining participant experiences contributing to the development of individual definitions of role and the source of motivation for teaching. For all participants, closely intertwined are the reasons for becoming career and technical program faculty, how each describes their faculty role, and what provides satisfaction and the motivation to continue teaching. For the purposes of this study, this theme was divided between factors related to participants seeking significance and participants desiring to have a personal impact upon students. Potential significance and impact factors were coded according to the following definitions.

Significance: Explanations of role and identity that describes a depth of mentorship focused on the development of personal growth and identity among individual students.

Impact: Descriptions of role and identity that relate to study participants' desire to make significant contributions resulting in positive student outcomes related to employment and quality of life.

Seeking Significance through Mentorship.

In response to questions related to how participants define their role and why they teach, four out of five responses centered around student mentorship. All described a responsibility to build community among students and to influence individual student growth and development as both a duty within their teacher role and as a personal privilege. One respondent described a desire to "give as much as I can to as many people as I can." This respondent went on share that teaching and helping other people through his experiences are the primary ways to live that out. Yet another reflected upon the catalyst for his transition from industry to academia and described a recognition that he had "a lot of knowledge…that he could potentially pass on to the next generation."

All participants spoke in some way about a responsibility to share their knowledge and experience with students to influence student growth and development. When asked what it means to be a teacher, one replied "Mostly a counselor. It starts the first day of class. I get a sign right here on my forehead 'counselor' because I get to hear everything." Another participant ruminated on the way that so many of his professors guided his path personally, academically, and professionally. He expressed the need to "pay it forward with students" and described the mentorship that he received as the foundation of his teaching style and a mirror of the way that he mentors his students. He described mentorship as "keeping it real for students" by transparently sharing his own experiences, both achievements and failures, as a way to "try to

save them from some of the pitfalls" that he has experienced. He went on to define what it means to be a teacher in this way.

> When you're a teacher, you're 100% teacher… But at the same time, the similarities would be that you become a mentor. You don't tell them what to think, you tell them *to* think about things related to developing relationships that contribute to their professional futures. In a way, you can be almost a parent because you really get to know the kids. So, you're not just an educator. At the end of the day, that's what it's all about. You can play a lot of different roles. You've got to think on your feet and deal with situations as they arise. So, you have a lot of influence and I don't take that for granted.

It was noted by four of five participants, that the career and technical academic programs which are commonly arranged in a cohort model have an advantage over academic programs that are not cohort based. Students in cohort-based programs are more likely to develop strong relationships with fellow students and instructors. One participant described the daily challenge of building community among students coming from divergent backgrounds and experiences. In addition to developing a foundation of academic program related knowledge on which to build, the participant noted a challenge in helping students to know one another and respect differences. This challenge and the variety among his students have contributed to this participant's continued enjoyment in teaching that spans over two decades. He described success in this way, "We're a family. I maintain a Facebook and Twitter page for the program. Students like it. They follow it. Two or three years later you'll see that one of them got married and all the guys in his wedding are students that he met here."

Personal Impact Through Mentorship.

All study participants described the satisfaction of observing students grow both academically and personally throughout the academic program experience. One described the "magic" of helping students connect with a craft, and another discussed the satisfaction of developing personal relationships with students that allows them to influence student growth and maturity. "I see it mainly as sharing my knowledge with them. I'm very honest with them and tell them things that most teachers wouldn't tell their students." For this faculty participant, transparency about his own struggles as a student has helped to establish the trust needed to gain student participation in non-classroom activities such as registration, financial aid, and scholarship application activities. Participants in each interview gave examples of their interactions with students in and outside the classroom designed to positively influence student maturity and growth.

All recognized and spoke of their ability to change the lives of the students that they serve. When asked what a participant hoped to accomplish in his teaching practice, the participant responded "I would hope that…well, you know I have changed lives because of what I've done here. I would hope that at some point a lot of my students recognize that." All expressed satisfaction and enjoyment in seeing evidence of their impact in relation to positive student academic and professional outcomes as well as personal growth and maturity. One participant said this, "To see them when they first come in to where they progress when they leave…some of these students are amazing. Most of our students are right out of high school. They've never been away from home before. They're experiencing life for the first time. So, to see them grow and mature is remarkable. Some of them really fall on their face, and that's part

of growing up. So, if they can turn around from that and be successful in life, that is awesome and that's all we can hope for."

All participants in the study measure their success based on the student's preparation for, and ability, to gain employment in the field upon graduation. One said "To see them go from an undergraduate and then become my colleague, that's what I measure my success by. I like to see the influence that I can have; to see them succeed however they define it." Another participant, when speaking about her positive impact on students, disclosed an evolution from a teacher-centric to student-centric definition of student success. This participant described focusing early in her career on student degree completion and transfer to a bachelor's degree program as the defining measure of success. When students failed to complete the associate degree program, or failed to transfer, the participant was disappointed and felt less satisfied in the teacher role. A pivotal point occurred in the participant's third year of teaching. A student with special aptitude completed the associate program and despite the participant's encouragement to continue her education, refused to advance. The participant met the student's family at graduation and learned that the student was the first in her family to attend college and that her family had pooled their money to pay for her education. What the participant interpreted to be lack of ambition or waste of talent was really a lack of available resources. This realization opened the faculty's perspective to the challenges that some students face when participating in higher education. These challenges may impact student performance, level of engagement in learning and can impact whether the student graduates and advances their education after graduation. Today, the participant describes her motivation to teach as the inherent thrill of seeing students graduate and gain employment despite the many barriers and challenges that may be present in their lives, along with the knowledge that she has contributed to that possibility.

None of the participants referenced emerging technology within their responses to questions related to role and motivation. Instead, all responses revolved around the concept of mentorship. Each participant exhibited a strong sense of self and purpose related to their desire for significance and impact in the lives of students. The nature of these responses closely aligns to the relatedness factor found within self-determination theory. Relatedness, as defined by Skewes, et al., (2018) is the need to connect with other people in meaningful ways. It is the factor that creates a sense of belonging among individuals related to the institution, their role, and their position within the peer group associated with their role.

Creating Competency

Competency is a theme that emerged when participants discussed experiences with emerging technology. Participants spoke of their methods to develop competency with classroom and industry technology and their experiences implementing technologies in the classroom. They spoke humbly about their journey and their responsibility to students. Competency factors were coded and defined in the following way.

Discovery: Methods utilized by study participants to identify emerging technologies relevant to their teaching practice.

Developing Competence: Methods utilized by study participants to develop competency with emerging technology.

Self- Efficacy: Feelings of confidence or insecurity about ability to integrate emerging technology in teaching practice.

Discovery and Developing Competency

Study participants utilized three core strategies when developing competency with emerging technology, (1) self-discovery, (2) advisory council recommendations, and (3) peer

mentorship. Methods deployed to develop competency with emerging technologies varied slightly depending on whether the emerging technology was a classroom technology or technology found in industry. Five out of five participants acknowledged that emerging technology is a core component of curricula within the academic programs in which they teach. All participants described the challenge in keeping up with emerging technologies, both in terms of their own professional knowledge and expertise needed to teach students how to use a technology, and to ensure student access to the latest version of technology used in industry for learning. For two of the five faculty participants, the technology used within their associated academic program is the work of the industry. These faculty experienced that they must become experts in the use of industry technology and stay current with updates to teach in their programs. Conversely, the other three faculty participants reported reliance on institution partners to provide relevant technology and training for academic program use.

Each of the academic programs represented in the study are mandated to develop, maintain, and interact with an advisory council annually. Study participants utilize the expertise of their advisory council to remain knowledgeable about technological trends in industry and new skills needed in the future workforce. Academic advisory council recommendations influence program curricula and partnership with advisory council businesses is often the source of needed equipment, technology, and training for students. One participant described partnership with industry in this way, "Advisory committee…they tell me what's new or different. We're set up with several different brands as a dealer so we can offer their entry level certification online. Students log into the dealer site and take the training they would normally get at the dealership. I take that training along with them." Another shared that "either we learn

it ourselves, or we send them to those people who already have it. For us, it's as much about knowing how it works and what it can do than necessarily being able to teach the kids to do it."

Four of five participants described an evolution of technology within the industries associated with their academic programs. These technologies have changed the tools and processes utilized to accomplish tasks within various industry roles. Most participants were accepting and even enthusiastic about the changes that technology has affected in industry. One participant started his teaching career when computers were new and there was a single computer software program utilized in industry and taught within the classroom. Reminiscing, he described large mainframe computers and an unsophisticated software program taught alongside the more traditional manual methods. Twenty-five years later, this faculty now teaches multiple software programs requiring multiple devices. Rapidly shifting technology is ever present in the industry associated with this faculty's academic program; and, as a result, this faculty both embraces emerging technologies and feels it natural to teach students how to use new technologies as they emerge. This participant and three others expressed comfort in rapidly learning new technical skills before teaching students, as well as in learning new skills alongside students. Conversely, one faculty participant described the evolution of technology in the industry associated with his academic program in unfavorable terms. The participant acknowledged that emerging technology has made tasks in industry easier for those who perform them. At the same time, the participant lamented the declining skill level of practitioners in the field.

> Technology, and I keep harping about it... I should'nt say harp on it, but I understand that we need technology. It absolutely does enhance our lives. But I think there's a certain limit that it goes the other way because it takes away from what we're trying to achieve

> because, like having to hook the computer up to the piece of equipment to figure out what's wrong with it, where years ago, when you had an issue, you troubleshot that by doing different things to that machine. For instance, if it quit running, and you're trying to figure out if it's an electrical problem or a fuel problem, now we just hook the computer up, and the computer says, "X, Y, Z is what's wrong." Years ago, you would start troubleshooting first the electrical system, and you'd start with the battery and the ignition switch and the master switch. And you would really understand that piece of equipment by the time you got done troubleshooting all the elements, and it made you overall a better operator and a better maintenance person because, "Now I understand an electrical system because I've walked through that whole process multiple times."

While incorporation of emerging industry technology in teaching practice is expected and done quite naturally, incorporation of classroom technologies takes more effort. Brightspace D2L is the learning management system utilized by the research institution. Additionally, the institution, via the colleges and universities system in which it holds membership has invested in additional tools such as Kaltura Media Space, Microsoft Office 365, and Zoom for video conferencing. All these technologies are available for faculty use but are not required. Two of five study participants have worked to develop competency with these classroom technologies. Both participants described a process of research, self-discovery, and leaning into available peer mentorship when developing competency with classroom technologies.

One study participant is a "super user" of all available technologies to facilitate classroom learning. She teaches in a technology dependent academic program and maximizes classroom technologies in her practice to increase student access, flexibility, engagement, and persistence. This faculty is a technology pioneer. Throughout her career she has been the first to

pilot emerging technology and has led multiple system implementation efforts. She had adopted an "it can't be broken" philosophy about technology that has allowed her to explore and develop the confidence to excel in developing technological skills that enhance her teaching practice. She described the process taken when redesigning her academic program for hybrid delivery. The first step involved researching industry best practice and having conversations with colleagues who had implemented emerging technologies in their practice to learn about what was working and what was not. The second step was to engage campus partners to secure resources and support. The third was an extended testing period, in which she turned to peers and family for feedback. She explained, "I need to make sure it works. I do hands-on. I spent that first summer before it launched in the classroom testing with IT support. In addition, my husband, my children, and some of their friends were my guinea pigs all summer long. I would try things and they would just be honest. They would say 'do not do that'; 'do this', etc."

Another study participant teaches in a machine-based technical program and has embraced classroom technology in a different way. This faculty has rejected Brightspace D2L and other available tools and instead utilizes OneNote, a Microsoft Office 365 product, for all classroom needs. Competence was developed differently for this participant. He shared, "When I was hired, I didn't know anything about technology. I barely knew where the power button was on a computer. I'd have to ask my young nieces to turn the computer on and off for me so I could play a popular computer game of the era." He recalls initially learning from a faculty member who taught in a computer science program at the college to accomplish immediate tasks. Later, through a combination of trial and error, self-paced learning, and participation in formal education this study participant reports that he "uses a lot of the Microsoft Office apps all the time. I need them and I like the way they work better."

Self-efficacy.

It is interesting to note that while all participants articulated the inherent difficulty in staying current with emerging technological trends, none bemoaned the responsibility or disputed technology's importance. All expressed a level of comfort in learning alongside their students. Many described a humble acceptance that they and their students are co-participants within an emerging technology learning continuum. One participant expressed his approach in learning alongside students, "I'm open with them. If there's anyone that says they know everything, they are lying. I tell them that I'm going to learn stuff from them the same way they're learning stuff from me".

Another participant described a time when he was building his own skill at the same time students were building skills. He said, "There's been times when I know that a lot of students are way ahead of me on computer skills and other times when we're learning together. I wasn't always able to provide an instant answer. The students had to realize I was in a learning process too, and it wasn't an issue." This participant went on to express the importance of being competent and prepared for the conversation. "When you stand in front of your 20 students, you need to deliver something they are paying for. You better be prepared to do that, or you'll look like a fool. And, if you're a fool, you will have lost all respect from those students and it will be an uphill battle for the rest of the semester." He told a tale of a fellow instructor who was not prepared, and as a result, lost the respect of his students to the extent that the students would stand up and openly mock the instructor to his face. The instructor was unable to regain the respect of the students or control of the classroom, and subsequently ended up quitting mid-semester. Echoing the importance of adequate preparation, a different study participant shared that "I don't want to start a class and look like I don't know how to use the technology. Students

are nervous enough anyway. If you have a teacher that looks like they're ready to give up, they'll bail."

Competence factors and implementation of emerging technology are closely correlated. Study participants demonstrated significant levels of self-efficacy related to their perceived competence in the classroom and ability to develop competency with emerging technologies through various methods and approaches. The content of study participant responses closely aligns to the competence factor found within self-determination theory. Competence, as defined by Skewes, et al., (2018), is the need to feel effective and to have the opportunity for learning and mastery. Skewes included within that definition the concept that one's self-perceived level of competence is central to achievement, goal formation, and motivation.

Intrinsic Motivation

Study participants exhibited a strong sense of self and high levels of independence when speaking about their teaching practice. Each study participant described a common state of intrinsic motivation sparked by personal professional standards and expectations, pursuit of individual satisfaction, and desire for recognition by peers. Motivation factors were coded and defined in the following way.

Satisfaction: Student impact and outcomes that create feelings of job satisfaction and motivation among study participants.

Reward and Recognition: Intrinsic and extrinsic reward and recognition systems related to study participant experiences.

Autonomy: Perceived ability to manage self, environment, and work.

Satisfaction.

It was abundantly clear when speaking with study participants that connection with students is the primary source of their satisfaction and motivation to continue teaching. Further, while some express frustration with how technologies are intersecting with their classrooms, emerging technologies have no negative impact on study participants' overall satisfaction and motivation to invest in students and their profession.

Comments regarding satisfaction echoed sentiments related to seeking significance through personal impact. One participant shared satisfaction in continued connection with former students. He said, "I love where I'm at. I choose to be here. I love what I get to do in the two-year college. I can have every bit, if not more an effect on these young people as professors in a 4-year college. I continue to hear from students. The first students I ever had; I still have contact with those. And I'm thinking I had a pretty positive effect on a few of those buggers." Another shared that the enjoyment derived from working directly with students counteracts frustration with administrative red tape and dissonance with the institution's strategic direction. He said, "If it wasn't for the students, I probably wouldn't be here."

An ever-changing landscape keeps other participants motivated to continue teaching. For some, it is the challenge found within each new group of students. Creating a learning community comprised of students with various backgrounds, knowledge, and experience is both challenging and enjoyable for these study participants. Others find satisfaction and motivation in rapid change occurring in the industries associated with their academic programs. One participant has been teaching a group of core courses for the past 20 years, and he routinely incorporates changes occurring in his profession. The ongoing change contributes to his continued enjoyment in teaching. Another referenced rapidly changing technology in the

industry associated with his academic program. He is interested and engaged in learning about new software and software upgrades so that he may pass that along to students.

Three out of five participants expressed low levels of frustration with the way some technologies are showing up in their classroom. One described how disruptive and distracting cell phones can be. He described how it feels to look out at a classroom of students during lecture and see them snap chatting, texting, or otherwise distracted by their devices. When asked about the impact on his motivation to teach and pedagogy, he shared that his motivation to teach is unaltered but that he has developed stronger assessment skills and activities in the classroom to mitigate the potential negative impact of student cell phone use. Another participant discussed the challenge to connect with and gain full student participation in an online learning environment. This participant has offered incentives to encourage students to connect during office hours or to schedule appointments for individual consultation. In addition, the participant is maximizing digital classroom tools to assess student participation and create appropriate interventions. She acknowledges that, despite these efforts, it is not possible to know with 100% certainty that students are doing the work and fully meeting course goals in a fully online environment.

Reward and Recognition.

Data collected from study participants supports evidence of a correlation between self-efficacy, desired levels of recognition and reward, and faculty attitudes towards the adoption of emerging technologies in pedagogy. Faculty participants in this study are relatively content with existing levels of congruence within these three areas and the organizational structures that support them. They describe disparate experiences with existing administrative structures

intended to support faculty professional development; and they express little interest in reward and recognition programs facilitated by the institution.

There is a shared expectation among study participants that faculty keep themselves updated and aware of trends, new technologies, and best practice within the industry related to their academic program. In addition, all study participants described institutionally required professional development planning. Expectations and experiences seemed to vary according to academic leadership. Each study participant spoke about a requirement to submit a professional development plan that spans three to five years. There is no requirement regarding submission of evidence of progress within the plan or continued conversation about professional development with academic leadership beyond the initial submission. Participants reflected in their comments the respect afforded to them by academic leadership to allow faculty self-selection of appropriate development opportunities and self-accountability.

Despite the availability of institutionally sponsored professional development funding, most participants talked about participation in regular self-initiated professional development from a variety of resources. In most cases, professional development focused on retention of expertise within their chosen field or developing competency with digital tools easily incorporated into teaching practice. One participant said, “This isn’t just a job for me. It’s not only a vocation, it’s an avocation. That’s the way I look at it.” This participant described a multi-faceted approach to keep abreast of what is happening in industry. This approach includes membership in 15 different professional organizations; service on local, regional, and state committees that make legislative recommendations annually regarding issues important to the state and nation; prolific submission of research proposals; and ongoing reading in the professional literature.

As experiences and perceptions were further investigated, a recurring theme emerged. Participants were somewhat dismissive of institutionally created rewards and recognition. Their own intrinsic motivation to stay updated and relevant in their field supersedes the extrinsic motivation to be recognized by peers or administration at the institution. One participant, when speaking about rewards and recognition, said, "To be honest with you...sometimes it's just stay out of our way. I am a firm believer in what's good for me is going to be good for my program and the institution, but especially my students. That's what it comes down to. So, I don't need recognition. It's usually 'stay out of our way'."

Participants articulated satisfaction that there is no administrative directive related to technology adoption. As shared previously, the institution invests in a variety of classroom technologies that are available, but not required, for faculty use. D2L workshops are offered each semester to help faculty stay up to date on changes. The institution hosts an annual technology training event that includes a faculty stipend to support attendance. A study participant praised the stipend as effective incentive to drive faculty participation yet remarked about the limited utility of training topics. "It's pretty much the same basic training each year. It's only helpful for the new person coming in that doesn't know it." There is no intermediate or advanced level training available, leaving the faculty in a position to seek training and development opportunities on their own.

When asked about reward and incentives offered by the institution to encourage implementation of emerging technologies, all study participants indicated there are none. Additionally, they neither desired such incentives nor felt it would make a difference in their choice regarding adoption of technologies. Like professional development, the reward and motivation for integration of classroom technologies is intrinsic for these study participants. One

participant spoke about being motivated by the ever-changing nature of technology and by genuine interest and excitement about technological improvements and expanded capabilities. Another, when speaking about recognition, shared “I don’t need it and don’t want it. I just think it’s fun to try new things and share it." This participant talked about being an early technology adopter and finding satisfaction in being able to share experiences with other faculty. Further, the participant referenced satisfaction gained from earning the recognition of peers rather than formal recognition and reward programs sponsored by the institution in this way: “Just because there are not financial incentives does mean that there’s not recognition. I feel like there’s recognition. It’s small recognition from a committee, your Dean, or colleagues that you’ve done a cool thing.”

Autonomy.

The concept of autonomy arose frequently in response to questions about expectations for professional development and technology use, existing and desired institutional support, and effective use of recognition and rewards structures. Phrases like “they don’t really know what I do” and “they just leave me alone for the most part” were present in each participant interview and carried a positive undertone. All expressed satisfaction with the autonomy afforded them by the institution within their practice and professional development.

Conversely, all participants spoke of the role of program advisory councils within their teaching practice. These councils guide program curriculum based upon industry needs related to a skilled workforce. They also assist faculty in identifying emerging technologies and developing competence with technologies and industry trends. Because faculty participants measure their own success based upon their student’s ability to gain employment upon graduation from the academic program, they are highly motivated to meet the expectations

established by the advisory council. For the participants in this study, accountability to the advisory council supersedes accountability to administration at the institution. Evidence that this shift in accountability is both recognized and supported by the institution was present in each participant interview.

No participant indicated that more reward and incentive was needed, or if present, would result in greater development efforts or adoption of technologies. Further probing regarding study participants' desired improvements in institutional support revealed critique of certain structures related to academic degree requirements, instructor credentialing, resource allocation for obtaining needed equipment within the academic program, and course scheduling. There was no evidence that participants were dissatisfied with the level of support offered by their institution related to integration of emerging technologies in their practice.

Study participants exhibited high levels of autonomy and intrinsic motivation that drive continued growth and development within their practice. Factors associated with autonomy and intrinsic motivation are closely correlated. Study participants' responses provide evidence of alignment with the autonomy factor found within self-determination theory. Autonomy, as defined by Skewes, et al., (2018), is having the flexibility and control over processes and outcomes. It is associated with enhanced persistence and performance through greater intrinsic motivation.

Conclusion

Vocational program faculty within this study appear to embrace autonomy in practice and in their professional growth and development. They expressed overall satisfaction with, though low expectation for, institutionally provided rewards, recognition, and support. Each participant has an intrinsic motivation that guides their professional development, teaching practice, and

defines their role. Their experiences with emerging technology are remarkably different than among peer groups found in the existing literature. The majority of vocational faculty in this study are focused on learning and teaching technologies required in industry more than are they are concerned with developing competency within emerging classroom technology. All participants have embraced the role of coach or guide. All express a level of self-efficacy that enables them to be comfortable learning emerging technologies alongside their students. While there are some similarities among all faculty groups regarding perception of role, feelings of self-efficacy, and source of motivation, the evidence provided in this study suggests that the vocational program faculty experience differs from that of liberal arts faculty in these areas. Understanding these differences is imperative for the development of meaningful and effective faculty support, rewards, and recognition programs for vocational faculty.

Chapter V: Findings

Overview of Study

The purpose of this study was to explore the vocational faculty experience with emerging technologies in pedagogy and experience related to their perception of role, motivation, and feelings of self-efficacy. Participants included career and technical program faculty who taught online, incorporated emerging technology into their teaching practice, or both taught online and incorporated emerging technology into their practice within three years of this study.

Five faculty participated in this study. All participants were interviewed at a location of their choice. Interviews were transcribed, coded, and analyzed. After multiple rounds of analysis, data was synthesized into ten themes.

Research Questions

The study sought to develop an understanding of how vocational faculty are affected by emerging technology. Specifically, the research answers the following questions.

1. In what ways are emerging technologies shaping pedagogy in the vocational classroom?
2. How has the integration of e-tools in pedagogy altered faculty perceptions of role, motivation, and self -efficacy? If not at all, why is that?
3. What experiences and institutional support are most helpful to vocational faculty when facing change?
4. In what ways does the vocational faculty experience differ from what is reported in the literature about the liberal arts faculty experience?

Ten themes emerged from the data and were organized under four headings. The Pedagogy heading reveals the faculty experience with emerging industrial technologies and

classroom technologies. The Mentorship heading encapsulates significance and impact themes. Discovery, development, and self-efficacy are themes found within the Competence heading. Three themes emerged within the Intrinsic Motivation heading: satisfaction, reward and recognition and autonomy.

Conclusions

The study sought to explore the impact of educational technologies upon pedagogy. In this case study, educational technologies represented both classroom technologies and industry-related technologies found within the teaching practice of its participants. The vocational faculty experience with emerging technologies, as explored in this study, is distinctly different from faculty experience represented in existing literature. Existing literature primarily represents the liberal arts faculty voice as it relates to the incorporation of emerging classroom technologies into teaching practice. For the vocational faculty participating in this study, the incorporation of emerging industry-related technologies is the technology-related focal point within their teaching practice.

In fact, industry-related technologies are so central to the teaching domain of these study participants that they did readily recognize or articulate the pedagogical impact of industry-related technologies. These faculty define pedagogy as it relates to use of classroom tools rather than the totality of their teaching practice. For this reason, faculty participant responses to questions related to how technologies were impacting their teaching practice focused on classroom technologies. The researcher needed to probe more deeply into the faculty experience to draw out conversation about industry-related technologies and their pedagogical impact. For most study participants, classroom technologies are viewed as non-relevant or secondary to industry-related technology.

While study participants differ from faculty represented in existing literature in experience with technology as related to pedagogy, their experience runs parallel to faculty represented in literature in one way. Similar to a study conducted by Martin et al., (2020) regarding the factors used by faculty to make decisions regarding their use of digital technologies, this study found that the incorporation of emerging technologies in practice, whether industry-related technologies or classroom technologies, is dependent on faculty participant perception of their autonomy, competency, and relatedness. These factors, identified as key factors in self-determination theory, surfaced repeatedly throughout this study.

Similarities between faculty groups in existing literature and faculty participating in this study related to self-determination theory factors in practice is limited to decision-making regarding the adoption of emerging technologies. In many ways, the presence of autonomy, competency, and relatedness factors in the experience of faculty in this study is distinctly different from the presence of those factors in the experience of faculty represented in existing literature. This study illuminates several of those differences and offers important insight for those who support and lead faculty in institutions across the higher education industry.

Impact of Emerging Technologies on Pedagogy.

Emerging educational technologies, whether classroom or industry-related, are impacting the pedagogy of participants in this study. Study participants are implementing classroom technologies to enhance teaching and student learning and are regularly making decisions about how best to teach industry-related technologies to create student outcomes that align with industry expectations for graduates.

Other studies highlight the efforts of institutions across higher education to expand the adoption of classroom technologies. Archambault, Wetzel, Fougler and Williams (2010)

described mandated adoption of learning management systems and basic professional development and support for the development of faculty competence with classroom tools. Participants in the present study described an environment where institution-selected classroom technologies are available for use but are not required. These participants referenced institutionally-arranged technology training designed to establish basic proficiency for faculty who opt to utilize existing classroom tools. No expectations or support for industry-related technology exist at the research institution. All participants utilize external sources for industry-related technology selection, valuation, expectations, and training.

Other studies examined the source of barriers to faculty adoption of technologies. Studies conducted by Ertmer and Ottenbreit-Leftwich (2010) and Si, Radford and Fan (2016) addressed the issue of faculty assessment of technology's potential value to pedagogy and student learning. Both studies highlighted the connection between barriers to faculty adoption of technologies and self-determination theory factors of autonomy and competence. Their findings indicated that faculty find it difficult to sort through available technologies and evaluate potential benefit to pedagogy and student learning. The challenge emerges from the sheer number of available technologies, faculty capacity for appropriate valuation, and the time needed for faculty to develop proficiency with chosen technologies. Further, these studies indicated that faculty consistently express a desire for greater institutional support related to workload, technical support, and reward and recognition for technology integration.

Most participants in the present study readily assigned value to industry-related technology based on its connection to knowledge and skills students are expected to have in the workplace. Most seemed to dismiss the value of classroom technology in pedagogy and student learning. Unlike faculty represented in existing literature, these study participants expressed no

dissatisfaction or desire for changes within their institution's structure and systems related to technology integration. In fact, a resounding theme throughout participant interviews was the desire to be "left alone" to do their work in the way that they know best benefits the students that they serve. They were content to work independently with advisory committees and industry partners for assistance in identifying relevant technologies and sourcing necessary training for themselves and students.

Due to the abundance of existing literature describing faculty experience with emerging classroom technologies, the researcher expected classroom technologies to be the focal point of discussion with study participants. Although somewhat surprising, but not completely unexpected, the researcher discovered that industry-related technologies, rather than classroom technologies, are central in the pedagogy of these study participants. The centrality of industry-related technology in the pedagogy of vocational faculty is significant when considering the development of institutional structures and systems that support vocational faculty. Institutions wishing to increase the rate of faculty adoption of emerging technologies but must broaden the scope of their conversations to recognize and include both emerging classroom technologies and industry-related technologies.

In addition to researcher expectations about educational technologies, the researcher anticipated the use of a common definition as it relates to pedagogy. The researcher assumed the definition of pedagogy to refer to the totality of teaching practice. When universally applied, one could expect that a discussion about pedagogy and emerging technology to incorporate all forms of technology. This was not the case in this study. Participants separated industry-related technologies from classroom technologies when speaking about the pedagogical impact of emerging technology. Participants who have incorporated classroom technologies in their

practice spoke expansively about the pedagogical impact of classroom technologies but spoke of industry-related technologies in a different context. For these participants, industry-related technology is central to the academic domain of their program. Despite the regularity of decision-making about what methods are most effective in teaching industry-related technologies, these participants described industry-related technology as content taught rather than in terms of its impact on pedagogy. Further, most participants in this study articulated an absence of technology in their pedagogy yet spoke extensively about the presence of industry-related technologies within their classrooms and teaching activities. This highlights an area of opportunity for both faculty and administration.

It seems that establishing a common definition and understanding of pedagogy would be beneficial to higher education institutions. Lack of commonality derails the good intentions of organized professional development activities sponsored by institutions. Industry-related technologies were such a natural component of pedagogy that participants in this study did not view them as a strategic part of their teaching practice. Because their definition of pedagogy was limited to classroom technologies, and since they assign industry-related technologies greater importance than classroom technologies, participants did not see the value in institutionally sponsored technology training events. This represents a missed opportunity for this faculty group to see the intersectionality of classroom and industry technologies within pedagogy and reduces their ability to maximize either or both for the benefit of student learning.

Corresponding to the findings of studies conducted by Kezar (2018) and Alleman (2017), vocational faculty participating in this study entered academia through channels other than career academics. They bring a depth of industry-related professional experience and an understanding of the real-world application of concepts taught within their academic program. The faculty in

this study, like others represented in other research studies, were not afforded the opportunity to learn how to teach before fulfilling their first academic assignment. Competency was built through a combination of self-generated best practice research and the mentorship of experienced faculty at the institution. Development, for these faculty participants, did not result in a common definition and understanding of pedagogy. It seems that higher education institutions would benefit from developing or expanding new faculty mentorship initiatives to include the establishment of a common definition and understanding of pedagogy across the institution. Further, it seems that higher education institutions may benefit from development of new faculty training programs that introduce non-career academic new faculty to the fundamentals of teaching, instructional tools, and technologies.

Intrinsic Motivation and Faculty Experience with Technology.

Emerging technologies impact faculty perception of role, motivation, and feelings of self-efficacy differently among various faculty groups. Participants in this study expressed experiencing little impact from emerging technologies. Skewes, et al., (2018) described self-determination theory as central to motivation, persistence, performance, and well-being. In self-determination theory, when the psychological needs of autonomy, relatedness, and competence are fulfilled, individuals become motivated by internal factors instead of external expectations or rewards. This study supports the findings in the Skewes et al., (2018) study and suggests the presence of intrinsic motivation among study participants. Participants described positive feelings regarding the presence of emerging technologies in their practice. Further, they spoke of their own reasons for adopting technologies separate from institution expectations, recognition, and reward.

Role.

According to this study, emerging technology has no impact on participant's perception of role. For this faculty group, role is virtually synonymous with mentorship and is directly connected to the self-determination theory factor of relatedness. All participants referenced a responsibility to prepare students for employment in the industry related to the academic program in which they teach. All defined their role as "mentor and guide" rather than "teacher." Each participant expressed a desire to make a difference in the lives of their students through their power of influence and impact on student growth and development. Most spoke of the quality of relationship with students that was "parent-like" in nature. All spoke of the personal satisfaction realized by student success, assessed by both academic measures and life experiences following the academic experience. Study participants described their use of industry-related and classroom technologies within pedagogy separately from their description of role. For this reason, none of the participants expressed the belief that emerging technology has impacted their role.

This differs from the experience of faculty found in existing literature. Studies conducted by Kamali (2013), McKee (2010), Archambault, et al., (2010) and McWilliam (2008) presented evidence that the integration of emerging technologies is forcing a shift in role from "sage on the stage" to "coach on the side." Rather than being the single source of information and knowledge, faculty are guiding student discovery of information by means of technological resources, leading to the development of knowledge. Many of the faculty represented in these studies view their role as teacher in relation to pedagogy, and their pedagogy is their purpose.

Motivation.

In the present study, motivation factors among study participants directly align with the autonomy factor of self-determination theory. Study participants find satisfaction in their contribution to the success of their students. This success is not only academic, but includes success found in life overall as defined by the student. All faculty in this study referenced satisfaction with the level of autonomy afforded them. Statements like "they don't really know what I do" and "stay out of the way and let us do our work" were present in each interview. Each statement was delivered with a positive undertone and was followed by assertions of the preference for an autonomous work environment that respects their ability to determine what is best for students, the program, and the college.

Questions related to formal systems of recognition and reward evoked a dismissive response by study participants. Faculty in this study are satisfied with their compensation and do not seek formal recognition or additional reward from the institution related to their work with emerging technologies. The process of discovery and integration of emergent technology is prompted by personal interest in new technology and motivation for professional growth. Some faculty in the study referenced satisfaction in sharing their knowledge and experience of classroom technologies with peers and the casual acknowledgement from peers that they have done something innovative.

Faculty experience and preferences within this study group are not representative of the faculty experience found in existing literature. Studies conducted by Reid (2014) and Chiasson, Terrass, and Smart (2015) presented evidence of faculty dissatisfaction with incentives offered by their institutions to influence the adoption of emerging technologies within their practice.

Faculty in these studies felt that rewards and compensation were insufficient when compared to the amount of time and effort required to integrate emerging technologies in pedagogy.

Competency.

The self-determination factor of competence as defined by Skewes et al., (2018) is the need to feel effective and to have the opportunity for learning and mastery. Skewes et al., (2018) went on to say that self-perceived feelings of competence are central to finding success and avoiding failure. Faculty in this study exhibited a strong sense of self and high levels of self-efficacy in relation to industry-related and classroom technologies. All participants expressed a level of comfort in learning technologies alongside their students. Some spoke of the responsibility to become as proficient as possible with classroom technology before engaging students in the learning process. The primary concern was not the respect and esteem of students, but rather a concern that if they did not possess an adequate level of competence that students would become overwhelmed and decline participating in class.

This aspect of the experience of study participants does not fully align with evidence of faculty experiences found in existing literature. While research by the Babson Group (2012) and Grant (2012) indicated positive faculty perception and experience with digital technologies, other studies like those conducted by Chiasson, Terras, and Smart (2015) and McNaughton and Billot (2016) described an experience of low self-efficacy regarding emerging technologies and discomfort for faculty in learning alongside students rather than presenting as expert.

Implications for Practice

Exploration of the centrality of industry-related technologies within the pedagogy of vocational faculty is an important activity. The findings of this study indicate that institutions may benefit from recognition of the duality of industry-related and classroom technologies in the

vocational faculty experience. This phenomenon is important to consider when establishing institution-based directives and programs that support technology adoption. Strategies that consider how to apply consistent valuation techniques for both industry-related and classroom technologies have the potential to influence greater levels of technological integration across higher education institutions.

The findings of this study would indicate that institutions could benefit from a strategic approach to faculty development that includes recognition of the co-existence of industry-related and classroom technologies within the vocational faculty framework and the pedagogical intersectionality between them. Establishment of a common definition and understanding of pedagogy may provide the foundation from which higher education institutions may realize improved student learning and outcomes. Further development of new faculty mentor programs and new faculty training programs for non-career academic faculty has the potential to establish a common foundation for teaching practice across the institution that may improve the quality of instruction and contribute to faculty success.

Because vocational faculty must divide their attention between classroom technologies and industry-related technologies, support and reward structures should be designed to recognize advancement related to all educational technologies. Institutions with a singular classroom technologies-related approach to professional development, support, and reward structure will fall short of the needs and expectations of vocational faculty.

Implications for Future Research

Additional research regarding the vocational faculty experience is needed to be able to generalize the phenomenon across the industry. There are distinct and significant differences between the experience of faculty in this study and faculty represented within existing literature.

Understanding these differences is essential to the development of appropriate expectations and adequate systems of support for faculty regarding the adoption of emerging technologies in their practice.

Divergent needs and expectations of faculty groups as related to autonomy, competence and rewards and recognition, if unaddressed, could limit a higher education institution's ability to fulfill its mission. Further research is needed to examine these differences and develop an understanding of institutional conditions that contribute to the development of intrinsic motivation among faculty.

Concluding Comments

The vocational faculty voice is missing from literature regarding faculty experience with emerging technologies. This study illuminates significant differences in the experience of its faculty participants as compared to faculty represented in related literature and supports the need for closer examination of the vocational faculty phenomenon. Consideration of the vocational faculty experience, when added to existing knowledge of the experience of other faculty groups, can result in the development of a holistic approach for establishing appropriate expectations and systems of support related to the integration of emerging technology across institutions of higher education.

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Appendix A: Letter of Permission

CLC CENTRAL LAKES COLLEGE

April 26, 2019

Amie Anderson
31643 Harvest Road
Breezy Point, MN 56472

Dear Amie,

I am writing to document approval of your request to research career and technical faculty employed by Central Lakes College for purpose of the fulfillment of Ed.D. program requirements at Bethel University.

I understand that your research seeks to discover the experiences of our career and technical faculty, their perceptions of role, and motivation to teach as emergent technologies enter their practice. You have indicated that research participants will be asked to participate in a private interview and to share, at their comfort and free will, course materials as relevant to the purposes of the study. You have agreed to provide a consent form to each participant detailing the purpose for your study and the ways in which you will protect participant information and confidentiality.

As agreed, solicitation of participants will be facilitated through the Academic Deans leading career and technical education at the College, followed by a personal invitation from you. I understand that your intent is to complete your research with faculty participants between May and August 2019.

I wish you well in your research.

Sincerely,

Jay Bodin
Vice President of Academic & Student Affairs
Central Lakes College

Bethel University
Educational Leadership Ed.D. Program
3900 Bethel Drive
St. Paul, MN 55112

Brainerd Campus | 501 West College Drive, Brainerd, Minnesota 56401 | 800-933-0346 | (218) 855-8000
Staples Campus | 1830 Airport Road, Staples, Minnesota 56479 | 800-247-6836 | (218) 894-5100
www.clcmn.edu

Appendix B: Email Invitation Template

Dear _____,

I am a student in the Educational Leadership Ed.D. program at Bethel University and am seeking your assistance with my dissertation study.

My study focuses on vocational faculty experiences, perceptions of role, and motivation to teach as emerging technologies enter classroom and teaching practice. I would like to focus my study among the vocational faculty at Central Lakes College. You were selected as a possible participant in this study because you are a vocational faculty member that utilizes a learning management system (LMS) or has incorporated emergent technology into your classroom in the past three years.

If you decide to participate, I will schedule a private interview with you. The interview will occur in location convenient for you and will last approximately 1.5-2 hours. I will request that you share, in accordance to your comfort level, course syllabi and materials, and classroom demonstration as relevant to the purpose of the study. Again, I seek to learn about your experiences, both personal and professional, with the incorporation of emerging technology into your teaching practice.

Any information obtained in connection with this study will remain strictly confidential. Your decision whether to participate will not affect your future relations with Central Lakes College in any way. If you decide to participate, you are free to discontinue participation at any time without affecting such relationships.

I will contact you within the week to answer questions that you may have. I appreciate your consideration of my request and am hopeful for your participation.

Sincerely,

Amie Anderson

Bethel University Doctoral Candidate

(P) 218-851-5048

Appendix C: Consent Form

Consent Form

You are invited to participate in a study of vocational faculty at Central Lakes College. I hope to learn about your experiences, perceptions of role, and motivation to teach as emerging technologies enter your practice. You were selected as a possible participant in this study because you are a vocational faculty member that utilizes a learning management system (LMS) or has incorporated emergent technology into your class format in the past three years. This research is being conducted in fulfillment of dissertation requirements in the Educational Leadership Ed.D. program at Bethel University in St. Paul, MN.

If you decide to participate, I will schedule a private interview with you. The interview will occur in location convenient for you and will last approximately 1.5-2 hours. I will request that you share, in accordance to your comfort level, course syllabi and materials, and classroom demonstration as relevant to the interview and purpose of the study. Interview questions have been designed to delve into your personal feelings and experiences as related to teaching and the incorporation of emerging technology into your practice. You retain the right, at any time, to refrain from responding to questions that are too personal, sensitive, or distressing.

Any information obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission. In any written reports or in the publication of the approved dissertation, no participant will be identified by name or academic program. Further, there will be no other identifying characteristics included within discussion of thematic content as only aggregate and generalized data will be presented.

I will be recording the interview and utilizing a transcription service to document interview content. In order to maintain your confidentiality, the individual performing the transcription service will not have access to identifying information and will be instructed to keep the contents of the transcribed interview confidential. These recordings, interview transcripts, and any materials shared by you during the study will be stored and locked in a secure place at my home away from public access. These records will be destroyed upon full approval of my dissertation by the university.

Your decision whether to participate will not affect your future relations with Central Lakes College in any way. If you decide to participate, you are free to discontinue participation at any time without affecting such relationships. This research project has been reviewed and approved in accordance with Bethel's Levels of Review for Research with Humans. If you have any questions about the research and/or research participants' rights or wish to report a research-related injury, please contact:

Jeannine Brown, Ph.D.
Professor of New Testament & Director of Online Programs
Bethel Seminary, San Diego and St. Paul

j-brown@bethel.edu
619-325-5228

You will be offered a copy of this form to keep.

_____, you are deciding whether or not to participate. Your signature indicates that you have read the information provided above and have decided to participate. You may withdraw at any time without prejudice after signing this form should you choose to discontinue participation in this study.

_____ _____

Participant Signature Date

_____ _____

Researcher Signature Date