TEACHER INQUIRY IN HIGHER EDUCATION

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Nothing of significance was ever achieved by an individual acting alone. Look below the surface and you will find that all seemingly solo acts are really team efforts.

–John C. Maxwell

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Abstract: A pervasive neoliberal doctrine is rapidly changing the landscape of higher education in the United States. Applying free-market ideology to the university sphere has created an environment in which faculty are expected to be expert researchers able to procure external funding as well as excellent teachers who produce students that strengthen the national economy. Yet, these two expectations are not often rewarded equally in research universities.

The purpose of this qualitative case study is to examine the experiences of university instructors who conduct teacher inquiry and to explore the influence of this work on pedagogical practices and beliefs. Six professors at a land grant university were selected via purposeful sampling and data were collected through writing protocols, individual interviews, focus group interviews, and document analysis. Self-determination theory as described by Deci and Ryan (2000) and the stages of university teacher development as defined by Kugel (1993) were selected a priori and provided a lens through which to analyze data and present findings. The model of Dimensions of Activities Related to Teaching as proposed by Kern et al. (2015) was selected a posteriori in order to capture and depict the essence of participants' meanings of teacher inquiry. Study findings affirm the literature regarding professors' desires to be effective teachers and suggest that teacher inquiry in higher education can serve as transformative professional development. Furthermore, findings indicate that teacher inquiry may mitigate the barriers commonly associated with prohibiting professors' growth as teachers and can elicit teaching that is more authentic.

TABLE OF CONTENTS

Chapter Page

Chapter Page

Chapter Page

Chapter Page

LIST OF TABLES

LIST OF FIGURES

Figure Page

CHAPTER I

INTRODUCTION

No responsible observer claims that university faculties pay enough attention to the quality of their instruction or that their educational programs serve the interests of their students as well as they might.

–Derek Bok, *Universities in the Marketplace*, p. 179

Research that produces nothing but books will not suffice.

–Kurt Lewin, *Journal of Social Issues*, p. 35

The role of teaching at the university level is dramatically changing as decreased funding intensifies the demand for grant procurement and the ever-expanding accountability movement targets higher education. Issues of transparency and accountability typically associated with PreK-12 education now dominate the landscape of American universities (Giroux, 2014; Rippner, 2015). Amid concerns of the value of a college degree, today's audit culture is bolstered in its attempt to link university funding with performance metrics through matters of accreditation and measures of student achievement (Beach, Sorcinelli, Austin, & Rivard, 2016; Lucal, 2015; Ramsden, 2003; Schuck, Gordon, & Buchanan, 2008). This new 'university-as-business' model affects both students and instructors, with students incurring significant debt and instructors shouldering ever-increasing responsibilities (Clawson & Page, 2011; Deresiewicz, 2014; Lucal, 2015). Furthermore, pressure on institutions to ensure that a valuable postsecondary degree

is attainable within a reasonable timeframe brings increased public scrutiny to the quality of teaching found in America's universities (Austin, 2002; Nilson, 2010; Rippner, 2015). Although the triumvirate of research, teaching, and service continues to be championed as fundamental to the professoriate, a significant shift in the perceived importance of each aspect has occurred at the institutional level (Kelsey, Pense, & Maringer, 2002; Kezar & Maxey, 2014). The high stakes conditions of resource allocation have resulted in increased emphases placed on grant procurement and research (Ramsden, 2003; Tuchman, 2011). In turn, university professors are commonly hired based on productive disciplinary research and an ability to secure funding, but arrive on campus with little preparation for their roles as classroom instructors because successes in one's disciplinary research do not necessarily translate to effective teaching (Boice, 1991; Trautmann, 2008; Weimer, 2006).

Although the teaching-research nexus has historically been touted as improving instruction in principle (Gray, Diamond, & Adam, 1996; Neumann, 1992), studies suggest that in practice, one's disciplinary research productivity has little positive impact on classroom instruction (Bok, 2008; Geschwind & Brostrom, 2015; Prince, Felder, & Brent, 2007). In actuality, it appears that many university instructors know their content area well, but have little awareness of effective pedagogy, and a significant number enter the professoriate without having previously taught a class or having taken coursework related to teaching and learning (Solem & Foote, 2006; Trautmann, 2008; Weimer, 2016). By relying on the traditional assumption that subject area knowledge is sufficient for those embarking on careers in higher education, novice instructors find themselves discovering effective pedagogical practices through a trial-by-fire process of painful teaching experiences which leave them feeling disillusioned, frustrated, or bitter (Boice, 1991; Trautmann, 2008). In response, mechanisms of instructional support have arisen on university campuses in the form of faculty development centers.

The mission of faculty development centers is improved student learning through enhancement of instructors' teaching skills (Schwartz & Haynie, 2013). These centers attempt to

improve instruction through facilitation of learning communities, presentation of campus-wide offerings pertaining to teaching and learning, and opportunities for individualized teaching consultations (Beach et al., 2016; Schwartz & Haynie, 2013). A further hallmark characteristic of faculty development centers is the promotion of a scholarly approach to teaching, and studies suggest that expansion of teacher inquiry—practitioner research involving the intentional study of one's own teaching—would support this venture at the university level (Schwartz & Haynie, 2013; Yee, 2015).

Studies indicate that teacher inquiry can serve as impactful professional development in PreK-12 settings (Castle, 2012; Castle, 2016; Zeichner, 2003). Yee (2015) argues that similar inquiry models of professional development could benefit instructors at the university level and recommends this type of research be promoted as impactful faculty development. This sentiment is echoed by others who maintain that thoughtful analysis of one's teaching results in significant growth as a teacher (Black, 1993; Collins, 2016).

In higher education, a formal version of teacher inquiry is referred to as the scholarship of teaching and learning, or by its acronym, SoTL (Boyer, Moser, Ream, & Braxton, 2016). Some argue that research in the form of SoTL should be considered integral to one's professional responsibilities (Pecorino & Kincaid, 2007). However, in addition to neoliberal practices that decenter teaching (Tuchman, 2011) some studies suggest that university instructors attempting such work face significant barriers (McKernan, 1993; Wright, Finelli, Meizlish, & Bergom, 2011). Moreover, although SoTL research is becoming more prevalent and respected with some demonstrated potential for improving teaching, it remains less respected than other forms of research (Boshier, 2009; Boyer et al., 2016; Cochran-Smith & Lytle, 2004). For these reasons, a need exists to support those wanting to conduct teacher inquiry at the university level.

The culture, values, and structures of research universities play a significant role in what is respected, and this includes the area of professional development (Austin, 2002). Previous studies identify the types of support deemed essential by those conducting teacher inquiry in

PreK-12 settings and note the ways in which such research transforms practice (Castle, 2016; Zeichner, 2003). However, research regarding teacher inquiry in university settings is sparse. There is a need for such research to assist faculty development centers in their mission to help improve university teaching. Studying the experiences of university instructors who conduct teacher inquiry may inform the practice of those whose work is intended to support instructors' professional growth.

This topic is personally relevant because I work in a university faculty development center and provide support for instructors who wish to improve their teaching. As someone who has studied her own teaching over the course of a career, I perceive what Eisner (1983) refers to as 'the art and craft of teaching' as opposed to the more scientific representation that depicts teaching as the mere acquisition of strategies followed by implementation of these strategies through clearly defined procedures. Undoubtedly, maintaining a vision of 'teaching as science' would make the act of teaching seem easier, yet I do not believe this vision adequately captures the nuances that occur in a classroom setting. In his argument regarding teaching as an art form, Eisner (1983) describes the opposing, but commonly imagined scientific view, "A scientific technology of teaching would reduce noise in the system, make the system more systematic, more efficient, and hence give taxpayers the products they wanted schools to produce" (p.6). If only teaching were so easy!

Although it is beyond the scope of this study to offer a definitive characterization of what various experts intend by their use of the phrase 'effective teaching,' there are underlying assumptions that ground this work in regards to higher education. Perhaps most importantly, effective teaching is not viewed as a means unto itself, but rather is considered in relation to the needs and learning of students (Barr & Tagg, 1995; Eisner, 1983; Kenny et al., 2017; Kugel, 1993). Furthermore, the act of teaching is viewed as an ever-evolving craft, developed and honed through experience, intentionality, and critical reflection (Bain, 2004; Dweck, 2006; Eisner, 1983; Kreber, 2002; Weimer, 2006), and the most meaningful teaching causes students to engage

deeply with the content in order to become discriminating, self-directed learners (Felder & Brent, 2016; Kugel, 1993; Nilson, 2010). It should also be noted that I appreciate college students' perceptions of effective teaching and their belief that effective instructors in higher education can be described as: 1) respectful, 2) knowledgeable, 3) approachable, 4) engaging, 5) communicative, 6) organized, 7) responsive, 8) professional, and 9) humorous (Delaney, Johnson, Johnson, & Treslan, 2010).

Problem Statement

In university settings, faculty members' participation in ongoing professional development can enhance instructional skills that bring about positive student outcomes (Boice, 1991; Condon, Iverson, Manduca, Rutz, & Willet, 2016). Teacher inquiry is one such form of ongoing professional development; yet even in its most formal state, teacher inquiry is commonly considered substandard scholarship at the university level (Boyer et al., 2016). With disciplinary research serving as the most salient criteria of hiring, promotion, and tenure decisions, it comes as little surprise that instructors feel compelled to expend significant energy on content area research rather than applying research-focused inquiries to their teaching (O'Meara, 2005; Stake, 2010).

Despite the lack of respect teacher inquiry garners at the university level, some instructors persist in undertaking such work and devote significant time to studying their teaching (Wright et al., 2011). Boice (1991) observes that while faculty are often left to 'sink or swim' when it comes to determining effective teaching methods, those who examine their own teaching seem to make demonstrable progress as instructors. Unfortunately, there is little information suggesting *why* some university instructors choose to carry out teacher inquiry in the face of other work-related expectations that garner greater rewards, and there are few depictions of university instructors' sensed benefits of such work.

Studying the experiences of university instructors who conduct teacher inquiry at the university level may inform the practice of those in faculty development centers whose work supports instructors' professional growth. Examining experiences through application of Kugel's

(1993) theory regarding university professors' stages of growth as teachers may provide insight into instructors' beliefs about teaching and learning. Consideration of self-determination theory (Deci & Ryan, 2000) could expose the underlying rationale that prompts university instructors to conduct this type of research.

Purpose of the Study

The purpose of this study is to examine the experiences of university instructors who conduct teacher inquiry and to explore the influence of this work on pedagogical practices and beliefs.

Research Questions

The research questions guiding this study are:

1. What is the meaning of teacher inquiry in a university setting?
2. What rationale do university instructors provide for conducting teacher inquiry?
3. How are instructors' pedagogical practices and beliefs influenced through the process of conducting teacher inquiry?

Theoretical Framework

Constructivism serves as the epistemological perspective guiding this case study. The constructivist worldview reflects a belief in the subjective nature of experiences; meaning is presumed to be varied and interpretive as opposed to absolute and awaiting discovery (Kamii, 1992; Lincoln, 2005). From a constructivist perspective, the researcher's role is one of attempting to make sense of the meanings others ascribe to particular situations (Lincoln, 2005; Lincoln & Guba, 1985). Researchers operating from a constructivist point of view examine the interactions among individuals and focus on the specific context of the study as they attempt to understand meanings within a particular situation (Creswell, 2014; Stake, 2010). Constructivist assumptions are applicable to this study because the research involves examining the experiences of various faculty who engage in teacher inquiry.

When conducting qualitative research, Harris (2015) contends that selection of a theoretical framework may occur before or after data collection depending on the researcher's purpose. For this study, Deci and Ryan's (2000) self-determination theory and Kugel's (1993) stages of university teaching development were selected a priori in order to focus the study, guide data analysis, and provide a structure for interpreting evidence. The model of Dimensions of Activities Related to Teaching, or DART (Kern, Mettetal, Dixson, & Morgan, 2015) was selected a posteriori as a means for categorizing participants' perceived meanings of teacher inquiry.

Deci and Ryan's (2000) self-determination theory suggests that goal pursuit and attainment are driven by the degree to which psychological needs of autonomy, competence, and relatedness are met. Kugel's (1993) theory pertaining to university professors' stages of teaching development serves as an additional lens offering insight into instructors' views related to teaching and learning. According to Kugel (1993), teaching abilities of professors seem to develop in stages with a progression through two overarching phases, the first of which emphasizes teaching and a second that emphasizes student learning. The Dimensions of Activities Related to Teaching (DART) model (Kern et al., 2015) categorizes teaching tasks along two continua in regards to levels of formality and publicity.

Procedures

Qualitative case study methodology was used in this research. University instructors engaged in the process of teacher inquiry were selected via purposeful sampling. Data collection took place through directed writing protocols, semi-structured individual interviews, focus group interviews, and examination of documents. Following data collection and coding, within-case and across-case theme analyses were conducted.

When conducting case study research, the use of multiple methods and sources of information allows for triangulation of the data and provides a comprehensive picture of the findings (Erlandson, Harris, Skipper, & Allen, 1993; Hays, 2004). Trustworthiness was established in this manner.

Significance of the Study

This study is significant to areas of theory, practice, and research.

Significance to Theory

Some literature exists to describe the developmental stages of university teachers (Kugel, 1993; Sherman, Armistead, Fowler, Barksdale, & Reif, 1987). However, little research exists to describe the types of activities that advance instructors' progression through these stages. This study may add to the body of work that theorizes the reasons behind university instructors' struggles with teaching and could offer insight into the types of endeavors that support instructors as they progress toward more effective teaching practices. Furthermore, this study will build on the work related to self-determination theory (Deci & Ryan, 2000) by applying the theory to the work of university instructors conducting teacher inquiry—something currently missing in the literature.

Significance to Practice

The belief that student learning is frequently linked to quality of teaching has brought greater focus on teaching practices at the university level (Ramsden, 2003). Understanding linkages between teaching and learning is part of the ongoing function of faculty development centers (Condon et al., 2016), and Ramsden (2003), argues "The more scholarly the programme, the more likely it is to engage academics' interest and help them to make long-term changes in their approaches to teaching" (p. 247). Teacher inquiry provides a scholarly approach for examining one's teaching, and strong evidence exists to support the idea that learning *about* teaching ultimately leads to improved teaching practice (Boice, 1991; Condon et al., 2016). However, faculty members frequently need assistance in conducting teacher inquiry (Wright et al., 2011). If faculty development centers continue to be tasked with supporting instructors undertaking such work, research of this sort will be meaningful to those working with instructors.

Significance to Research

Norton (2009) states, "When research is published and disseminated, no matter how small and specific its original focus, it can be used by larger networks to inform and contribute to change on a grand scale" (p. 34). This is perhaps the most significant aspect of the study as it serves to provide a counternarrative to the notion that disciplinary research is the only research of value. The study and promotion of practitioner research in the form of teacher inquiry has the potential to alter university culture by encouraging others to question the current system and the impact of neoliberal ideologies.

Definition of Terms

Constructivism. A theory of learning that posits an individual acquires knowledge through internal constructions of information rather than through the simple receipt of information as it is transmitted. This view contrasts with empiricism, a theory that implies knowledge is found in the environment and a learner simply subsumes this reality (Kamii, 1992; Lincoln, 2005).

Faculty development centers. Also referred to as *teaching and learning centers* or *centers for teaching excellence*, faculty development centers have a mission of improving student learning on university campuses by supporting instructors in their quests to become better teachers (Schwartz & Haynie, 2013). Such centers typically provide workshops, facilitate the creation of learning communities, and provide one-on-one support to faculty members who request their services (Beach et al., 2016).

Neoliberalism. An ideology emphasizing free-market competition. In economic terms, neoliberal ideology is grounded in a commitment to free trade and a confidence in efficient resource allocation through free-market capitalism. This ideology is often anchored in the conviction that minimal governmental interventions should occur for economic and social issues. Over time, neoliberal ideology has been applied beyond economics to infuse market-like

structures and privatization into areas previously considered public goods, including PreK-12 and higher education (Giroux, 2014; Slattery, 2013).

Practitioner Research or *Practitioner Inquiry*. These synonymous terms often serve as an overarching umbrella encompassing a variety of research forms and genres (Cochran-Smith & Lytle, 2009; Zeichner & Noffke, 2001). According to Cochran-Smith and Lytle (2009), practitioner inquiry contains five subcategories: 1) Action Research or Participatory Action Research, 2) Teacher Research, 3) Self Study, 4) The Scholarship of Teaching [and Learning], and 5) Using Practice as a Site for Research. Regardless of form, practitioner research typically shares several common features (Cochran-Smith & Lytle, 2009; Costello, 2011; Sagor, 2000):

- The practitioner assumes the dual roles of practitioner and researcher, and this is often done in collaboration with others.
- The expertise of those in a particular field is valued.
- The boundaries between inquiry, theory, context, and practice tend to blur.
- Research is intentional and systematic with significant importance given to constant reflection on one's practice.

Scholarship of teaching and learning. Commonly referred to by its acronym, SoTL, the scholarship of teaching and learning is the formal version of teacher inquiry conducted at the university level. Teacher inquiry elevated to the level of SoTL encompasses the expectations of rigor typically expected in disciplinary research (Bishop-Clark & Dietz-Uhler, 2012). Characteristics that identify SoTL as appropriately rigorous have been defined in a variety of ways (Glassick, Huber, & Maeroff, 1997; Hubball & Clarke, 2010; Wilson-Doenges & Gurung, 2013). However, most definitions can be distilled to a few common elements: a) situating the work within current literature related to teaching and learning; b) utilizing systematic research methodology; and c) opening the work to public critique by publishing findings (Bishop-Clark & Dietz-Uhler, 2012).

Teacher inquiry. A term often used synonymously with *action research, teacher research*, and *pedagogical research* (Brown, 2010; Dana, Gimbert, & Yendol Silva, 2001), teacher inquiry describes a particular form of practitioner research whereby teachers research their own teaching. Teacher inquiry involves using a reflective lens to explore one's 'wonderings' (Castle, 2012; Dana & Yendol-Hoppey, 2009) or to methodically study a pedagogical issue (McKernan, 1996; Sagor, 2000). The essential element is enhancing one's teaching practice, but sharing one's work in the form of a publication may result (Castle, 2016; Cochran-Smith & Lytle, 2009; Norton, 2009).

Summary

Chapter one described the changes currently taking place in higher education and the issues novice faculty encounter as they embark on careers in teaching. This chapter highlighted the work of university faculty development centers and argued the importance of practitioner research in the form of teacher inquiry. The argument was made that a study of teacher inquiry in higher education would be significant to theory, practice, and research.

CHAPTER II

REVIEW OF LITERATURE

Higher education increasingly resembles any other business now. What pays is in; what doesn't is under the gun. Instruction is regarded as a drain on resources. "Efficiency" in the transmission of knowledge, not the unscalable craft of teaching, has become the cardinal value.

–William Deresiewicz, *Excellent Sheep*, p. 67

This chapter contains a review of literature associated with teaching at the university level and faculty members' development as teachers. Key topics include: (1) neoliberal influences affecting university faculty; (2) faculty preparedness for university teaching; (3) university teaching development; (4) the mission of faculty development centers on university campuses; (5) the potential for meaningful faculty development through teacher inquiry; and (6) self-determination theory as a framework for understanding the factors that prompt teacher inquiry at the university level.

Inclusion of these topics is intended to present a picture of university teaching given today's neoliberal climate and offer a compelling argument that the study of teacher inquiry at the university level is vital, both in terms of supporting novice instructors and in challenging the reified notion of worthwhile scholarship in higher education.

Neoliberal Influences

Teaching is framed by the entirety of the social, political, and ideological contexts that

surround it (Brancato, 2003; Nicholls, 2000; Pinar, Reynolds, Slattery, & Taubman, 2008), and today's university instructors face circumstances unlike any previously witnessed in higher education (Delbanco, 2012). The calls for efficiency and accountability generally directed toward PreK-12 education now also persistently target university settings (Rippner, 2015). Dramatic changes taking place in the structure of American universities have made the university system of only a few decades ago virtually unrecognizable today (Huber & Hutchings, 2005), and these changes greatly influence those who teach within the system.

A Brief History of the American University

Throughout history, higher education has been reserved for the privileged in society (Clawson & Page, 2011; Rippner, 2015; Van Valey, 2001). Originally designed to prepare clergymen and to educate the public elite, most 18th and early 19th century colleges in the United States were publicly supported but privately funded (Clawson & Page, 2011) and criteria for hiring and retention typically pertained to religious affiliation or perceived character (Gaff & Simpson, 1994; Lewis, 1975). The basis for today's public universities did not appear until 1862 with the creation of 'land-grant' public colleges through passage of the Morrill Act (Clawson & Page, 2011).

In the 1940s, authorization of the GI Bill granted higher education access to thousands of soldiers returning from WWII and universities experienced rapid expansion from the 1940s to the 1970s (Clawson & Page, 2011; Van Valey, 2001). Investment in the system was necessary to accommodate this rapid growth (Rippner, 2015), and an expansion of public investment was buoyed by a post-New Deal era consensus that the federal government should play a central role in providing essential services, such as housing, health, and education, for its citizens (Clawson & Page, 2011). With few exceptions, the nature of higher education remained relatively stable until the recent proliferation of neoliberal ideology that has generated sweeping transformation (Rippner, 2015; Van Valey, 2001).

The Influence of Neoliberal Ideology on the American University

A pervasive neoliberal doctrine has altered the landscape of much in the United States (Giroux, 2013a), and higher education has not been immune to neoliberalism's market-driven message (Delbanco, 2012; Lucal, 2015). Belief in the power of markets to generate economic growth, combined with an abhorrence of governmental involvement in virtually any sphere, is changing the landscape of university life (Clawson & Page, 2011; Giroux, 2013b; Lucal, 2015). The same neoliberal ideology that endorses reducing taxes, decreasing governmental supports, and embracing the power of the free market, also creates practices in higher education, such as massification and academic capitalism, which affect university faculty (Clawson & Page, 2011).

Massification and the knowledge economy. Recruitment of non-traditional students, increased focus on formerly underserved populations, newly relaxed admission policies, and offerings of hybrid and online coursework have resulted in noticeably increasing university enrollments (McKee & Tew, 2013). This influx of students has resulted in greater diversity in university populations and has forced instructors to consider the needs of those who may require extra support in order to be successful in handling the rigors of university classes (Huston, 2009; McKee & Tew, 2013).

Higher education has been altered both by this increased diversity and by the rising belief in a knowledge economy. During her reign as the nation's Secretary of Education, Margaret Spellings' commissioned report, *A Test of Leadership: Charting the Future of U.S. Higher Education* (U.S. Department of Education, 2006), captured the essence of this in ways similar to *A Nation at Risk* (NCEE, 1983) and PreK-12 education:

> But today that world is becoming tougher, more competitive, less forgiving of wasted resources and squandered opportunities. In tomorrow's world a nation's wealth will derive from its capacity to educate, attract, and retain citizens who are able to work smarter and learn faster—making educational achievement ever more important both for individuals and for society writ large. (p. ix)

Knowledge has quickly come to be seen as 'global capital'—a resource one needs in order to be economically successful (Olssen & Peters, 2005). As Olssen and Peters (2005) explain, education is now "represented as an input-output system which can be reduced to an economic production function" (p. 324). Success is seen in terms of global economic development rather than contributing to the greater good of society (Giroux, 2013a; Olssen & Peters, 2005). Where once the onus of accountability was placed on students, today issues of accountability shift to the institution (Rippner, 2015; Taubman, 2009) as current discussions surrounding college portray it as an economic investment expected to pay off in higher lifetime earnings (Clawson & Page, 2011; The Education Trust, 2018). As Huston (2009) states, "It's no longer sufficient that more students are simply going to college; they need to have more impressive skills when they leave" (p. 19). This despite the fact that while a college degree has been shown to increase one's earning potential (Trostel, 2015), focusing purely on wages fails to present the other benefits of a college education including the experience one gains and the potential advancement of democratic ideals (Clawson & Page, 2011; Giroux, 2014).

A shift toward an economic focus changes the dynamic of university structure as well. Budgeting and funding decisions are both data and market driven (McKee & Tew, 2013). Departmental reductions, closures, and expansions, changes in internal allocation of resources, the formation of research parks, and division of academic labor regarding research and teaching illustrate some of the ways in which the restructuring of higher education has followed from market activity (Slaughter & Leslie, 2001). Furthermore, the notions of 'professionalism' change within this system. Where once the guiding principle was that of independent function, now hierarchical management chains serve to prohibit autonomous space from emerging, and such a shift serves to diminish the autonomous nature of a faculty member's teaching and research (Bousquet, 2008; Giroux, 2014; McKee & Tew, 2013; Olssen & Peters, 2005).

Academic capitalism. Slaughter and Leslie (2001) define 'academic capitalism' as "market and market-like behaviors on the part of universities and faculty" (p. 154). *Market*

behaviors refer to for-profit endeavors undertaken by the institution. Licensing agreements, profit-sharing arrangements with food services and bookstores, and sales of products with logos are common examples (Bok, 2003; Slaughter & Leslie, 2001). Additionally, in this structure higher education is offered as a product sold to students who are viewed as its customers (Slaughter & Leslie, 2001). As Keeling and Hersh (2011) argue:

> Intoxicated by magazine and college-guide rankings, most colleges and universities have lost track of learning as the only educational outcome that really matters. Other priorities—higher rankings, growing enrollment, winning teams, bigger and better facilities, more revenue from sideline businesses, more research grants—have replaced learning as the primary touchstone for decision making. Those other priorities drive institutions to divert resources from teaching and learning. (p. 13)

The prime example of *market-like behaviors* involves institutional and faculty competition to procure monies from external funding sources. Whether these monies come from external grants, university-industry partnerships, student tuition and fees, or other revenue-generating activities, all involve competition for which there is no alternative. Simply stated, if a faculty member is unsuccessful in procuring funding, then s/he does without (Slaughter & Leslie, 2001). As a result, research expectations have risen to such an extent in the past fifty years that research productivity has become the dominant criterion for hiring and tenure decisions at research institutions (Prince et al., 2007). Driven by an increasing dependence on procurement of external funding, activities that bring in little external monies, like teaching, are less valued (Tuchman, 2011).

Neoliberal ideology and university teaching. It is in this environment of quickly changing priorities that university faculty are expected to be expert researchers able to procure external funding as well as excellent teachers who produce students that strengthen the national economy (Olssen & Peters, 2005; Weimer, 1997). Although it could be argued that higher education has become shortsighted in its emphasis on research and entrepreneurship rather than

educating students (Keeling & Hersh, 2011), it seems that more is expected from university teachers than might have been expected in the past (Association of American Colleges and Universities, 2002). While calls for improved teaching at the university level—and, in turn, calls for improved preparation for teaching—have been common in the literature for more than thirty years, it could be argued that the greatest change currently taking place is increased pressure inflicted on those within the academy (Beach et al., 2016; Vannini, 2006).

Faculty Preparedness for University Teaching

The challenges associated with becoming a successful university instructor are well documented in literature (Boice, 1991; Huston, 2009; Lang, 2005; Seidel, Benassi, Richards, & Lee, 2006). Despite a persistent belief that receipt of a terminal degree is sufficient for a career in college teaching (Benassi & Buskist, 2011; Huston, 2009), evidence suggests that teaching is not a profession for which people are automatically skilled (Boice, 1991; Seidel et al., 2006; Weimer, 1997). Many instructors feel ill equipped for their roles as teachers, even when they express confidence in their subject-area expertise (Nicholls, 2005; Trigwell, Martin, Benjamin, & Prosser, 2000). Furthermore, novice instructors commonly report high levels of stress, frustration, and disillusionment resulting from university teaching experiences (Boice, 1991). A significant number of faculty describe teaching as "their primary source of anxiety" (Solem & Foote, 2006, p. 199) and some literature suggests that this remains true even for those who participate in introductory teaching and learning courses (Nicholls, 2005). More is currently known about learning, assessment, and student engagement than ever before (Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010; Benassi & Buskist, 2011; Brown, Roediger, & McDaniel, 2014; Lang, 2016), yet novice instructors embark on university teaching careers woefully unprepared to facilitate student learning (Seidel et al., 2006).

Preparation during Graduate School

Although teaching consumes significant time and energy for new faculty members, graduate students planning for careers within the academy generally receive little preparation for

teaching because the significant focus of their preparation is meant to support their work as future researchers (Boice, 1991; Ramsden, 2003; Robinson & Hope, 2013). Perhaps even more importantly, the structure of the university as an institution requires specific tasks of graduate teaching assistants (GTAs), and often these requirements leave little time for considering pedagogy, even when a person intends to enter the professoriate (Austin, 2002; Benassi & Buskist, 2011; Brownell & Tanner, 2012). Since much of the structure of graduate programs supports the effective running of the establishment, preparing students for their future roles as professionals is commonly of secondary importance (Arum & Roksa, 2011; Austin, 2002).

While the world of higher education has changed dramatically in the past three decades, the ways in which most graduate programs prepare future faculty members has not (Adams, 2002; Robinson & Hope, 2013). Graduate programs typically offer little in terms of pedagogy, cognitive science, assessment, and knowledge of how to handle the diversity of students (Gaff, Pruitt-Logan, Sims, & Denecke, 2003). When graduate programs do offer support for teaching preparation, these mechanisms of support vary widely, from half-day workshops at the start of a semester to elective—and sometimes rarely encouraged—coursework (Benassi & Buskist, 2011). Furthermore, when graduate students engage in teaching, their experiences are not typically organized in systematic ways that scaffold their experiences and understanding. Commonly, graduate students receive insufficient feedback, little mentoring, and few opportunities for guided reflection relating to their teaching (Bok, 2013; Mullen, 2009). More often, the use of graduate teaching assistants, or GTAs, is driven by departmental needs rather than the developmental needs of future professors (Austin, 2002).

Graduate students' views of teaching are also shaped by their perceptions of the views held by others in their fields. Even students who enthusiastically describe a desire for meaningful work as a future instructor note that faculty members often devote little time to helping doctoral students develop their teaching skills, and the message to avoid spending too much time on teaching is heard loud and clear by graduate students (Austin, 2002; Bok, 2013). Although greater

preparation for teaching has regularly been included in the calls for graduate education reform since the early 1990s, effecting this type of change has been difficult due to longstanding institutional values and structures (Austin, 2002; Robinson & Hope, 2013).

Teaching-Research Nexus

Traditionally, it has been presumed that teaching effectiveness and research productivity are mutually supporting and complementary processes (Clark, 1997; Webster, 1986). Research universities exist, in part, because of the belief that teaching and research are "so mutually reinforcing that they must coexist in the same institutions" (Marsh & Hattie, 2002, p. 603). Similarly, emphasis on disciplinary research productivity in the faculty reward system is often justified by the claim that research positively influences teaching. However, compelling evidence exists to suggest this is simply not the case (Braxton & Hargens, 1996; Figlio & Shapiro, 2017; Hattie & Marsh, 1996; Neumann, 1992).

At best, teaching and research are shown to be very loosely coupled (Braxton & Hargens, 1996) and significant literature suggests zero relation exists even when taking into account variations among disciplines, measures of teaching quality, measures of research output, and type of institution of higher education (Hattie & Marsh, 1996). Furthermore, some studies reveal a strongly espoused *belief* in a teaching-research nexus, but suggest this belief is likely a perception of the ideal rather than a reality of practice (Neumann, 1992; Stappenbelt, 2013). Crimmel (1984) claims that the myth of a teaching-research nexus is rationalized to offer false "currency to the doctrine that teaching is not enough, and that what really counts is publication, publicity, and prestige" (p. 193) and perhaps this explains why such a belief persists despite a preponderance of evidence to the contrary (Hattie & Marsh,1996).

University Teaching Development

As university professors begin to experience their lives as teachers, they tend to progress through similar stages that are grounded in certain core assumptions pertaining to teaching and learning (Akerlind, 2003; Kugel, 1993; Trigwell & Prosser, 1996). Across disciplines,

institutions, and countries, literature indicates key assumptions of teaching and learning as: 1) the transmission of information to students versus the facilitation of conceptual understanding in students and 2) a focus on teaching strategies versus a focus on students' learning and development (Akerlind, 2003; Kugel, 1993; Sherman et al., 1987). These differences are commonly referred to as *teaching-centered* versus *learning-* or *student-centered* approaches to teaching, and studies indicate that a teaching-centered focus is generally considered a less sophisticated view of teaching and is less likely to result in deep learning on the part of students (Akerlind, 2003; Samuelowicz & Bain, 2001)

Stages of University Teaching Development

Studies suggest that novice university instructors overwhelmingly view teaching and learning through a lens that is teaching focused rather than learning focused (Kugel, 1993; Sherman et al., 1987; Trigwell, Prosser, & Taylor 1994; Weimer, 1997). Studies also indicate that novice instructors predominantly perceive teaching as the transmission of knowledge and view students as receivers of information (Kugel, 1993; Nicholls, 2005; Sherman et al., 1987). Such emphases imply the perceived importance of transmitting facts and demonstrating skills while assuming that students can learn without being active members of the teaching-learning process—a view unsupported by current research from the field of cognitive science regarding teaching and learning (Ambrose et al., 2010; Brown et al., 2014; Lang, 2016; Trigwell et al., 1994).

In addition, not only does a teaching-focused approach result in inferior learning on the part of students (Arum & Roksa, 2011; Barr & Tagg, 1995; Keeling & Hersh, 2011; Ramsden, 2003), it also causes novice instructors to spend copious hours reading and planning for lectures (Boice, 1991; Kugel, 1993). Devoting significant time in preparation of teaching, only to garner lackluster results, causes angst for novice instructors because time devoted to teaching is perceived as taking away precious time that should be devoted to research, publishing, and establishing credibility in the field (Nicholls, 2005).

As shown in Figure 1, Kugel (1993) offers five stages of university teaching development, with stage designations based on an instructor's predominant area of focus: 1) focus on self, 2) focus on subject, 3) focus on student as passive recipient, 4) focus on student as active learner, and 5) focus on student as independent learner.

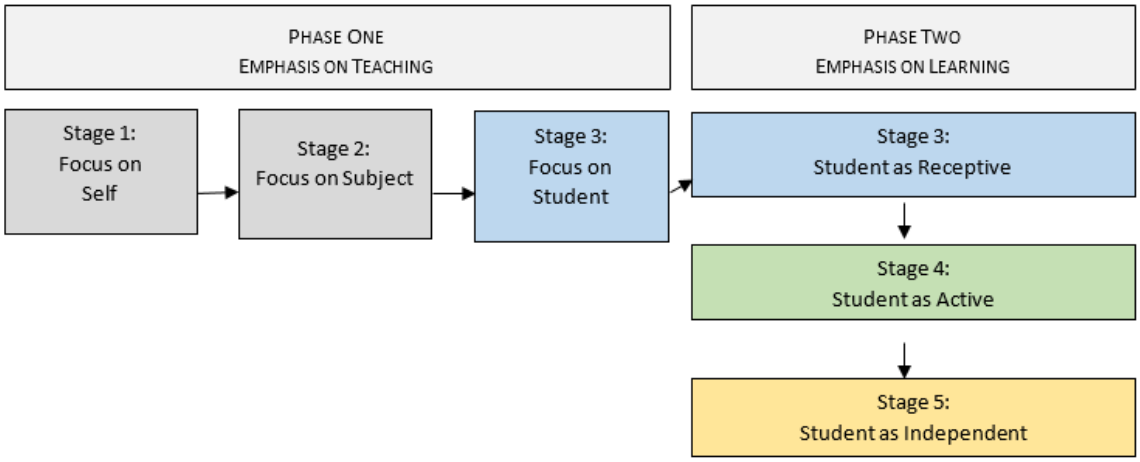

Figure 1. Stages of University Teaching Development. Adapted from "How Professors Develop as Teachers," by P. Kugel, 1993, *Studies in Higher Education, 18*(3), 315-328.

Kugel (1993) maintains that within a given developmental stage, university faculty focus predominantly on only one aspect of teaching, and this focus "determines how they think about their teaching and what they pay attention to, or 'see'" (p. 316). Furthermore, when operating from a particular stage, faculty rarely recognize or consider the assumptions they make regarding teaching and learning (Kugel, 1993). Unlike teaching development in PreK-12 environments, which suggests the importance of active reflection as a mechanism for growth across developmental stages (Schön, 1984; Steffy & Wolfe, 2001; Steffy, Wolfe, Pasch, & Enz, 2000), Kugel (1993) maintains that in higher education it seems as if instructors simply have a shift in vision that suddenly allows them to see things differently. Kugel (1993) further suggests that such a shift often occurs when the urgency of issues within a current stage diminishes and concerns about a different aspect of teaching take on greater importance.

Stage 1: Focus on self. Kugel (1993) explains this stage of teaching as akin to feelings of "abject terror" (p. 317). Novice instructors often describe this stage with thoughts of being ill-prepared to teach and worries that they will be unable to answer questions posed by students (Kugel, 1993). According to Kugel (1993), "Professors at this stage tend to assume that their effectiveness depends wholly on what they do, and that it can only be evaluated by [their students]" (p. 317). Since this stage typically involves those new to teaching, it may be experienced by novice professors or by graduate students serving as teaching assistants (Kugel, 1993).

Stage 2: Focus on subject. As self-doubt starts to fade, questions pertaining to content tend to arise (Kugel, 1993). Instructors in this stage begin to study their subject area with fervor, and hope to pass their knowledge and understandings to students (Kugel, 1993). Where previously an instructor worried about having enough lecture to last an entire class period, s/he now worries about all there is to "cover" during one short semester and spends class periods racing through content (Kugel, 1993). As Kugel (1993) states, "For now, teaching is telling, and learning is listening" (p. 318). Instructors often begin to notice that although they cover larger amounts of content, students seem to learn less, and this decrease in learning is commonly attributed to students' shortcomings. Common responses to the oft remarked 'I taught it; why didn't they learn it?' include references to students' lack of effort, motivation, and preparedness (Kugel, 1993).

Stage 3: Focus on student as passive recipient. At some point, the instructor begins to wonder why students seem disengaged, disinterested, or uncertain. This is when focus shifts from subject matter to students. (Kugel, 1993). However, while students now hold a place of prominence, they are viewed as passive recipients of knowledge (Kugel, 1993). If content is not learned, it is up to the instructor "to do something about it" and "teach harder" (Kugel, 1993, p. 321). Because of this, all three beginning stages—focus on self, content, and student—comprise a phase of teaching that embodies a teaching-centered focus (Kugel, 1993).

Stage 4: Focus on student as active learner. Stages four and five represent a shift in focus and a second phase of development. This phase involves a shift toward a learning- or student-centered focus. In stage four, instructors begin to view learning as something *students* do. According to Kugel (1993), instructors in this stage typically ask more questions, lead more discussions, utilize classroom assessment techniques, and may well "annoy those students who are convinced that learning is listening" (p. 323).

Stage 5: Focus on student as independent learner. Kugel (1993) suggests that in this final stage, instructors begin to believe in the value of helping students become self-directed, independent learners. These instructors attempt to equip students with the ability to learn material independently (Kugel, 1993). Kugel (1993) believes that instructors reaching this stage appreciate the value of the content that students learn, but also recognize that *what* students learn may not be what matters most in their lives.

Although Kugel's (1993) model represents a fairly linear process of university teaching development, he cautions that while there usually "seems to be a natural next stage…this naturalness does not make 'nextness' obligatory" (p. 316) and faculty do not need to progress through the stages in any particular order.

Barriers to University Teaching Development

Today's university faculty are expected to be both expert researchers and excellent teachers (Ramsden, 2003; Weimer, 1997). Novice faculty—even those considered top young researchers in their fields—view teaching tasks as very important and believe that finding the balance between teaching and research is an important part of the profession (Condon et al., 2016; Geschwind & Brostrom, 2015). However, significant barriers exist that impede faculty members' development as teachers.

Time. Faculty face an ongoing challenge of balancing responsibilities while experiencing the demands of greater accountability and the ambiguity of uncertain rewards (Huber & Hutchings, 2005; Schwartz & Haynie, 2013). Critical decisions regarding allocation of time and

dedication of efforts require constant reassessment. Regrettably, the ability to be a good teacher and the ability to be a good researcher are somewhat mediated by the amount of time devoted to each and often the pressure to excel in disciplinary research causes teaching efforts to be marginalized (Marsh, 1987; Norton, 2009; Tuchman, 2011).

Professional efficacy. With strong foundations in research, it logically follows that greater motivation, time, and effort devoted to research will result in increased research productivity (Marsh & Hattie, 2002). However, because most academics receive little training in effective teaching and have few teaching role models, it cannot be claimed that greater motivation, time, and effort devoted to teaching will lead to improved teaching (Marsh & Hattie, 2002). Often, even when faculty are motivated to improve their teaching, they do not know how to accomplish this task (Marsh & Roche, 1993) and simply continue to teach as they remember being taught (McKee & Tew, 2013).

Isolation. Disciplinary research remains the singular focus in most of the seemingly impenetrable silos of separate disciplines, departments, and schools in American universities (Keeling & Hersh, 2011). This makes collaborations centered on university teaching rare as collaboration in classroom spaces and discussions focused on teaching practices are hindered by perceptions of professional autonomy and isolation (Brancato, 2003).

The Mission of Faculty Development Centers

Faculty development centers—also referred to as teaching and learning centers—offer programming designed to minimize the impact of barriers to faculty members' teaching development (Sorcinelli, Austin, Eddy, & Beach, 2006). In the late 1900s, these centers appeared on the landscape of higher education in response to instructors' calls for support with teaching (Gaff & Simpson, 1994). The growth of these centers roughly paralleled the advancement of teacher inquiry at the university level and built on Boyer's (1990) belief that teaching in higher education should be valued as equally as disciplinary research (Boyer et al., 2016).

Through the work of faculty development centers, attempts to improve university teaching commonly occur across programming that includes facilitation of faculty learning communities, presentation of campus-wide teaching and learning workshops, individualized teaching consultations, and feedback in response to teaching observations (Schwartz & Haynie, 2013). These centers also commonly promote practitioner research in the form of teacher inquiry as meaningful scholarship (Schwartz & Haynie, 2013). In nearly all situations, instructors who participate in faculty development centers' offerings are encouraged to adopt a scholarly approach to teaching by reflecting on facilitation of student learning (Schwartz & Haynie, 2013).

More than simply covering specific instructional or technological skills, faculty development centers facilitate conversations surrounding larger issues of curriculum and pedagogy (Schwartz & Haynie, 2013). Moreover, these centers embrace a conception of faculty development that is not only meant to help develop a thoughtful understanding of teaching and learning, but is also intended to cause instructors to critically view the system. As Elton (2001) states, "Professional training should develop a critical understanding of the teaching and learning process and, at least in part, aim at changing the system, rather than fitting people into it" (p. 422).

Faculty Development in Higher Education

Elton's (2001) depiction of faculty development that cultivates both an understanding of teaching and learning and an ability to critically examine the university educational system shows considerable advancement from the field's origin which meant to develop expertise within one's discipline (Gaff & Simpson, 1994). Sabbatical leave, support for completing advanced degrees, and travel funding to attend professional meetings were early components of faculty development now considered standard practice on university campuses (Gaff & Simpson, 1994); although these too are now impacted by budget constraints (Baldwin, DeZure, Shaw, & Moretto, 2008; Carraher, Crocitto, & Sullivan, 2014). Faculty development as advancement of disciplinary

knowledge remained customary practice until the vision of faculty development as a means for improving university teaching gained momentum in the late 20th century (Sorcinelli et al., 2006).

Because the current conception of faculty development in higher education is relatively new, faculty developers are only now becoming common fixtures on university campuses. This newness also means that tensions surface as attempts for universal understandings are debated (Beach et al., 2016), and differences are seen in the variety of terms used to label the work. *Faculty development* is most commonly used to describe this work in the United States, but it is not unusual to see the terms *professional development, educational development,* and *staff development* used interchangeably within the literature.

Myriad definitions for faculty development also exist, and these definitions often contrast in the extent to which teaching development is a focus (Beach et al., 2016). Some argue that faculty development should place significant emphasis on teaching development (Little, 2014) while others contend that faculty development should support faculty in all areas of responsibilities: teaching, scholarship, and service (Sorcinelli, Gray, & Birch, 2011). A few contend that faculty development should strive to develop in faculty a lifelong learning perspective regarding teaching (Brancato, 2003: Nicholls, 2000). Nonetheless, faculty development's close association with campus teaching and learning centers means that improving instruction remains a core value for most faculty developers, and currently there is a trend for faculty development definitions to lean toward a more concentrated focus on teaching and learning (Beach et al., 2016).

Faculty Development through Teacher Inquiry

Teacher inquiry has a demonstrated history as practitioner research that leads to impactful change (Cochran-Smith & Lytle, 2009; McKernan, 1996; Norton, 2009; Zeichner & Noffke, 2001). A wide array of studies pertaining to teacher inquiry in PreK-12 environments demonstrates the ways in which this work could inform the practice of those teaching in university settings (Bartlett & Burton, 2006; Berlin & Educational Resources Information Center

1996; Castle, 2006; Castle, 2016; Elliott, 2015; Ermeling, 2010; Gravett, 2004; Zeichner, 2003). Furthermore, teacher inquiry affirms the literature suggesting that self-directed, applied learning experiences are most beneficial for adult learners (Boud, 1993; Knowles, 1988). Many argue that purposeful university faculty development should mirror the ideas advocated by adult learning theory via opportunities that go beyond the sharing of teaching techniques (Nicholls, 2005; Trigwell et al., 1994), and teacher inquiry has the potential to provide this form of faculty development.

Traditions of Teacher Inquiry

Although educational practitioner research may manifest itself in several unique forms (Cochran-Smith & Lytle, 2009; Zeichner & Noffke, 2001), each version—including teacher inquiry—is influenced by multiple traditions both in and beyond the field of education (McKernan, 1988; Noffke, 1994; Zeichner & Noffke, 2001). These influences include the nineteenth century 'Science in Education' movement (McKernan, 1988), John Dewey's philosophies of progressive education (Zeichner & Noffke, 2001), participatory medical research conducted in the early 1900s (McTaggart, 1994), and community work conducted in low income countries during the 1970s (Freideres, 1992). Current conceptions of practitioner research commonly offer the 1940s work of American psychologist Kurt Lewin as its foundation (Holter & Schwartz-Barcott, 1993; Kemmis & McTaggart, 1988; Norton, 2009; Zuber-Skenitt, 1993), but British and Australian works also influence the field (Masters, 1995; Zeichner & Noffke, 2001).

Varying influences on teacher inquiry. Both critical-emancipatory and practical views of teacher inquiry exist, and proponents of each are often portrayed as operating in separate domains (Manfra, 2009). Arising from diverse traditions and different countries of origin, both critical-emancipatory and practical forms of teacher inquiry are currently seen in the United States (Cochran-Smith & Lytle, 2009; Newman, 2000).

***Critical traditions*.** This perspective of teacher inquiry advocates a critical interrogation of one's teaching and a push toward democratic ideals reflected in schooling (Manfra, 2009).

Proponents of critical forms of teacher inquiry describe their work as investigating the social, political, and cultural aspects of schooling with the aim of creating more democratic schools and societies (Manfra, 2009). British educator Lawrence Stenhouse contributed to the critical perceptions of teacher inquiry with his vision of critical analysis as a means for ensuring education for all (Zeichner & Noffke, 2001), and similar critical-emancipatory ideals were also embraced in Australia (Kemmis & McTaggart, 1988; Noffke, 1994).

Practical traditions. The British and Australian versions of teacher inquiry differ markedly from the more practical version of inquiry traditionally found in the United States. By and large, teacher inquiry in the United States developed in a more practically oriented nature, inspired by works related to reflective practice, like Donald Schön's (1984) *The Reflective Practitioner* (Costello, 2011; Norton, 2009). Proponents of practical teacher inquiry describe their vision of practitioner research as resulting from the posing of questions related to teaching strategies and issues of practicality (Manfra, 2009). Originating from a desire to make professional development more meaningful for educators, much teacher inquiry in the U.S. aims to help educators form ideas about best classroom practices (Dana et al., 2001; Manfra, 2009).

A false dichotomy. Although practical forms of inquiry are common in the U.S., critical forms, like those originating in Australia and Britain, can also be found. Some argue that portraying teacher inquiry as a binary separated into critical-emancipatory or practical worlds is a false dichotomy (Manfra, 2009). Teaching is a complex and political endeavor and those familiar with educational issues realize that it is nearly impossible to tease apart the practical—lesson planning, assessment, etc.—and the critical—gender issues, hidden curricula, cultural relevancy, etc. (Manfra, 2009; Pinar, 2012). Attempting to apply this type of dichotomous structure fails to capture the complexities of teaching, and teacher inquiry offers avenues of discourse for instructors that merge practical and critical issues (Costello, 2011; Manfra, 2009).

Teacher Inquiry

Teacher inquiry is a form of practitioner research in which teachers examine their own classrooms and teaching practices (Castle, 2016; Clarke & Erickson, 2003, Dana & Yendol-Hoppey, 2009). Variously referred to as pedagogical research (Norton, 2009), action research (Elliott, 2015; Noffke & Somekh, 2009), and teacher research (Brown, 2010), regardless its label, teacher inquiry ultimately aims to improve students' learning experiences (Costello, 2011; Norton, 2009). Although teacher inquiry means to improve students' learning experiences, teachers commonly describe the results of inquiry efforts in terms of their own transformations. As a result of teacher inquiry research, teachers frequently express feelings of increased professional efficacy, growth as reflective practitioners, and development as more effective, autonomous instructors (Castle, 2006; Ermeling, 2010; Sagor, 2000; Seider & Lemma, 2004). By embracing 'inquiry as stance' (Cochran-Smith & Lytle, 2009) instructors are uniquely positioned to transform teaching and learning, and ultimately schooling, by blending research and teaching through teacher inquiry.

Teacher Inquiry in PreK-12 Settings

Teacher inquiry in PreK-12 settings has been demonstrated to be a transformative experience that aligns with design principles of quality faculty development because it is participant driven, provides an opportunity to study one's relevant question, allows for reflection over time, and centers on issues that are meaningful in the course of teachers' daily work (Zeichner, 2003). Teacher inquiry further supports principles of quality professional development design because it builds on instructors' knowledge and expertise (Zeichner, 2003). PreK-12 teachers conducting research in the form of teacher inquiry have been shown to develop a broadening of perspectives, an expansion of teaching practices, and a learner-centered perception of teaching (Zeichner, 2003). Furthermore, studies suggest that participation in teacher inquiry is viewed as both personally and professionally worthwhile and as significantly increasing one's sense of professional efficacy (Seider & Lemma, 2004).

Teacher Inquiry in University Settings: SoTL

The systematic study of teaching and learning at the university level gained attention with Boyer's (1990) publication of *Scholarship Reconsidered: Priorities of the Professoriate*. In his attempt to accurately depict the various responsibilities of those within the academy while working to bring legitimacy to all facets of academic work, Boyer (1990) proposed four different but interrelated forms of scholarship: discovery, integration, application, and teaching. Although teacher inquiry had been conducted in many disciplines for years preceding Boyer's publication (Gurung & Wilson, 2013; Smith, 2008), this text brought elevated notice to such work by specifically noting its importance and providing it with the label of 'the scholarship of teaching' (Huber & Hutchings, 2005).

Boyer (1990) maintained that all academics are bound by the common thread of knowledge creation and that teaching and research are equally important aspects of university work. Boyer (1990) further argued that the scholarship of discovery—that which tends to be considered disciplinary research—is disproportionately emphasized and rewarded much to the detriment of other aspects of scholarship. It was Boyer's (1990) contention that teaching should have equal status with disciplinary research and promotion of the scholarship of teaching was one way to bring these two areas into greater balance. This line of reasoning continues today through the work of the Carnegie Foundation for the Advancement of Teaching, which endorses the belief that greater respect for teaching will result in an increase in the quality of student learning (Smith, 2008; Trigwell & Shale, 2004).

In his text, Boyer (1990) devoted very little space to the scholarship of teaching. In fact, only a few pages related specifically to this topic. However, the book continues to serve as a catalyst for encouraging faculty to examine their teaching and its subsequent impact on student learning. Though many have added to Boyer's initial ideas, *Scholarship Reconsidered* is deemed a seminal text and significant to the field of teacher inquiry at the university level.

The growth and clarification of Boyer's ideas has not occurred without tension. Perhaps most significantly, this type of practitioner research is now recognized by the name the *scholarship of teaching and learning*, or by its acronym, SoTL. Many argue that Boyer's original label and its emphasis on teaching implied that the teacher was the most important aspect of the teaching and learning process, and that although faculty do play a significant role, the truly important aspect is student learning (Keeling & Hersh, 2011; Ramsden, 2003; Smith, 2008; Weimer, 2006). Thus, over time the name transformed to more adequately reflect this importance.

Boyer's meager description also resulted in other substantial issues. Some were unsure as to what was intended by the definition and frustration arose around the ambiguity of Boyer's label (Boshier, 2009; Hutchings & Shulman, 1999). Others, especially those in hard sciences, questioned how this type of work might fit within their disciplinary frameworks (Connolly, Bouwma-Gearhart, & Clifford, 2007). Consequently, scholars continue to work towards clarifying Boyer's original intention (Smith, 2012).

With various individuals attempting to clarify the meanings grounding SoTL research, differences have emerged and a single unifying definition does not exist (McKinney, 2006). However, common values bridge the various understandings, and there is currently general consensus that a range of conceptions is appropriate for the diverse forms of research falling under the designation of SoTL (Trigwell, 2013). Despite existing differences, Trigwell and Shale (2004) offer several key ideas commonly seen in discussions related to the scholarship of teaching and learning, and state that SoTL:

- Contains both descriptive and purposive components
- Provides a means through which the status of teaching may be raised
- Encourages teachers to teach more knowledgeably
- Provides a means through which the quality of teaching can be assessed
- Should serve to enhance the learning experience for university students

Furthermore, it is also common to see SoTL described as research related to teaching and learning that is made public, is open to critical review, and becomes part of the teaching commons so that others may build upon it (Hutchings & Shulman, 1999; Shulman, 1998).

The potential of SoTL. Just as teacher inquiry is demonstrated to be impactful and transformative in PreK-12 environments, teacher inquiry at the university level has the potential to positively influence teaching and learning on university campuses. SoTL research benefits both instructors and students (Weimer, 1997). Students are likely to perform better in classes where research-based teaching practices are used (Smith, 2008), and when done well, teacher inquiry can be empowering for professors (Huber & Hutchings, 2005; Trigwell, 2013). By engaging in the scholarship of teaching and learning, faculty direct their own growth, and faculty developers might better understand how researchers develop as teachers (Nicholls, 2000).

Dimensions of Activities Related to Teaching

Despite the increased attention proffered the scholarship of teaching and learning since Boyer's (1990) publication of *Scholarship Reconsidered*, Kern et al. (2015) contend that "some confusion persists with regard to SoTL's role in the academy in terms of its placement within the wide array of teaching-related activities" (p. 1). As such, they present a model of the Dimensions of Activities Related to Teaching (DART) which provides a context for SoTL—as well as other teaching-related activities—along two dimensions: private to public tasks and informal to systematic tasks. As Figure 2 shows, these dimensions create quadrants of teaching activities which portray various aspects of teacher inquiry ranging from those considered informal and private to those deemed systematic and public.

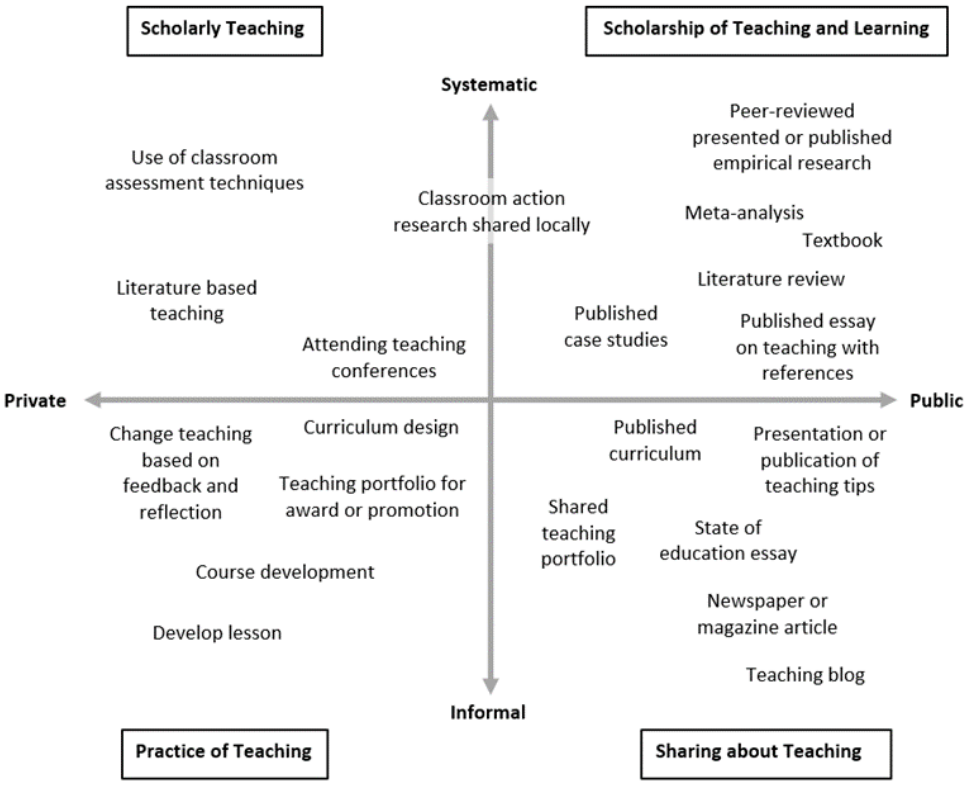

Figure 2. Dimensions of Activities Related to Teaching. Adapted from "The Role of SoTL in the Academy: Upon the 25th Anniversary of Boyer's Scholarship Reconsidered," by B. Kern et al., 2015, *Journal of the Scholarship of Teaching and Learning, 15*(3), p. 5.

Practice of Teaching

According to the Dimensions of Activities Related to Teaching (DART) model (Kern et al., 2015) the *practice of teaching* quadrant includes teacher inquiry activities commonly falling toward the more informal and private ends of the spectrum. These teacher inquiry activities are often documented for purposes of "annual evaluation, tenure, promotion, and teaching awards" but are typically shared only "within the confines of an institutional setting" (Kern et al., 2015, p. 5). According to Kern et al. (2015), "Excellent teachers are quite likely to engage in reflection about any problems they notice…and to implement change based on reflection. However, within this quadrant these changes are based on their own intuition or discussions with colleagues" (p. 6). In this area of inquiry, assessments of whether or not change has occurred generally comes only from changes in student evaluation data. One's teaching might be discussed with a peer or

colleague from the university teaching and learning center, but teaching results are not systematically assessed or shared publically.

Sharing about Teaching

According to Kern et al. (2015), "Activities in the *sharing about teaching* quadrant are very similar to those in the [*practice of teaching*] quadrant except that faculty share their challenges, innovations, and successes with others" (p. 6). Many teaching articles, workshops, and blogs that share seemingly successful teaching strategies and anecdotal evidence of student learning fall into this category, many of which originate with a particular problem or issue. This category encompasses important work and encourages a discourse that can lead to formal SoTL work. However, work falling within this category does not incorporate literature pertaining to teaching and learning and rarely involves systematic investigation.

Scholarly Teaching

Kern et al. (2015) describe *scholarly teaching* as, "Explorations of teaching and learning [that] may begin with a particular issue or problem but then move to exploring the current relevant research" (p. 6). Reading relevant research, attending teaching conferences, and talking to educational scholars are all viewed as means to anchor teaching in evidence-informed conclusions. Work in this category is also more systematic in assessing results, as opposed to more anecdotal or student-evaluation driven; yet it remains a somewhat private undertaking. As Richlin and Cox (2004) describe:

> The purpose of scholarly teaching is to affect the activity of teaching and the resulting learning, while the scholarship of teaching results in a formal, peer-reviewed communication in appropriate media or venues, which then becomes part of the knowledge base of teaching and learning in higher education. (p. 128)

Scholarship of Teaching and Learning (SoTL)

Faculty conducting the scholarship of teaching and learning engage in inquiry in a manner similar to that found when conducting disciplinary research. Representative of both

systematic and public dimensions, SoTL serves to build the knowledge and theory base of university teaching. Work representative of this quadrant might be a meta-analysis, a literature review, an essay, or an empirical qualitative or quantitative study. Regardless of form, it is clearly systematic and public in its endeavor (Kern et al., 2015).

Self-Determination Theory

Despite the importance and rewards afforded disciplinary research, some within the university system choose to conduct teacher inquiry. Even when facing significant barriers and lack of institutional support, a number of instructors add to the collective teaching commons through their investigations pertaining to teaching and learning. This study aims to understand the rationales provided for undertaking such work through application of Deci and Ryan's (2000) self-determination theory.

Intrinsic versus Extrinsic Motivation

Motivation is often characterized using the binary distinctions of intrinsic versus extrinsic forms. Intrinsic motivation is described as choosing to do something because it is inherently satisfying, interesting, or enjoyable (Ryan & Deci, 2000). Since intrinsic motivation has been demonstrated to result in deep learning and significant creativity, the factors that facilitate or undermine it are often studied (Ryan & Deci, 2000). Conversely, extrinsic motivation is often portrayed as the antithesis of intrinsic motivation. When an action occurs as the result of external forces, such as to gain a reward or to avoid a punishment, it is considered extrinsically motivated (Ryan & Deci, 2000). Self-determination theory suggests that motivation involves more than this binary and is shaped by feelings of competence, relatedness, and autonomy (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000).

Self-Determination Theory's Continuum of Motivation

Although intrinsic motivation is viewed as the ideal for stimulating interest and engagement, extrinsic motivation plays a significant role in the lives of adults (Deci et al., 1991; Ryan & Deci, 2000). In addition, Ryan and Deci (2000) argue that "extrinsic motivation can vary

greatly in the degree to which it is autonomous" (p. 60). In other words, extrinsically motivated tasks may be internalized to the degree that they begin to reflect intrinsically motivated tasks. Figure 3 represents Deci and Ryan's (2000) self-determination continuum which illustrates these varying degrees of motivation. This continuum characterizes motivation as a construct that varies based on one's perceived locus of causality, which is affected by feelings of relatedness, competence, and autonomy (Ryan & Deci, 2000).

Behavior	Nonself-determined					Self-determined
Type of Motivation	**Amotivation**	**Extrinsic Motivation**				**Intrinsic Motivation**
Type of Regulation	Non-regulation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Perceived Locus of Causality	Impersonal	External	Somewhat External	Somewhat Internal	Internal	Internal

Figure 3. Self-determination continuum. Adapted from "The 'What' and 'Why' of Goal Pursuits," by E. L. Deci and R. M. Ryan, 2000, *Psychological Inquiry, 11*(4), p. 237.

Amotivation. The far left side of the continuum represents amotivation which is defined as "lacking an intention to act" (Ryan & Deci, 2000, p. 61). When an activity is not valued (Ryan, 1995) or when a person feels incompetent to complete it (Deci & Flaste, 1995), amotivation often results.

Extrinsic motivation. A range of extrinsic motivations lie to the right of amotivation and these represent varying degrees of perceived autonomy. Externally regulated tasks are the least autonomous and are performed to "satisfy an external demand" or "obtain an externally imposed reward contingency" (Ryan & Deci, 2000, p. 61). Introjected regulation is also somewhat externally motivated because tasks are completed "in order to avoid guilt or anxiety or to attain ego-enhancements or pride" (Ryan & Deci, 2000, p. 62). The next two extrinsic categories are considered more autonomous and self-determined. Tasks falling within the realm of identified

regulation are those assigned personal importance because they align with something one values or because they support a greater goal (Ryan & Deci, 2000). Finally, integrated regulation is the most autonomous of the extrinsic motivations and represents tasks undertaken that have been "fully assimilated to the self" (Ryan & Deci, 2000). This means the extrinsic goal is internalized to the degree that actions feel self-determined and autonomous, often mimicking the feelings of intrinsic motivation (Deci et al., 1991; Ryan & Deci, 2000).

Intrinsic motivation. The far right side of the continuum reflects intrinsic motivation or fully autonomous, self-determined forms of regulation and causality, which are often revealed through processes of choice (Deci et al., 1991; Ryan & Deci, 2000).

Summary

Chapter two provided a review of the literature pertaining to teacher inquiry in higher education. It outlined neoliberal influences affecting university faculty and discussed faculty preparedness for teaching as well as university teaching development. Furthermore, it offered evidence of the potential of teacher inquiry as meaningful faculty development. Finally, it described self-determination theory as a mechanism for examining the factors that prompt teacher inquiry at the university level. Collectively, this chapter offered evidence that the study of teacher inquiry at the university level is a worthwhile endeavor.

CHAPTER III

METHODOLOGY

There is a great difference between knowing and understanding: you can know a lot about something and not really understand it.

–Charles Kettering (Stoddard, 2011)

As the Kettering quote suggests, there can be a significant difference between *knowing* and *understanding,* and this difference underscores my decision to conduct qualitative case study research. Qualitative case study methodology allows one to portray unique understandings of participants and has the ability to convey individual stories in experiential terms; this makes it an ideal choice for a study aiming to advance understanding of a particular phenomenon (Lincoln & Guba, 1985; Merriam, 1998; Stake, 2010). In addition, several key features of qualitative research—the manner in which it attempts to interpret the meanings of human affairs, the importance it ascribes to individual perceptions, and the way it embraces the uniqueness of context—resonate with the purpose of this study because each conveys the importance of situating individual experience within collective knowledge (Stake, 2010).

Research Questions

The purpose of this study was to examine the experiences of university instructors who conduct teacher inquiry and to explore the influence of this work on pedagogical practices and

to explore the influence of this work on pedagogical practices and beliefs. This purpose elicited three research questions that guided the study:

1. What is the meaning of teacher inquiry in a university setting?
2. What rationale do university instructors provide for conducting teacher inquiry?
3. How are instructors' pedagogical practices and beliefs influenced through the process of conducting teacher inquiry?

In seeking answers to these questions, I hoped to gain a better understanding of the meanings university instructors attach to teacher inquiry experiences and explore the ways university culture affects instructors' choices regarding this work. The following pages outline the research design, research methods, and ethical considerations underpinning the study.

Research Design

The ontological and epistemological philosophies guiding this qualitative case study are grounded in constructivism. A constructivist perspective is based on the notion of created realities. That is, although different individuals may agree on the same formal definition for a given situation or phenomenon, the situation may mean something different to each due to variances in the ways these understandings are individually constructed (Lincoln, 2005; Lincoln & Guba, 1985). As Lincoln and Guba (1985) state, "Events, persons, objects are indeed tangible entities. The meanings and wholeness derived from or ascribed to these tangible phenomena in order to make sense of them, organize them, or reorganize a belief system, however, are constructed realities" (p. 84). Stake (2010) further clarifies this belief system in stating, "There is only the event as experienced or interpreted by people" (p. 66).

University teaching is a complex, multi-faceted endeavor involving significant differences in interpretation (Akerlind, 2004; Pedrosa-de-Jesus, Guerra, & Watts, 2017; Weimer, 2006). A quantitative approach to inquiry would likely not capture the complexities of issues that prompt instructors to study their teaching despite significant barriers and uncertain rewards. Instead, use of a qualitative approach provides an opportunity for understanding the nuances of

what Stake (2010) refers to as "how things work in certain contexts, at certain times, with certain people" (p. 14).

Case Study

Case study allows the researcher to gain a holistic, real-world perspective (Lincoln, 2005; Merriam, 1998; Yin, 2014) while depicting both the common and the particular (Stake, 1994). Yin (2014) maintains, "The distinctive need for case study research arises out of the desire to understand complex social phenomena" (p. 4), and this seems a fitting justification for a study that investigates varying experiences of university faculty who conduct teacher inquiry in the midst of an increasingly complex mechanism of higher education. Case study also seems especially appropriate because it allows for exploration of the multiple meanings and understandings that university faculty possess. Finally, case study blends nicely with constructivist ideologies that underscore the work because as Stake (2010) explains, "Multiple interpretations provide a depth of understanding" (p. 66).

Yin (2014) offers a twofold definition that delineates case study research in terms of scope and features:

1. A case study is an empirical inquiry that
    - investigates a contemporary phenomenon (the "case") in depth and within its real-world context, especially when
    - the boundaries between phenomenon and context may not be clearly evident.
2. A case study inquiry
    - copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result
    - relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result

- benefits from the prior development of theoretical propositions to guide data collection and analysis. (pp. 16-17)

Case study research may be further delineated into categories of *intrinsic*, *instrumental*, and *collective* (Stake, 1994). An intrinsic case study aims to illustrate a unique or atypical situation whereas instrumental case study serves to illustrate an issue, problem, or concern. When instrumental case study extends to include several cases so that a number of cases may be studied jointly, it is considered collective case study (Stake, 1994). Since this study includes purposefully selected participants who demonstrate varying perspectives of a single phenomenon, it would best be described as collective case study research.

Research Methods

Methodological procedures regarding participant selection, data collection, and data analysis reflect an attempt to capture what Stake (2010) describes as representations of "personal experience in particular situations" (p. 88).

The Research Setting

The study took place at a Midwestern land grant university (LandGrant U), originally founded as an agricultural and mechanical school as a result of the Morrill Act. LandGrant U is currently classified as a 'doctoral university with higher research activity' (The Carnegie Classification of Institutions, 2017) and is listed among the top 100 public universities based on measures of academic quality and affordability (Kiplinger's Best College Values, 2017). Centrally situated between the state's two largest cities, LandGrant U is located in a rural community with a population that hovers around 50,000 residents; however, the town often feels larger than its reported population because loyal alumni return in droves to attend sporting and homecoming events. Practically everyone in the near vicinity maintains some connection to LandGrant U because it is the area's largest employer.

The main campus has an enrollment of just over 24,000 students— nearly 22,000 of which are undergraduates—and offers approximately 200 undergraduate degrees through six

academic colleges: 1) Agricultural Sciences and Natural Resources, 2) Arts and Sciences, 3) Education, Health and Aviation, 4) Engineering, Architecture and Technology, 5) Human Sciences, and 6) School of Business.

The mission and vision. LandGrant U is proud of its heritage and supports extension offices that serve all 77 counties in the state. The belief in an ability to improve the lives of others through teaching, research, and outreach is indicated by both the university's mission and vision statements. According to its mission, "Building on its land-grant heritage, [LandGrant U] promotes learning, advances knowledge, enriches lives, and stimulates economic development through teaching, research, extension, outreach, and creative activities" (Institutional Accreditation, 2018). The importance of serving others is further evidenced by the university's vision statement, "[LandGrant U] will lead in the creation of a better [state], nation, and world by advancing the quality of life for all, and will fulfill the obligations of a first-class, land-grant educational institution" (Institutional Accreditation, 2018).

Academics. In addition to bettering the lives of those beyond the university, LandGrant U expects that faculty will offer a "challenging academic culture…providing academic experiences that are learner centered, scholarship based, globally oriented, service focused, and technologically facilitated" (Division of Academic Affairs, 2018). Students are asked to provide feedback regarding their classroom experiences to faculty and departments via end-of-course surveys which are handled by LandGrant U's office of University Assessment and Testing. Most commonly referred to as SSI data, this 'Student Survey of Instruction' is requested from every student, for each class taken, prior to final exam week, and instructors receive the results of student surveys once the semester's grading period closes (Student Survey of Instruction, 2018).

The Research Participants

Participants were selected using purposeful sampling procedures. According to Merriam (1998), "Purposeful sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be

learned" (p. 61). Criteria bounding the case guided participant selection and required that study participants be instructors at a LandGrant U who had conducted, or were currently conducting, teacher inquiry. This means professors were selected based on the fact that they had intentionally studied some aspect of their own teaching or had engaged in thoughtful analysis regarding some facet of instruction. In addition, this purposeful sampling would be described as typical sampling because participants reflected "the average person, situation, or instance of the phenomenon of interest" (Merriam, 1998, p. 62).

My work with the university's faculty development center afforded the opportunity to know faculty on campus who had deliberately studied their own teaching, and this is how potential participants were identified. Seven faculty were contacted regarding this study and six chose to participate. These participants represented four of the six university colleges: one from Education, Health and Aviation, two from Engineering, Architecture and Technology, one from Agricultural Sciences and Natural Resources, and two from Arts and Sciences. Two participants were women—one from Arts and Sciences and one from Education, Health and Aviation—the other four participants were men. Two participants were Indian and received undergraduate degrees in India before coming to graduate school in the United States; all other participants were Caucasian and received their schooling solely in the United States. At the time of this study, although participants possessed a range of experiences, each held the rank of Assistant Professor. Selection of participants who held the same rank was purely coincidental, although one might argue that there is something significant in this occurrence.

Data Collection

Data were collected through protocol writings, individual interviews, focus group interviews, and analysis of documents.

Protocol writing. Protocol writing is borrowed from phenomenological methodologies and described by van Manen (1997) as "the generating of original texts on which the researcher can work" (p. 63). Such writing provides an opportunity for reflection, offers direct accounts of

personal experience, and supplies researchers with "a lived-experience description" of the phenomenon being studied (van Manen, 1997, p. 64). In this study, participants were asked to write a brief response based on the following protocol writing prompt (see Appendix A):

Reflect on your experiences conducting teacher inquiry. In what ways has the process of teacher inquiry affected you and your teaching?

Individual interview. Researchers conduct interviews for a variety of reasons, including the purposes of obtaining unique information or discovering interpretations held by the interviewee (Stake, 2010). Furthermore, interviews reveal information that might otherwise remain unobservable (Merriam, 1998; Stake, 2010).

Participants took part in brief individual interviews once their protocol writing samples had been completed, with the exception of Professor Atwell who supplied his protocol writing after our interview. Each interview was conducted in a face-to-face format and required approximately one hour per participant. Questions were prepared in advance, but posed in a manner resembling purposeful conversation with the goal of eliciting detailed responses and opinions. Each interview was audio recorded and transcribed. Individual interviews began with the following semi-structured, open-ended questions (see Appendix B):

1. Could you tell me a bit about your current position?
2. What are the expectations of you in terms of teaching, research, and service?
3. What prompted you to conduct an inquiry into teaching?
4. How did you go about conducting your teacher inquiry?
5. In what ways, if any, did your inquiry affect your teaching or other aspects of your professional life?

During each interview, further questions were posed in response to a participant's replies. These additional questions served to clarify and extend participants' answers.

Focus group interview. Following individual interviews, participants were invited to take part in a 60-minute focus group interview. Due to participants' availability, two separate

focus group interviews were held with three faculty members attending each. These interviews were semi-structured and fluid, following the direction of participants' conversations.

The focus group interview was not meant to replace the individual interview, but rather was intended to elicit another level of perspectives that might not have been captured through individual conversations (Fontana & Frey, 1994). According to Fontana and Frey (1994), use of focus group interviews is advantageous because these interviews are typically data rich, useful in aiding recall, and elaborative beyond the point of individual interviews. However, these interviews can also be difficult because the researcher serving as moderator must remain cognizant of the challenges associated with group dynamics (Fontana & Frey, 1994; Krueger & Casey, 2009). In light of the potential difficulties associated with focus group interviews, these visits took place in a quiet conference room, were audio recorded, and then immediately transcribed. Questions posed during focus group interviews included (see Appendix C):

1. Would you each introduce yourselves and offer a brief elevator talk regarding your teacher inquiry?
2. How do you perceive teacher inquiry research as being received by others, such as colleagues, administrators, and students?
3. Would you discuss some of the positive, negative, or surprising experiences you had while conducting this research?
4. Some instructors describe barriers or difficulties to completing this type of research. Did you find anything associated with this work to be particularly challenging?
5. What types of support might have benefited you as you conducted teacher inquiry?

Documents. Lincoln and Guba (1985) describe documents as written or recorded materials that were not prepared in response to a request from the researcher. Some participants voluntarily shared documents (e.g., Student Survey of Instruction data and course syllabi). These documents served to support participants' written and verbal responses.

A note regarding data sources. The bulk of the data came from participants' written protocol responses and individual interviews. As such, the majority of quotations shared within the body of the findings originated from these two sources. Focus group comments served to reinforce what was found in the individual interviews and document analysis played only a minor role in my account of the data.

Data Analysis

A constant comparative means of analysis (Boeiji, 2002; Glaser, 1965) was used to systematize the processes of data collection, coding, and appraisal throughout the study. Application of this type of analysis caused new data to be considered in relation to previous data and relevant evidence underwent repeated cycles of comparison and reflection. Throughout this process, potential codes, categories, themes, and connections were generated (Boeije, 2002). The decision to use constant comparative analysis was based on the assertion that findings are more likely to be regarded credible and trustworthy when data collection, coding, and analysis are enacted as interactive and iterative processes (Creswell, 2013; Merriam, 1998) as well as the concern that paralyzing fear can grip the novice researcher who has overwhelming amounts of data to consider (Huberman & Miles, 1994; Saldaña, 2016; Stake, 2010).

Organizing, preparing, and reading data. As with most qualitative research, information management was an important component of the analysis process (Creswell, 2013; Huberman & Miles, 1994; Saldaña, 2016). For this study, data were organized within word processing documents that employed formatting similar to the three-column table described by Liamputtong and Ezzy (2005). In each table, the first and largest column contained the raw data—transcripts, personal notes, and so forth. A second smaller column provided space for initial coding notes and marginalia, and the third column was reserved for final codes. During the beginning stages of preparing, organizing, and reading data, reflections were kept regarding the data overall and the larger ideas that seemed to be emerging (Merriam, 1998; Stake, 1994; Yin, 2014).

Analytic memos were written in order to document my reflections concerning development of key impressions. These memos connected thinking with writing in order to capture my ideas. As recommended by Saldaña (2016), reflections within analytic memos pertained to my coding processes, my perceptions of emergent patterns, categories, and themes, my thoughts connecting the relationships among data and theoretical frameworks, and general musings regarding the unfolding of the study. Essentially, I followed Saldaña's (2016) suggestion that, "Whenever *anything* ...significant comes to mind, stop whatever you are doing and write a memo about it immediately" (p. 45).

Coding data and generating themes. Because this study aimed to understand the experiences of university instructors who conduct teacher inquiry research and examine this work in terms of instructors' pedagogical practices and beliefs, coding methods that revealed personal, interpretive meanings were appropriate. Additionally, since both the process of teacher inquiry and the factors prompting teacher inquiry were explored, coding methodologies that revealed processes and perceptions were also important. As a result, the first cycle coding methodologies of Structural Coding, In Vivo Coding, and Values Coding as described by Saldaña (2016) were used. Focused Coding and Axial Coding served as second cycle coding techniques in order to determine categories of primary and secondary themes. Finally, consideration of missing themes occurred. In each situation, the frameworks of self-determination theory (Ryan & Deci, 2000), Kugel's (1993) stages of university teaching growth, and/or the model of Dimensions of Activities Related to Teaching (Kern et al., 2017) served to guide and focus my coding.

Since this research involved collective case study, analyses took place both within and across cases. During within-case analysis, each case was treated as comprehensive in and of itself. Once analysis of each individual case was complete, cross-case analysis was done in order to make general comparisons and to search for patterns across cases (Creswell, 2013; Huberman & Miles, 1994; Merriam, 1998).

First cycle coding. Structural Coding served as one mechanism of first cycle coding. Structural Coding applies a conceptual phrase—such as *meaning of teacher inquiry*—to a segment of data that relates to a specific research question (Saldaña, 2016). According to Saldaña (2016), Structural Coding is particularly appropriate for studies with multiple participants and semi-structured data-gathering protocols because it "both codes and initially categorizes the data corpus to examine comparable segments' commonalities, differences, and relationships" (p. 98).

In Vivo Coding was also used as a method of first cycle coding. In Vivo Coding involved the labeling of relevant data via participants' own words and phrases (Saldaña, 2016). According to Saldaña (2016), In Vivo Coding is especially useful when a study aims to "prioritize and honor" (p. 106) participants' voices.

Finally, Values Coding was used to examine participants' attitudes, values, and beliefs concerning pedagogy and teacher inquiry. Saldaña (2016) suggests the following definitions be used when applying Values Coding:

- Values—the importance we attribute to oneself, another person, thing, or idea
- Attitude—the way we think and feel about ourselves, another person, thing, or idea
- Belief—part of a system that includes values and attitudes, plus personal knowledge, experiences, opinions, prejudices, morals, and other interpretive perceptions of the social world. (p. 298)

According to Saldaña (2016), Values Coding is not only beneficial for identifying values, attitudes, and beliefs, but is also especially appropriate when exploring "participant experiences and actions in case studies" (p. 132).

Second cycle coding. The goal of second cycle coding was to develop a sense of organization from first cycle coding and analysis in order to further categorize and crystallize analytic work (Saldaña, 2016). Essentially, through a process of second cycle coding, determinations took place regarding "how everything fits together" (Saldaña, 2016, p. 234). Focused Coding and Axial Coding were used as second cycle coding methods.

According to Saldaña (2016), “Focused Coding searches for the most frequent or significant codes to develop the most salient categories in the data corpus” (p. 240). The use of Focused Coding resulted in the development of major categories and themes and allowed me to create overarching categories and subcategories (Saldaña, 2016). Axial Coding extended the analytic work of Focused Coding in order to determine which categories were dominant and which were less so, with the ultimate goal of achieving saturation (Saldaña, 2016).

Trustworthiness of Findings

Previous descriptions of the ethical usage of qualitative research methodologies were meant to offer assurances that an authentic inquiry was conducted and reported. The implication of truthful research is further supported through evidence of credibility, transferability, dependability, and confirmability—criteria that provide an overall sense of trustworthiness (Erlandson et al., 1993; Lincoln & Guba, 1985).

Credibility. Credibility can be operationalized through prolonged engagement, persistent observation, and triangulation of data (Lincoln & Guba, 1985). Both prolonged engagement and triangulation of data were recognized in this study. Prolonged engagement pertained to investing sufficient time to build trust, establish context, and recognize distortions within data (Lincoln & Guba, 1985). Seeking participants who had previously interacted with the university faculty development center and spending significant time with participants during individual and group interviews reflect the importance of developing trust and rapport through prolonged engagement.

Triangulation was established through the use of multiple methods or sources of information (Creswell, 2013; Erlandson et al., 1993; Lincoln & Guba, 1985). Verifying findings using corroborating evidence from varying sources, employing peer debriefing sessions, and utilizing member checks were methods of triangulation (Creswell, 2013; Lincoln & Guba, 1985; Merriam, 1998) used to establish credibility in this study.

Transferability. Transferability refers to the likelihood that results from one qualitative study may be applied to other similar contexts (Lincoln & Guba, 1985). A researcher cannot

specify transferability, but can provide thick, rich description that allows a reader to discern possible relevance (Erlandson et al., 1993; Lincoln & Guba, 1985). For this study, descriptive information was provided in order to accurately represent the pertinent information.

Dependability and confirmability. Dependability refers to the study's ability to be repeated, and confirmability refers to the degree to which a study's findings would be consistent with another person's interpretation of the data (Erlandson et al., 1993; Lincoln & Guba, 1985). In both cases, an audit of transcripts, notes, and documents would serve to verify findings, and these items are readily available. Furthermore, providing a discussion of my own biases and remaining fully transparent in my approach to this study increase the potential for the study to be viewed as dependable and confirmable work.

Ethical Considerations

As an ethical qualitative researcher, it is imperative to respect those whose personal views will be shared. Participants' experiences must be accurately, yet confidentially, portrayed and participants' rights must be protected. Adhering to the Institutional Review Board guidelines is a necessary but not sufficient condition for conducting ethical qualitative research. As Stake (1994) maintains, "Qualitative researchers are guests in the private spaces of the world. Their manners should be good and their code of ethics strict" (p. 244).

Researcher Bias

Stake (2010) maintains, "Each of us is more than a researcher. We are complex human beings [with] political, spiritual, aesthetic, and other advocacies" (p. 202). Unquestionably, my background in PreK-12 education and faculty development, as well as my passion for the field of curriculum studies, strongly influence my worldview and advocacies. I am mindful of several advocacies common in qualitative studies that are important to me—caring about research participants, caring about research methods, and advocating democratic ideals (Stake, 2010) — and I continually reflected on these biases while conducting the study.

According to Stake (2010), qualitative researchers often care about the groups they work with and are disposed to see successes. In my case, I recognize that I care about those teaching in higher education and I want them to experience success as instructors. I admire those who study their own teaching, especially since literature indicates that rewards for such efforts are often limited.

Stake (2010) also suggests that qualitative researchers care about methodology and that, "Our methods are an advocacy we flaunt" (p. 201). I recognize myself in this statement. Not only do I favor methods that reveal a story, but I also appreciate practitioner inquiry. I am bothered by the disconnect commonly portrayed between researchers and practitioners, and am troubled by the perception that some research is privileged as *real* research while other forms of research are disregarded.

Finally, qualitative researchers are commonly advocates of democratic ideals and case study researchers often attempt to stimulate action (Stake, 2010). Personally, I imagine higher education as a democratizing force and worry about influences that function to undermine this purpose. I am concerned by neoliberal policies that promote privatization, commodification, and deregulation (Giroux, 2014) and am increasingly concerned that such policies negatively impact those teaching in higher education.

Ethical Research Methodology

Stake (2010) argues that it is insufficient, "just to continue being the nice people we are" (p. 206) when striving to adequately protect research participants. Yet, it would seem irresponsible to neglect mentioning the importance of exhibiting some manner of personal care for those included within the body of this study. My overarching ethical principle is 'do no harm' which I believe manifests itself in myriad ways. Particularly, as is commonly the case in qualitative research, specific ethical considerations include protecting research participants, limiting intrusions, and reporting data as honestly as possible (Lichtman, 2010; Merriam, 1998; Stake, 2010).

Data collection ethics. The nature of this study caused the researcher to "enter the spaces of personal experience" (Stake, 2010, p. 208). Because of this, it was important to be cognizant of intrusions while striving to be as unobtrusive as possible. Intrusions on time, space, and personal lives are important elements of the process of data collection (Lichtman, 2010), and honest time estimates, negotiated meeting locations, and establishment of trustworthy researcher-participant relationships were important considerations.

Teaching is a personal process and reflecting on one's teaching can cause moments of discomfort. To the best of my ability, participants were informed of this possibility. Participants were also told that withdrawal from the study could occur at any time without threat of coercion or repercussions. For those who chose to participate, a reasonable expectation of both institutional and individual anonymity was guaranteed and confidentiality will be maintained.

Data analysis and interpretation ethics. Introspection of personal biases is vital when analyzing and interpreting data (Stake, 2010). I realize that I am impacted by my own predispositions, but I endeavored to honestly interpret and convey data in ways that accurately represent the experiences of participants. Evidence of credible interpretation of information is provided through triangulation of data (Erlandson et al., 1993; Lincoln & Guba, 1985).

Limitations of the Study

Limitations of this study are common to many qualitative research studies. The small number of study participants, issues of generalizability, and implicit researcher bias are all limitations that I have attempted to mediate through design. However, perhaps the most significant limitation relates to the researcher as a key instrument. As Merriam (1998) states, "The investigator as human instrument is limited by being human…mistakes are made, opportunities are missed, personal biases interfere. Human instruments are as fallible as any other research instrument" (p. 20). While a researcher attempts to share the case's own story, Stake (1994) reminds us that it is "the researcher's dressing of the case's own story" (p. 240) that is ultimately shared.

It is important to note that I provide teaching support for instructors on campus through the university's faculty development center. However, in this study I attempted to represent the substance of professors' teacher inquiry experiences with little mention of the connections to our department in general or to my work specifically. This research is not intended to be my own teacher inquiry, nor is it intended to be self-serving. Because of this, data pertaining to the faculty development center are presented only when the substance seems especially noteworthy and I believe I would be remiss to exclude the information.

Summary

Chapter three outlined the proposed model for researching teacher inquiry in higher education. It described the research setting and research participants. Furthermore, this chapter explained the research design, research methods, and ethical considerations deemed appropriate for this study.

CHAPTER IV

PRESENTATION OF DATA

One engages in acts of epistemic curiosity not because one wants to solve and set aside a focused question, but because the quest is its own reward, and the knowledge that the quest is ongoing is enticing.

–Sarah Cavanagh, *The SPARK of Learning*, pp. 125-126

I like that I'm in a position where I can start to think about a thing that went well and try to repeat it rather than find things that are wrong and fix them. That's exciting.

–Professor Meyer

The purpose of this study was to examine the experiences of university instructors who conduct teacher inquiry and to explore the influence of such work on instructors' pedagogical practices and beliefs. Chapter Four presents the collected data and situates it within the current climate of state-level politics.

The chapter begins with a brief description of the present situation facing those associated with LandGrant U and offers a detailed description of each study participant. Next, the various meanings of teacher inquiry and the motivations prompting these inquiries are offered. Finally, data revealing the influences of teacher inquiry on instructors' pedagogical practices and beliefs are described.

State-Level Politics and Higher Education

Striving to keep tuition and fees below the regional average while maintaining high aspirations has become a struggle at LandGrant U. However, such struggles are not entirely unlike those currently faced by other public entities within the state. Located in a region that traditionally relies on oil and gas production for the majority of state revenues, the fiscal climate of state agencies is greatly impacted by the ebb and flow of the fossil fuel industry. In addition, years of neoliberal policies have created a scenario in which large corporations appear to have benefited more than the state's average citizen, with the state currently ranking near the bottom of national averages for spending related to education (National Education Association, 2017) and health care (United Health Foundation, 2017), but near the top of national averages for poverty rates (Bishaw & Benson, 2017), opioid addiction (Centers for Disease Control and Prevention, 2017), and incarceration rates for both women and men (Sawyer, 2018; The Sentencing Project, 2017).

Funding for essential state services has decreased considerably in recent years, with state appropriations in fiscal year 2018 positioned approximately $1 billion less than in fiscal year 2003 (Hargis, 2018). Media attention commonly references the plight of funding for the state's public PreK-12 system (Eaton, 2018; Eger, 2016; Job, Dickey, Kirk, McCrackin, & Morris, 2017), but higher education has also been especially hard hit, experiencing a decrease in state funding of nearly 22% since 2014 (Hargis, 2018).

At LandGrant U, attempts to alleviate the negative ramifications of decreased state funding have involved increasing student enrollment numbers and strategically implementing cost-saving measures, such as promoting energy saving mechanisms and outsourcing custodial services (Hargis, 2018). In addition, it has become commonplace for many departmental positions to remain unfilled due to attrition, leaving those who are left behind to assume greater amounts of responsibility in order to keep departments afloat. Faculty at LandGrant U commonly share circumstances that demonstrate the ways in which they are asked to do considerably more with

significantly less. Despite these measures, students' tuition and fees have recently increased and it is expected that barring significant changes at the state level, these increases are likely to happen again.

The Participants

It is within this worrisome situation of perpetual funding decreases that these six participants find themselves (see Table 1). Regardless of department, each is expected to make significant contributions in terms of research, teaching, and service while operating on a shoestring budget.

Table 1

Overview of study participants

Professor	Gender	Teaching Experience	Inquiry Topics	College
Voss	Female	20 years (12 years in K-12)	• Team-based learning • How collaboration influences students' thinking	Education, Health & Aviation
Singh	Male	6 years	• Active learning techniques	Engineering, Architecture and Technology
Atwell	Male	8 years	• Modifying laboratory classes	Engineering, Architecture and Technology
Hollman	Male	19 years	• Alternative assessments • Engagement in large classes • How students' perceptions change over time	Agricultural Sciences and Natural Resources
Pravi	Female	8 years	• Student engagement • Active learning techniques • Assessment	Arts and Sciences
Meyer	Male	4 years	• Impact of aligning course goals, assignments, and assessments	Arts and Sciences

Professor Voss

Professor Voss is an Assistant Professor in the College of Education, Health and Aviation. Currently in the fifth year of her appointment, she teaches five classes per year. Due to

a confluence of unexpected circumstances—the retirement of one faculty member, the recruitment of a second back to her home country, and a third losing a battle with cancer—Professor Voss quickly progressed from being the junior member in her program area to being the senior faculty member in the midst of her second year.

Since hers is a graduate level program, much of the work she does involves mentoring graduate students who are learning to conduct research—a time consuming endeavor when done well. Although two new faculty members have recently been hired, only three faculty members are responsible for advising more than 40 graduate students. For Professor Voss, this work is done in addition to fulfilling research, service, and teaching responsibilities, as independent study and/or thesis hours in which a student enrolls are considered outside a faculty member's load. No additional compensation is offered for graduate student advising within this department.

Evaluation metrics. Perceived accomplishment in each area of responsibility is described as "very blurry" because attempts at clarity often "create other issues." An acceptable level of productivity in research is currently described as "a minimum of, on average, one scholarly publication in a well-respected journal" each year. However, Professor Voss follows by saying, "…but everyone knows that one probably isn't enough." Current expectations of service are met through committee work in "service to the program and to the college." Outreach is not discouraged, but there are presently no outreach initiatives underway, something Professor Voss attributes to the junior state of faculty as opposed to the program itself. As she states, "I'm the most senior person in my program and I don't even have tenure yet. To be able to cultivate outreach programs, I think you have to have built relationships and you have to have rapport with people." She describes integration into the community as something she believes faculty would like to have—and likely will have—once they become senior faculty. Members of her department are also encouraged to apply for grant monies, but she does not see grant procurement as consequential to keeping a position.

Evaluation of teaching is a bit complicated in her program area as well. When asked if there was an expectation of any particular level of teaching expertise, Professor Voss initially said that there was. However, she also went on to say, "I think there is and yet I don't know what happens if you're not good. I don't know that in the end that's what matters most, I guess." Nonetheless, she notes that end of course SSI evaluations are reviewed. Professor Voss also mentions that the importance placed on teaching depends (at least somewhat) on who writes one's annual evaluation. This is especially interesting because she shares, "I've had a different person write my evaluation pretty much every year since I've been here because of the turnover in our school."

Professor Voss's teacher inquiry. Professor Voss has a background in K-12 education, which she believes provides her a strong pedagogical foundation. She realizes that professors in many other departments do not have the luxury of having studied pedagogy and learning as she has. She considers herself a reflective practitioner and describes that this is likely grounded in her undergraduate pre-service teaching experiences.

Professor Voss describes several forays into teacher inquiry. Even though hers is a graduate level program, undergraduate courses are offered and typically serve students from other program areas. A good portion of these courses are taught by graduate students in the program, and Professor Voss served as the faculty supervisor for these classes during her first year at LandGrant U. She describes being bothered by the teaching she witnessed in the majority of the classes. As Professor Voss states, "There's irony because you're teaching people to be good teachers, but everyone's going in and lecturing from publishers' PowerPoints…it was just terrible." As a result, a few years ago she decided to redesign one of the undergraduate courses, implementing a more team-based learning approach. Students' final exam essays were gathered from the classes taught in the previous lecture style and from the new team-based learning model. Essays were blinded, qualitatively coded, analyzed, and finally unblinded in order to compare results, which ultimately revealed greater depth of understanding, more deliberate focus on the

research literature, and deeper complexity of writing found in essays from the students who had experienced the team-based approach.

During the previous semester, because the graduate level courses she normally teaches did not have sufficient enrollment, she was assigned to teach one of the undergraduate level courses. Piggybacking on the previous work she had done, she decided to redesign this course as well. According to Professor Voss, "I had always planned to redesign the courses using a more interactive model, but then things happened and I couldn't do it. Now I thought, well, if I'm going to teach the course, here's an opportunity." She is currently studying the features of team-based learning in her classes that appear to prompt students to modify their thinking.

Professor Singh

Professor Singh is in his fourth year as an Assistant Professor in the College of Engineering, Architecture and Technology. He previously worked at another university as a Research Assistant Professor with the primary responsibilities of conducting research, writing proposals, and procuring funding. In anticipation of applying for a tenure-track position, he taught one course independently and co-taught three others, but readily admits that he only "*really* started paying attention to teaching" after arriving at LandGrant U. He currently teaches three classes per year—one undergraduate course and two graduate courses.

Having gone through the schooling system in India, Professor Singh recounts a steep learning curve in terms of navigating the differing classroom norms. According to Professor Singh, in an Indian classroom, "If you ask a question it's like you're insulting the instructor." He states that upon arriving in the U.S., "I realized that here questions were encouraged, but I think I still never asked questions the first and second year of my graduate classes. But then I realized that…I have a lot of questions!" His reflections on transitioning from a more passive student to becoming a more active student in the classroom influence his thinking as an instructor and cause him to believe in the benefits of what he refers to as an "interactive classroom."

Evaluation metrics. According to Professor Singh, "To my understanding, there are no quantifiable measures" regarding departmental expectations. However, he goes on to say that faculty are expected to bring in money, write papers, advise students, and teach well. The order of these expectations is not randomly given. In his current position, Professor Singh perceives procuring funding as appreciably outweighing teaching in terms of achieving tenure. As he states, "I'm pretty sure that funding is going to outweigh the teaching expectations. I can't be a *horrible* teacher, but I probably can get by being an average teacher."

The notion of 'teaching well' is somewhat difficult for Professor Singh to specify. In his very good-natured way, he says, "What is considered teaching well? Who knows?" Nonetheless, Professor Singh mentions being told by a colleague that a score of 3.2 on the four-point SSI evaluation scale "is considered good." However, he also references being told by the department head during annual appraisal and development meetings that the student comments are more valued than the numerical data.

Professor Singh spends much time considering the importance of his own personal expectations. As he shares, "It's not about the expectations that are placed on you. I think it's your own expectations of yourself, right?" In some ways this appears to manifest itself as a form of internal struggle. Although Professor Singh logically realizes that 'average' teaching is likely sufficient, he also states, "…whether I *want* to be an average teacher or not, that's a separate consideration." This dissonance also reveals itself in conversations related to justifications of how he chooses to devote his time, with decisions pertaining to time management commonly self-analyzed in terms of their reality of future benefit.

Professor Singh's teacher inquiry. Professor Singh's inquiries have centered on active learning. In both his writing and interview, he describes his journey of teaching development by describing how he has progressed "from active learning to *truly* active learning" which reflects the changes in his classroom over the years. He has examined student engagement and learning in relation to his questioning techniques, use of in-class problem solving, and implementation of

notes with gaps (Felder & Brent, 2016), an interactive note-taking technique in which lecture handouts are only partially completed by the professor before a lecture and then actively completed by students during the class period.

Professor Atwell

Professor Atwell is also an Assistant Professor in the College of Engineering, Architecture and Technology. After receiving his doctorate at Rice University, Professor Atwell spent several years in industry before returning to LandGrant U, where he received his initial undergraduate degree. According to Professor Atwell, "I decided to become a professor at [LandGrant U] largely because I enjoyed teaching and working with students." His current appointment is approximately 70% research and 30% teaching. He explains that he is expected "to bring in research funding, have a fully externally funded research program, and teach the equivalent of one to two courses per semester." Currently, this teaching expectation is realized through work in the Unit Operations Lab—a hands-on laboratory in which students perform experiments using apparatuses relevant in the field.

Professor Atwell's pedagogical ideologies are strongly influenced by teaching that occurs beyond the university setting. Experiences with his four young sons have greatly shaped his beliefs about teaching and learning. Coaching children's soccer and basketball teams, teaching Sunday school classes, and leading science experiments in elementary classrooms are all connected back to teaching at the university level. Professor Atwell says he has come to believe that people "learn kind of similarly whether they're eight years old or 40." According to Professor Atwell, "I think that engaging in extracurricular activities in a teaching capacity helps me to evaluate my teaching…I have discovered that the same patience that is needed to coach and teach eight year olds is needed to be an effective college professor." He goes on to say, "I think participating in activities like these can have a very positive impact on teachers' understanding of their strengths and weaknesses as teachers."

Evaluation metrics. Professor Atwell says there are "no hard and fast numbers" used to indicate the successful attainment of expectations, and yet he has very definite ideas regarding what he must do. He believes a meaningful research program results in a minimum of three to four publications each year, but also admits this is an unstated expectation.

During our conversation, it became apparent that the securing of funding is not only viewed as tremendously important, but is also a significant source of stress. When asked if there is a set amount of money he is expected to bring in, his joking response is, "More than last year!" However, he goes on to add that, in all seriousness "the reality is, to have a viable research program you really need five to seven, at a minimum, PhD students. So one has to bring in enough funding to pay salaries for five to seven PhD students and then the materials that go along with that and travel." Securing the hundreds of thousands of dollars needed to support such work is described by professor Atwell as "my biggest stress."

Once again, the notion of effective teaching is difficult to define. When asked about judgments related to effective teaching, he responds, "That's a really good question. Grading teaching? I don't know how you even do that." Yet, he goes on to playfully say, "I think the answer there is, it depends on who you ask, right?" Even so, he describes the department's commitment to teaching and shares that there would be consequences if a faculty member's teaching is deemed inadequate. He also mentions the end of course SSI measures, but concedes, "I think the student evaluations only go so far."

Professor Atwell's teacher inquiry. Much of Professor Atwell's teacher inquiry relates to his work in the Unit Operations Lab. In response to calls for greater personalized learning as stressed in Engineering Grand Challenge #1 (National Academy of Engineering, 2008), the professors overseeing the lab decided to redesign the course. This has led to many investigations regarding the ideal number of experiments students should conduct, the most beneficial structures for students' written and oral presentations, and the implementation of a peer evaluation system.

Professor Hollman

Professor Hollman is an Assistant Professor in the College of Agricultural Sciences and Natural Resources. He is in his fourth year at LandGrant U, but was previously a tenured professor at a smaller university in a nearby state. He had 15 years of experience in academia before accepting his current position. Initially, his position at LandGrant U was designated as 100% teaching, but he "brought two graduate students and grants" with him and maintained "a fairly heavy research load" in spite of the 100% teaching designation. Over the past four years he has increased the number of graduate students and continued conducting disciplinary research, so this year his appointment was changed to 80% teaching and 20% research in an attempt to better reflect the work he is actually doing within the department.

Professor Hollman has 43 advisees and is expected to maintain 30 teaching contact hours per year: 12 hours during the fall semester, 12 hours during the spring semester, and 6 hours during the summer semester. The largest class he teaches fulfills a general education science requirement and commonly has an enrollment of approximately 200 non-majors. His larger than life presence is evident when he describes this course as being "kinda like a rock concert" and then going on to say, "I always wanted to be a rock star." His summer course is an online course—one that he developed and the first online course offered in his department. The class was originally designed for an enrollment of 25, but this summer is expected to have an enrollment of over 200. According to Professor Hollman, "If I had not had 15 years' experience coming into this position, I would have died. I don't think it would have been possible."

Evaluation metrics. Professor Hollman does not have a definitive number of research publications expected annually, but says this is not an issue because, "I've always published a lot." He is also judged on the ability to receive grant monies and has received a number of teaching grants. He is currently most excited about a $200,000 multicultural scholars' program grant that will be used to support six Native American students in the field of entomology.

Measurements of teaching are "mostly" related to SSI data and meeting the expected departmental contact hours. According to Professor Hollman, the question most commonly asked is, "Was I judged to be effective by students?" He is also evaluated on the number of articles about teaching that are published, and he describes this as the biggest challenge of his position. Whereas he feels confident writing disciplinary research because he knows "the right language and literature," he wavers when it comes to teaching articles because, as he says, "I don't speak education." He is bothered by the fact that his teaching publications would be described as "a few lab exercises that are more like science than educational research."

Professor Hollman's teacher inquiry. Since a significant portion of his time is spent teaching non-majors, Professor Hollman is conscientious of the fact that his course may be one of only two science classes that students experience while in college. According to Professor Hollman, "My entire motivation is to help them see the world around them and to think critically about it. As an entomologist, Professor Hollman is also passionate about changing students' perceptions of insects. Because of this, much of his teacher inquiry work has centered on how students' ideas change over time. He has also investigated student engagement in large classes and alternative forms of assessment—an aspect of inquiry evidenced by the countless pieces of artwork students originally submitted as assessment tasks, but that now adorn the hallway leading to his office.

Professor Pravi

Professor Pravi is an Assistant Professor in Arts and Sciences. She was previously a Visiting Assistant Professor at one of LandGrant U's satellite campuses before accepting her current position on the university's main campus in 2014. She teaches one graduate course and one undergraduate course in each of the fall and spring semesters. In addition, she has research and service expectations. Professor Pravi believes her position is fairly evenly split between research and teaching, and that service requirements are meant to occupy only a small portion of her time.

Evaluation metrics. According to Professor Pravi, "We are in the process of modifying our RPT [Reappointment, Promotion, & Tenure] document…so we are kind of in the process of getting more expectations." At the time of her appointment, the expectation was one publication per year, but now the expectation is "looking more like three publications every two years." She goes on to share that the department also considers the "presentations you've done [and] how many projects you've completed." She states that grants are important, though not necessary for advancement. Even though securing grants is not an expectation of the position, applying for them is. As Professor Pravi states, "You have to keep showing efforts towards getting there." Service requirements are met through committee work appointments, and Professor Pravi laughingly states, "It's a part you can easily meet if you are a conscious faculty member." However, because hers is a growing department—with two recent tenure track searches and a department head search—she believes that all within the department have taken on more service work than would normally be expected.

The SSI end-of-course evaluations play a significant role in determining teaching success. According to Professor Pravi, "the teaching expectation is obviously to have the best teaching evaluations you can get." However, Professor Pravi goes on to question this form of critique. As a doctoral student, she experienced classroom observations and feedback on her teaching offered by mentors and peers. She wishes her current evaluations were more colleague-driven than student-driven because she found her previous experiences to be professional and beneficial.

Professor Pravi's teacher inquiry. Professor Pravi's inquiries have related to student engagement, active learning techniques, and assessment. She believes that her experiences as a student in India and in the United States, as well as her experiences with teacher inquiry, have influenced her attitudes and beliefs regarding effective teaching and have ultimately made her not only a better teacher but also a better person.

Professor Meyer

Professor Meyer is also an Assistant Professor in Arts and Sciences. Currently in the fourth year of his appointment, he carries a 2/2 teaching load consisting of three graduate courses and one undergraduate course. Research and service are also expected and he currently serves as his program area's Assessment Coordinator. Endearingly genuine because of a willingness to openly share about his challenges regarding teaching, Professor Meyer provides the quintessential example of what can go wrong for a new university instructor. During his first semester at LandGrant U, he was assigned to teach the two graduate courses that he had requested during his interview. He was excited about the prospect of teaching, having been a PhD student who loved thinking about things "theoretically and cerebrally." He contacted instructors from his own graduate courses who readily shared materials with him, and he anticipated much success because he considers himself "to be a hard worker and someone who tries to address the needs of others."

Unfortunately, Professor Meyer's naiveté regarding teaching was short-lived. He erupts with laughter while recounting that he thought a postdoc advisor seemed "a little harsh" when telling him, "You think you know what you're talking about, but you don't. You have no idea what it's like teaching college courses." Still laughing, Professor Meyer adds, "He was absolutely right!" Students' demands were much greater than Professor Meyer expected, as he shares, "They demanded clearly articulated lectures, assignments with high clinical relevance, and to the man, they wanted excellent grades. I was not prepared to meet any of those demands." Classes he was initially thrilled to teach ended with student feedback that was abysmal. He describes one student referring to him in the end-of-course evaluation as "the worst instructor they had ever had." It is heartbreaking to hear Professor Meyer say, "I never expected, nor have I ever wanted to be, the worst instructor a student has ever had."

Evaluation metrics. Professor Meyer states that he believes "universities need to be flexible" in terms of evaluation and this is why quantifiable measures of success are difficult to ascertain. Nonetheless, he believes his research should result in one publication a year in a well-

respected journal. Service expectations are described as "You will do it" and are viewed as service to the department and university. He concedes that this load feels especially heavy presently because the department has been low on faculty. In his words, "I'm not going to complain about it because I know…if I don't do it, somebody else has to and they're assistant professors, too…we just gotta do it."

Professor Meyer is the one study participant given explicit target goals related to his teaching. During a yearly evaluation meeting, he was tasked with receiving a minimum of 3.5 on the four-point SSI scale and told, "You need to hit these targets for student evaluations." He states that looking back on it now, this was a reasonable target, but explains that it was "really scary and stressful" at the time. According to Professor Meyer, "The university has made it clear that they have a high priority for teaching and that's totally understandable." Ultimately, he sees this as good for students, instructors, and the institution overall.

Professor Meyer's teacher inquiry. Professor Meyer's teacher inquiries have focused on many aspects of assessment. Application of Bloom's Taxonomy, the use of rubrics, and the alignment of well-defined course goals, assignments, and assessments have all been investigated. He is currently attempting to study the use and function of undergraduate researchers in his lab setting.

Meaning of Teacher Inquiry

Although participants were purposefully selected based on my knowledge of the ways they had intentionally studied their own teaching, the more public forms of SoTL research were not typically the first types of experiences that participants chose to discuss. Even when participants were asked specifically about work that reflected systematic and public versions of teacher inquiry—those most indicative of the scholarship of teaching and learning—their conversations regularly came back to other forms of teacher inquiry that seemed to influence them on a more personal level. This range of experiences described as teacher inquiry was surprising, and it seemed important that the variation be properly represented in the findings. For

this reason, I searched for an additional framework that would allow me to accurately portray participants' accounts of their interpretations of teacher inquiry. Although it was not part of the original research design, the Dimensions of Activities Related to Teaching, or DART model (Kern et al., 2015) was selected as this framework and was considered necessary to adequately analyze and present participants' responses related to the meaning of teacher inquiry.

Figure 4 shows the Dimensions of Activities Related to Teaching (DART) model which offers classifications of teaching activities that fall within quadrants delineating their levels of formality and publicity (Kern et al., 2015).

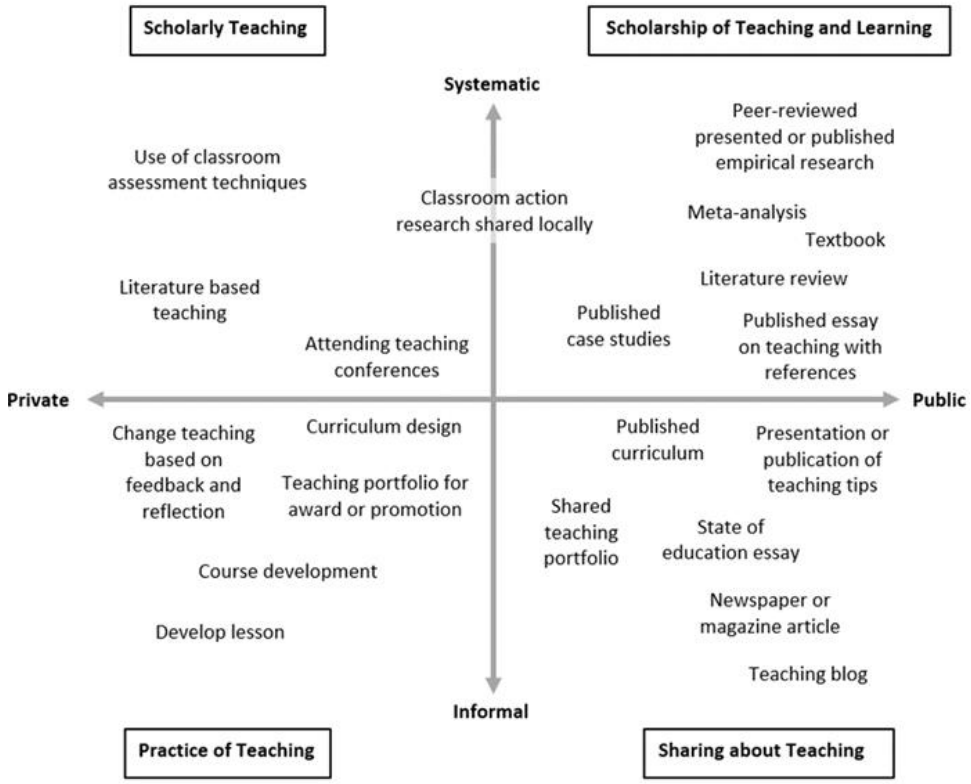

Figure 4. Dimensions of Activities Related to Teaching. Adapted from "The Role of SoTL in the Academy: Upon the 25th Anniversary of Boyer's Scholarship Reconsidered," by B. Kern et al., 2015, *Journal of the Scholarship of Teaching and Learning, 15*(3), p. 5.

Practice of Teaching

Elements of teacher inquiry falling within the *practice of teaching* category are those tasks regarded least formal and most private. While this category may include documentation of

one's teaching practice, the documentation is often only used for annual evaluation, tenure, or promotion and is not made public (Kern et al., 2015).

Participants in this study commonly referenced *practice of teaching* activities when speaking about their own teacher inquiries. Curriculum design, lesson planning, and critical reflection on students' learning tasks were regularly mentioned when professors discussed the intentional study of their own teaching. For Professors Singh, Meyer, and Pravi, reflection on overall course goals, daily lesson objectives, and the alignment of learning tasks and assessments to these goals and objectives were viewed as significant. Professor Singh described that "results were astounding" when he began to think critically about the daily learning objectives and their connection to the types of questions he posed during lecture and the in-class problems he asked students to solve. Professor Meyer also spoke about the importance aligning instruction, learning tasks, and assessments while referencing his introduction to Bloom's Taxonomy and the ways he considered this in terms of the way he structured in-class questioning during lectures, created exam questions, and established rubrics. Professor Pravi described attempts to align lesson objectives, in-class activities, and assessment tasks after considering and "reevaluating assessments of students' learning and course outcomes."

For others, teacher inquiry work involved redesigning courses. Professor Voss's reworking of undergraduate courses in order to infuse them with more interactive learning experiences and Professor Atwell's collaborations involving the modifications to an undergraduate laboratory class in order to better prepare students for their future work are both representative of *practice of teaching* inquiry tasks.

The importance of reflection and feedback. Kern et al. (2015) explain that activities falling within this quadrant often reveal an impetus for change that arises from intuition, discussions with colleagues, or student feedback. Data from this study support such a view as every participant alluded to changes in their teaching that resulted from significant reflection and/or feedback.

Commonly, feedback from students was offered as the measure of success for a particular change. Comments such as Professor Pravi's "…and the changes have been received quite favorably by the students…," Professor Atwell's "[Student] feedback helps me tailor how I interact with students, and it helps me understand their perspectives," and Professor Voss's "I receive student feedback (e.g., via course evals) and try to be responsive to that feedback by making changes to the course for future students and then reflect at the end of the next cycle" are representative of the types of remarks consistently made by participants. In addition, Professors Singh, Pravi, Atwell, and Meyer specifically mentioned the importance of gathering feedback from students at the midpoint of a semester, and Professor Voss alluded to "ongoing reflection" that "can lead to the nuanced changes in practice that—though not 'formally' studied—allowed for students in the here-and-now to have better (more effective) learning experiences."

Professors Singh and Atwell also alluded to the intuitive nature of feedback and teaching. According to Professor Singh, "There is something in the atmosphere of the class that conveys if students understand the material begin presented. It is important not to ignore this 'gut' feeling and reflect…" Professor Atwell discussed his early reflections on teaching and expressed, "I knew there were things that I needed to improve just from self-observation."

Sharing about Teaching

Teaching activities falling within the *sharing about teaching* quadrant are similar to those previously mentioned, except that these activities involve faculty members sharing their work with others. According to Kern et al. (2015) the work is still considered relatively informal, with much anecdotal evidence and few references to literature, but it becomes more public as 'what seemed to work' is shared with a larger audience.

Study participants made very few references to teaching activities falling within this category. No educational blogs, newspaper articles, or state of education essays—all portrayed by Kern et al. (2015) as characteristic of the category—were mentioned by participants. The few exceptions were teaching activities that resulted in presentations or publications of teaching tips.

Professor Singh mentioned a poster presentation regarding implementation of active learning techniques, but quickly dismissed this as not being terribly meaningful. Professor Atwell discussed a presentation made at a national conference regarding the process of revamping his department's Unit Operations Lab. He described this presentation as being "well-received" by conference attendees, but offered little else. Professor Hollman mentioned articles related to teaching, but described these as "lab activity articles" rather than pedagogical works. Even though each of these examples was offered during individual interviews or focus group conversations, little elaboration came with their references. It would be fair to say that more than any other inquiry activities discussed, items falling within this quadrant were merely mentioned in passing.

Scholarly Teaching

Scholarly teaching occurs when teaching practices are grounded in relevant scholarly literature (Kern et al., 2015; Zakrajsek, 2013). Teacher inquiries falling within this quadrant often arise when faculty have a particular issue or problem and consult the literature. These inquiries involve reflective practice, but are informed by research and the effects of change are typically more systematically obtained. Descriptions of scholarly teaching often involve references to literature or teaching conferences and workshops (Kern et al., 2015). In this study, Professor Voss eloquently described inquiries representative of scholarly teaching by explaining the way in which she will commonly "fall into a research question based upon things I notice happening in my class (or in another teacher's class), and then retroactively try to figure out how I can unpack that phenomenon in order to understand it better."

Other participants in this study also offered teacher inquiry examples that would be categorized as scholarly teaching. Professor Pravi described attending "a semester long book club organized by some faculty members in integrative biology" during her first year of teaching which inspired her to reconsider assessment in her courses. Intrigued by the ideas she was hearing from other professors during their book club discussions, she "also read some literature" on her

own regarding cumulative exams. She described this reading as informing her decision to change the format of course exams.

Professor Singh discussed his unsuccessful attempts to implement active learning techniques and subsequently consulting literature related to the topic. He referenced notable contributors to the field and discussed the workshops he attended that were led by these experts. Ultimately, this study allowed him to move "from active learning to *truly* active learning" in his courses. He also referenced making "extensive use of the research" regarding students' retention of visual information, and this literature prompted him to begin sharing graphic forms of mathematical equations because he "realized that students were having difficulty mentally visualizing" the changes created when variables were altered in their work.

Professor Hollman described seeking out "teaching workshop opportunities and meetings about education, especially those that have presentations about a particular activity" that others in the field found useful. As Professor Hollman stated, "Workshops have provided me not only exercises to incorporate in the classroom but also inspirations to adapt and utilize," and he went on to cite several examples such as blood typing simulations, modeling the process of an insect molting with a water balloon, and using the teaching strategy think-pair-share, a technique in which students *think* about a designated topic, *pair* with peer to discuss their thinking, and finally *share* in whole group discussion.

For these professors, scholarly teaching is anchored in the practical and summarized by professor Hollman's characterization that "…teacher inquiry is like a handy neighbor's toolshed. There are many tools and gadgets that can improve the teaching. Although not every tool is usable, there are enough varieties…" that a person can find something useful. However, despite the examples given regarding teaching changes resulting from the study of relevant literature, it is important to note that at times literature is consulted as a means to justify existing teaching practices. As Professor Hollman discussed assessing his own teaching in terms of the literature

related to effective teaching practices, he admitted that sometimes, “I tend to think about what I did and then find some supporting documents for how that is a best practice.”

Scholarship of Teaching and Learning

The final category of teaching activities represents inquiries delineated as most public and systematic. As described by Kern et al. (2015), “…faculty focusing on the scholarship of teaching and learning are engaging in inquiry in a manner similar to that of disciplinary researchers” (p. 6). Representative of common portrayals of SoTL, inquiries within this category are methodical, grounded in literature, and publically presented to peers (Kern et al., 2015).

Only two of the six participants discussed teaching activities reminiscent of SoTL without some sort of prompting. Professor Voss immediately mentioned SoTL research, but only because she felt that the majority of her teacher inquiry would not be classified as SoTL work, and Professor Hollman explained creating an online textbook for his class that is taken by many science non-majors because he was dissatisfied with other available options.

Professors Hollman and Voss. Professor Hollman described arriving on campus and inheriting a locally printed spiral bound sourcebook that served as the course text. Realizing that many of the students taking this class were non-majors, Professor Hollman believed this sourcebook “was not really useful to students” and he began to seriously ask himself what would be most “important for the student to know” at the conclusion of this course. Although the writing of a textbook might not immediately bring to mind SoTL-esque work, the embedded components of the text are grounded in best practices literature—something Professor Hollman considered during its creation. He began by explaining the importance of “having students prepared for class when they come to class” but described the challenges for an instructor “because how do you ensure that they read?” His solution involved three critical components of the online text: 1) short chapters with content buoyed by relevant images, 2) video segments that illustrated the key ideas, and 3) online quizzes that closed prior to the start of each face-to-face class. During the individual interview, Professor Hollman shared the analytics from the first few online quizzes which showed

how many times a student attempted a quiz, the amount of time devoted to each attempt, and how students had performed. He further described how this information informs his daily instruction similar to what is portrayed as just-in-time teaching, a strategy in which instruction is based on what appears to be needed by students in the moment (Simkins & Maier, 2010).

Professor Voss began by explaining that she considers teacher inquiry as work that mimics the research of disciplinary researchers, or that which is most commonly defined as SoTL research. Because of this, she sees herself as a teacher inquiry 'failure' even though she has done much to study her own teaching. According to Professor Voss, "In some ways, I feel as though I've failed at teacher inquiry…as I think of teacher inquiry as being more deliberative than what I do." Nonetheless, she went to describe a SoTL project she is in the midst of conducting that aims to determine the importance of collaboration in team-based learning.

Professors Atwell, Pravi, Meyer, and Singh. Because of my previous experiences with these instructors, I had some sense of their teacher inquiries that made me think of SoTL research. When these projects did not come up in the course of their writing protocol responses, individual interviews, or focus group discussions, I specifically asked participants about them. While each willingly answered my questions about this work, few elaborated significantly and all quickly moved the conversation back to other inquiries that more closely aligned with the other three quadrants within the Dimensions of Activities Related to Teaching framework (Kern et al., 2015).

It is interesting to note that Professor Singh described methods of reflecting on teaching as similar to conducting disciplinary research, but he did not portray this work as research proper. "It's like educational research…you know, sort of doing an experiment, getting the data, then refining your experiment…which is very parallel to what we do in research." He also explained that after years of jotting notes following daily lessons, he has collected "a very reliable set of data which can be used to refine the course material as well as estimate difficult spots" in the content. When I followed his remarks by asking if he considered this a form of research, he laughed and responded, "I'm pretty much doing what people have already discovered." Yet, after

pondering the idea for a moment, conceded that perhaps his work could be shared relative to "a field called education research" if he could "figure something out that's publishable."

Clearly, these professors are motivated to better understand aspects of teaching and learning regardless of whether their knowledge is ever shared with others. For most, teacher inquiry appears to be personally significant and results from a natural curiosity regarding aspects of teaching that feel perplexing.

Teacher Inquiry and Self-Determination Theory (SDT)

Self-determination theory (SDT) supports the idea that people are innately growth-oriented and interested in learning (Ryan & Deci, 2000). However, while individuals naturally seek and engage in challenges meant to deepen their understandings, they are also affected by the social structures of their environments (Deci & Ryan, 2000). Three basic psychological needs—a need for autonomy, a need for relatedness, and a need for competence—serve to facilitate or impede one's natural development tendencies (Ryan & Deci, 2000). Examples of the importance of each of these facets, as they related to teacher inquiry, were found within the data.

Autonomy

Self-determination theory operates from the assumption that feelings of autonomy directly influence motivation and that in this respect, autonomy is characterized by feelings of free will or of choosing to do something because one considers it enjoyable or useful (Deci, 1995; Deci & Ryan, 2000; Ten Cate et al., 2011). As Figure 5 illustrates, self-determination theory portrays autonomy along a continuum of perceived self-regulation and locus of causality. That is, feelings of autonomy occur when an individual perceives a greater sense of self-regulation and perceived internal (as opposed to external) locus of causality.

Amotivation	Extrinsic Motivation				Intrinsic Motivation
Non-regulation • Activity not valued • Person may feel incapable of change	**External Regulation** • Satisfies an external demand • Obtains external reward • Least autonomous	**Introjected Regulation** • Done to avoid guilt or anxiety • Achieves pride or ego enhancements	**Identified Regulation** • Tasks assigned personal importance • Aligns with values • Supports a greater goal	**Integrated Regulation** • Task undertaken are assimilated to self • Mimics intrinsic motivation	**Intrinsic Regulation** • Self-determined • Often revealed through choice • Done for inherent enjoyment
Impersonal Perceived Locus of Causality	**External** Perceived Locus of Causality	**Somewhat External** Perceived Locus of Causality	**Somewhat Internal** Perceived Locus of Causality	**Internal** Perceived Locus of Causality	**Internal** Perceived Locus of Causality

Figure 5. Self-determination theory continuum of motivation descriptors. Adapted from "The 'What' and 'Why' of Goal Pursuits," by E. L. Deci and R. M. Ryan, 2000, *Psychological Inquiry, 11*(4), p. 237.

According to SDT, extrinsically motivated tasks can mimic the feelings of intrinsically motivated tasks when an individual internalizes their value and importance. While Deci and Ryan (2000) maintain that this continuum of motivation is not meant to represent individuals progressing through various developmental stages of autonomy, my data suggest that university instructors may indeed develop a greater perceived sense of self-regulation and internal locus of causality in terms of teacher inquiry through their repeated teacher inquiry experiences.

Amotivation and intrinsic motivation. No data suggested that motivation for conducting teacher inquiry fell at either of the far ends of the autonomy spectrum. As such, no examples are categorized as representative of amotivation or fully intrinsic classifications. However, data did suggest a significant range of autonomy within extrinsically motivated tasks.

External regulation. Only one example of external regulation was found within the data. Professor Meyer described being prompted to conduct his first teacher inquiry as a result of external influences. He readily admitted that while he would like to believe he would have intentionally studied his own teaching in time, he likely would not have undertaken the work so early in his career were it not for the demands placed on him by administration. Professor Meyer is the only participant in the study who described being told, "You need to hit these targets for student evaluations" during annual appraisal meetings. When asked if he had the sense that there

would be negative consequences if he did not meet these targets, his response was, “Absolutely! Yeah. As in I would lose my job!”

Externally regulated tasks are described as those undertaken when people act to attain a desired consequence (such as a reward) or to avoid a perceived punishment (Deci & Ryan, 2000). Professor Meyer’s description clearly showed that his original incentive was externally regulated because his initial teacher inquiry was conducted so that he could meet expected targets on student evaluations, and in turn, keep his position.

Introjected regulation. Deci and Ryan (2000) describe this type of regulation as being “particularly interesting because these regulations are within the person, but still relatively external to the self” (p. 236). It is an especially intriguing source of motivation because it involves “taking in a regulation, but not fully accepting it as one’s own” (Ryan & Deci, 2000, p. 72). It is commonly described as contingent on self-esteem or ego and often arises from a sense of obligation, guilt, or worry (Deci & Ryan, 2000; Ryan & Deci, 2000). Because of this, one can sense the internal conflict felt by those operating from this place of a somewhat externally perceived locus of causality.

Several participants described their initial attempts at teacher inquiry as driven by factors that would categorize them as operating within this category. Many described their teacher inquiry work as arising from their own perceived shortcomings and the student feedback they received as new instructors. When asked about the factors prompting his initial forays into teacher inquiry, Professor Singh stated, “Well, part of it is ego, right…people ask you questions…and you don’t know the answer…you want to know what’s happening” and he went on to share “and for a couple of times I received some pretty harsh [student] feedback.” Similarly, Professor Atwell stated, “… students had given me feedback on things I needed to improve. I needed to be more clear with expectations [and] things like that.”

In addition to teacher inquiry described as being externally regulated, Professor Meyer also described teacher inquiry as driven by introjected regulation as he described student

feedback that caused him to question his abilities as an instructor, "Prior to receiving several semesters of negative student evaluations, I generally thought of myself as a good instructor." He also specifically mentioned that after one student referred to him as the worst instructor she had ever had, it was "clear-eyed consideration of my student evaluations that has been a primary driver of my engagement in teacher inquiry."

Participants' writing and comments during interviews commonly revealed an uneasy internal debate in which student feedback was accepted on the one hand, yet questioned on the other. Professor Singh discussed the use of active learning techniques stating "research shows that active learning is critical for students' comprehension and helpful to refocus students' attention" but also noted that some students are disgruntled and "do not like these activities." Professor Hollman described the times he attempted to change students' lab experiences to better reflect the work of scientists. He was excited to teach science in ways similar to the ways he *does* science. He described telling his students, "Today we're going to find out if dragonflies eat mosquito larvae. You're gonna design experiments. You're gonna collect data." He believed this method to be, "by definition, learning" as opposed to the "cookbook" style procedures commonly found in lab classes. With an air of exasperation, he went on to question the benefit of attempts saying, "It's interesting when you do that with students because [sharing the feedback from students] 'There wasn't enough direction,' 'It was hard to figure out,' and 'It took a long time.'" He also went on to say of this approach, "And sometimes it doesn't work at all!"

Professor Voss similarly described the type of internal struggle often conveyed by instructors when describing teacher inquiry in relation to student feedback:

> It is worth noting that, in my opinion, being a reflective practitioner is somewhat of a double-edged sword. On one side, I am (hopefully) better meeting some students' needs; on the other, I am abandoning (potentially) effective practices for other students. I see this as happening most frequently at times when trying to incorporate new or innovative practices that may be unfamiliar to students and/or hold students accountable for being

actively engaged in the learning process. Such practices often require more effort and may foster increased uncertainty in students, which I suspect is often the true impetus for some complaints.

Identified regulation. According to Deci and Ryan (2000), when tasks begin to be assigned personal importance, are seen as supporting greater goals, or are in keeping with personal values, people begin to more fully accept them as their own and perceive greater internal locus of control. While examples of less autonomous forms of motivation were conveyed by study participants, indications of greater self-regulation and perceived internal locus of control were revealed when they shared subsequent teacher inquiry experiences. Even those who discussed early teacher inquiry as prompted by more external regulation, went on to describe more recent teacher inquiry that reflected significant levels of internal motivation. Professor Singh demonstrated a shift toward more internal regulation when he described a teacher inquiry project that he identifies as meaningful:

> Having spent my career in academia, it is sometimes difficult to bring practical aspects of equations and problem solving into a discussion. The situation is exacerbated by the fact that my research is also computations, as such my training 'lacks' with hands-on experience with equipment. Recognizing this, I have actually carried out experiments in the laboratory over the last year. I will be using the experience while discussing topics related to the experiments I carried out in the lab and looking forward to evaluating the effectiveness of this approach.

Professor Singh went on to laughingly say, "personally, I hate hands-on" but he also described realizing that he will likely offer more effective learning experiences for students if he can better connect the theoretical and practical. In this case, even though the task was not inherently enjoyable, it was undertaken because of its perceived benefit.

Professors Atwell and Meyer also discussed studying changes to their teaching in relation to larger goals and personal values. For Professor Atwell, several types of teacher inquiry have

been conducted in an attempt to offer students experiences that will serve them well regardless of whether they choose to go into industry or academia, something he regards as important. He describes that "it takes hard work to become a great teacher" but that this work "is a very fulfilling endeavor." Professor Meyer described the time devoted to improving teaching as worthwhile because he wants students to enter their respective fields as "better professionals" saying, "It's really taken a lot of work over the last 3 1/2 years…I'm glad that I took the time and effort" to improve my teaching.

Integrated regulation. Professor Voss offered the example best typifying integrated regulation—tasks that, while not done for inherent enjoyment, most mimic those types of tasks because they are fully assimilated to self. For Professor Voss, redesigning the structure of undergraduate courses in her department to increase the amount of student interaction was enacted purely because she saw this as important based on her knowledge of effective teaching practices. Nonetheless, it is interesting to note that while she very much wanted to undertake such a project, she realized right away that simply having the desire to redesign undergraduate courses was not enough to justify actually doing it. According to Professor Voss, "It started off as 'I see a need for us to be better at practicing what we preach' and developing being a good model of instruction for preservice teachers," but this thought quickly progressed to "I really need to do research too and how can I put all this effort into changing a course without getting something else out of it?" Because of this, she asked herself, "Okay, how do I make it count?" This led her to consider ways to make her research and teaching "play off each other" which would allow her to enact the significant course design she desired, while being able to justify the time commitment of such work in terms of career aspirations.

Integrated regulation can also be seen in Professor Meyer's evolution of thought. Whereas he initially conducted teacher inquiry because he did not wish to lose his position, he went on to consider his teaching as a result of student feedback. Now he believes that if he does not receive the student feedback he expects, "It's gonna be a big deal for me…[asking] 'Why is

that so low?' and I need to go back and figure out what happened." Over time, his experiences with teacher inquiry have altered the way he approaches such tasks.

Competence

The need for competence in self-determination theory is described by Ten Cate et al. (2011) as "the desire to feel effective in whatever actions one pursues and performs" (p. 963). This need for competence leads individuals to seek appropriate levels of challenge and causes one to continuously work toward improving his or her skills and abilities (Deci & Ryan, 2000; Ten Cate et al., 2011). Competence was a recurring theme within the data, and every participant prefaced examples of teacher inquiry with a discussion of wanting to become a better teacher. However, a second aspect of competence emerged which related to feelings of inadequacy when conducting teacher inquiry.

Preparation for teaching. All participants clearly believed in the importance of being an effective college instructor, yet few felt adequately prepared for their first classes as professors. Professor Singh described teaching preparation as a teaching assistantship requirement that took place during two semesters of his doctoral program. During one semester he served as a homework grader and during the other he served as a laboratory teaching assistant, a position that required him to explain experiments to students and grade their lab reports. He also mentioned "going above and beyond" by spending one semester as a "graduate instructor" holding tutorial hours for other students.

Professor Atwell described being a teaching assistant as both an undergraduate and graduate student. He shared that he enjoyed these experiences and that they caused him to believe in his ability to work well with students. However, when discussing his first experiences as a professor, he revealed a lack of preparation stating that "*any* kind of training would have been helpful" and likely would have made the experience more enjoyable.

Professor Hollman depicted himself as "stepping into [his] first classroom as a newly minted PhD" who had "not taught once either formally or informally" because his program area

did not have an undergraduate component. He was an entomologist hired to be an invertebrate biologist and assigned ichthyology as his first class to teach. In his words, “To say I was underprepared was a tremendous understatement.” He added to this impression of being a new professor by vehemently stating, “You know faculty are expected to assemble a curriculum and teach well and write grants and manage people and mentor others. We don’t get any of that in grad school. None. I never had a single teacher prep course.” Professor Meyer described his beginning professorial experience similarly, but in a more lighthearted way; laughing while saying in his self-deprecatory manner, “I was *not* prepared for it!”

The exceptions were Professors Voss and Pravi who had teacher preparation experiences more closely aligned to what would be expected of them in their future careers. Professor Voss had K-12 education experience and Professor Pravi studied particular elements of teaching and learning during each semester of her doctoral program. Both also taught university classes as part of their graduate studies.

Perceived growth in teaching efficacy. Participants in this study described teacher inquiry as a mechanism for developing efficacy in teaching. They also described the positive outcomes of undertaking such work.

Professor Singh grounded his pursuit of teacher inquiry with the adage, “You cannot change what you do not know,” and he considered his efforts rewarding in the ways that teacher inquiry yields “important information regarding the teaching itself, such as the method of delivery, student comprehension, the time required to complete a given topic, students’ perception of the course and the instructor, and difficult concepts.” Professor Singh shared that perhaps even more importantly, while these experiences have caused him to “see an improvement in his teaching” they have also caused him to “appreciate others’ points of view” and “become more empathetic,” traits that he believes make him a better person overall.

Similarly, Professor Pravi commented on the ways teacher inquiry has caused her to become more authentic in her interactions with others saying that without these experiences, “I

would be very guarded about how I talk to people." She went on to discuss having personal pictures and artifacts in her office that serve as a reflection of her, something should would not previously have shared. According to Professor Pravi, "I think I have become much more open as a person and it reflects in my work space, it reflects when I teach, it reflects in my meetings with my students."

Both Professor Singh and Professor Atwell alluded to becoming more patient individuals. As Professor Singh stated, "I'm more patient and that patience helps in teaching because, you know, it changes your interactions with students." Similarly, Professor Atwell stated, "When I think about my teaching and how to improve, most of the time I realize that it falls back to being more patient in general…People learn at different speeds, and great teachers patiently work with all students where they are in their learning journey."

Professor Meyer described the change in perceived teaching abilities in a most heartfelt manner, saying in response to receiving negative student feedback early in his career, "…I made a concerted effort to increase my level of preparation, get feedback from the students, and seek ways to satisfy them regarding their education." Professor Meyer currently views teaching inquiry as "an ongoing process" but one that has transformed him, both in his own perceptions of teaching and in the eyes of his students who now describe him as "an excellent instructor," one "who truly cares that his students learn," and as a teacher that "goes the extra mile to ensure that we have the best learning experience possible."

The negative effects of increased feelings of competence. Although teacher inquiry resulted in greater feelings of teaching competency, some likened this increased competence to a double-edged sword. This idea was reflected in Professor Singh's response to a question regarding whether there were any surprising results of teacher inquiry. His response: "I was surprised by all the faults I see in the things I do." This idea was further supported by Professor Voss who stated, "I think the biggest thing for me is frustration in not being able to do as well as you want to because you don't have enough time." For some, increased perceptions of

competence can lead to feelings of disconcertion as one continually reflects on teaching practices and becomes more consciously skilled.

Perceived incompetence. In addition to key ideas related to increased feelings of competence, feelings of incompetence were also noted in the data, especially in relation to proficiency conducting teacher inquiry. The first line of Professor Voss's written response succinctly encompasses what many participants revealed, "In some ways, I feel as though I've failed at teacher inquiry…as I think of teacher inquiry as being more deliberative than what I do."

Professor Singh revealed a similar view of teacher inquiry, as well as feelings of inadequacy, when telling his focus group, "I do want to craft studies…so that I can publish papers about engineering education," but then going on to ask, "How do you craft a study in a scientific way so that, you know, the results are meaningful and publishable?"

Professor Hollman's rock star like confidence also wanes a bit when discussing teacher research projects:

> I have no formal background in teacher preparation, nor do I have much formal experience with educational research…I can write. It's just when I'm writing about [disciplinary] research I know the right language and the literature and with teaching there's a lot of literature…[but] I don't know how to add to it or go from 'I implemented this' and now I want to share it.

Overall, in spite of the ways teacher inquiry positively influenced their teaching, participants portrayed their perceived abilities in conducting and disseminating teacher inquiry quite critically.

Relatedness

Within self-determination theory, relatedness is depicted as an individual's desire to feel connected with others or to experience a sense of belonging (Deci & Ryan, 2014; Ten Cate et al., 2011). SDT suggests that relatedness may be more distally related to motivation than autonomy

or competence, yet it is still considered essential in promoting an individual's growth and development (Deci & Ryan, 2004).

Given that university campuses are notoriously viewed as operating within isolating silos (Keeling, Underhile, & Wall, 2007), evidence indicating relatedness seems especially noteworthy in the data. Participants regularly referred to others in ways that suggested the significance of relatedness to both teaching and teacher inquiry tasks. Relatedness within the department was associated with support from colleagues, senior professors, and department heads as well as connections with students. Relatedness beyond the departmental level included graduate program mentors, cross-campus cohorts, and interactions established through the university's teaching and learning center.

Relatedness within the department. Professors Meyer and Singh both specifically referenced the importance of informal conversations with senior professors and the subsequent impact these conversations had on their own teaching. Professor Meyer shared that as a result of visiting with more experienced colleagues, "I am better equipped to listen to student concerns and determine what should be changed." Similarly, Professor Singh stated that his "pedagogy has definitely been impacted by numerous informal discussions I have had with colleagues over the years." Both of these professors, as well as Professor Pravi, described the significance of support provided by the previous instructors of the courses they currently teach. Not only were notes and materials shared with new faculty, but previous instructors' ideas for ways to possibly improve courses were mentioned during our discussions. Professor Pravi explained her decision to implement a new teaching practice that links theory to students' future clinical work—one she has since begun to use with both graduate and undergraduate students—because it was "shared with me by my colleague who used to teach the graduate class that I'm teaching."

Professor Atwell described the ways in which he worked with the team of instructors who oversee the department's Unit Operations Lab. Recognizing the uniqueness of this experience, he described their conversations as being framed around the common goal of providing students

with the best laboratory experiences possible while also supporting "good diversity of thought." According to Professor Atwell, the group values their authentic relationship "because if we need to call each other out, we do. But we also support each other."

Departmental relatedness is also shown in the support for teaching that stems from department heads. Professor Singh discussed being provided the book *Teaching at Its Best* (Nilson, 2010) when he arrived at LandGrant U, and he detailed members of his department being encouraged to enroll in programming offered by the university's teaching and learning center.

Relatedness beyond the department. Professor Pravi discussed being inspired by her doctoral advisor, the person she considers an important mentor in her life. During Professor Pravi's doctoral studies, her mentor coordinated the pedagogical studies which she experienced every semester as part of the program. Once at LandGrant U, she described continuing to talk with her mentor every week to share "whatever sorrows or joys I had" and she explained the ways in which her perceptions of teacher inquiry were inspired by him:

> I think my mentor is someone who is a really good teacher and observing him made me think that you need to constantly be reevaluating yourself to know where you are at. And some of the things I do are things I learned from him….I think I may have had different notions about teaching if I had a different doctoral advisor.

She also discussed a book study organized by another department that was attended by faculty from various departments across campus. This group came together over the course of a semester and discussed assessment techniques.

Professors Voss and Hollman similarly describe partnerships with colleagues from different colleges on campus. Professor Voss built a relationship with faculty from hotel and restaurant management, computer sciences, and graphic design so that they might study the development of students' soft skills while working on an integrated project that spanned each of their classes. Professor Hollman referenced STEAM (STEM plus Art) and described his

integration of science and art as something that developed as a result of discussions with a colleague in another department.

The faculty development center. Participants repeatedly mentioned LandGrant U's faculty development center in terms of support that extended beyond the department. Professor Meyer described reaching out to the center "pretty directly" because he thought it would be a safe place to find teaching help. Professor Pravi mentioned being validated to continue her teacher inquiry work through relationships she created with members of the center. Professors Singh and Atwell described the value of classroom observations and the resulting relationships that transpired with those who supported their teaching endeavors.

Teacher Inquiry's Influence on Pedagogical Practices and Beliefs

Data indicated that teacher inquiry experiences positively influenced university instructors' pedagogical practices and beliefs. Although participants' portrayals of early teaching experiences placed them at varying starting points within Kugel's (1993) stages of university teaching development, growth was indicated regardless of where instructors began. Conversations revealed that all study participants moved across the stages shown in Figure 6, and those who began in the *emphasis on teaching* phase shifted to the *emphasis on learning* phase. This movement appeared to be buoyed by teacher inquiry experiences. Data also suggested that instructors could seemingly occupy two different stages while navigating their changing beliefs related to teaching and learning, and the graphic was revised to show stage three as a transitional position in which professors begin to straddle the emphases on teaching and learning phases.

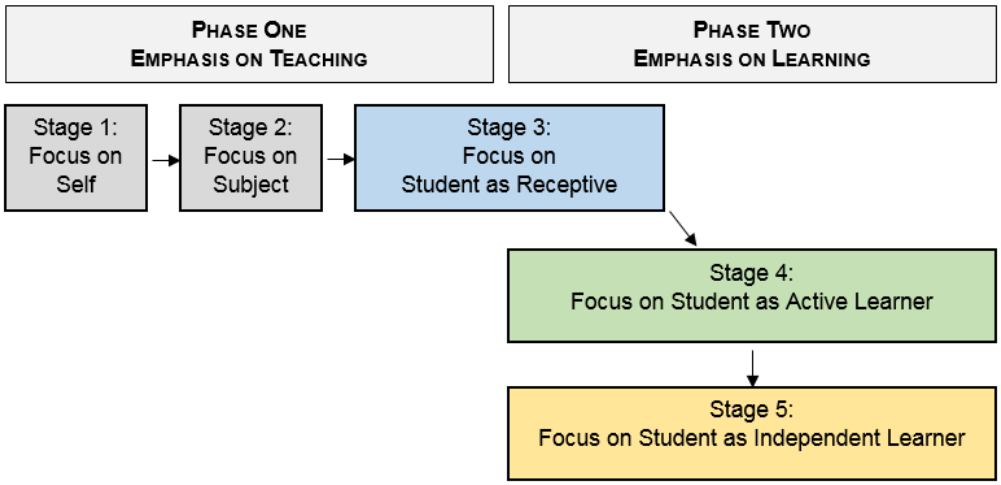

Figure 6. Stages of University Teaching Development-Revised. Adapted from "How Professors Develop as Teachers," by P. Kugel, 1993, *Studies in Higher Education, 18*(3), p. 316.

Phase One: Emphasis on Teaching

Professor Hollman was one of only two participants who described their earliest teaching experiences in ways that suggested the stage of a *focus on self*. Professor Hollman described beginning to think about teaching by making "a two-column list" of what *he* liked and disliked in the classroom during undergraduate and graduate courses. However, he also described a nearly immediate transition from a *focus on self* to a *focus on subject* once he was hired as a professor. His first teaching position required that he teach a course unrelated to his major, and his description of teaching preparation clearly indicated a focus on subject:

> I also got several books on the subject of fishes and began studying. I used the book I selected as the classroom resource for background and I read a completely different book to prepare notes. That way, I had more knowledge than the students about each lecture topic.

Professor Meyer was the second participant whose descriptions of early teaching indicated a *focus on self*. He described reacting to administrative expectations regarding rankings on end-of-course evaluations when laughingly sharing that his initial thought was, "WHOA! Good God that's high!" and he depicted this time of his teaching life as being "really scary and

stressful." However, he also immediately followed this lighthearted remark by seriously stating that he now believes these were reasonable targets and shared that now he would ask himself "Why is that so low?" if he received lower than expected evaluations because it would be "a big deal" to him personally.

Professors Meyer and Singh also described the inordinate amounts of time devoted to teaching when operating from a *focus on subject.* For Professor Meyer, as the pendulum swung from imagining he could simply enter a lecture with other instructors' materials—an idea he readily admits he would discourage today—to feeling the need to be exceedingly prepared in order to be a successful instructor, he described the struggles of maintaining a work/life balance while preparing for class. As one example, he explained feeling the need to read an entire textbook prior to teaching a course and justified this effort by describing that he needed to possess the information because he wanted students "to be good at their jobs in the future" and that he was going "to train them." Even when his focus started to shift from subject to students, he remained entrenched in a *focus on teaching* which was evidenced by remarks such as, "I need to satisfy students" and instructors need to "put some effort into just making [students] happy."

For Professor Singh, issues of time that resulted from immersing himself in preparation for teaching arose when he realized that content area knowledge seemed insufficient as a new instructor. In his words, "You always know, like 'I know this subject, I can go and teach well.' Only that doesn't work," which, in lieu of recognizing that pedagogical knowledge is what is needed, results in a cycle of intense preparation. As he shared, "In my first year of teaching…I wanted to know each and every thing and I realized that I was spending way too much time preparing for class." Through experience, he shared that he began to believe, "There's such a thing as too much preparation and it's not really needed."

Phase Two: Emphasis on Learning

Professor Singh captured the essence of moving from a focus on *student as receptive* to *student as active* with his description of "changing active learning to *truly* active learning" and his teacher inquiries directly related to this shift in his thinking. As Professor Singh stated:

> From the time I started teaching, I have always believed in breaking the monotony of the lecture by involving students. The approach primarily focused on asking questions and assigning short tasks to do. However, I was sensing that these methods were not delivering the desired results.

Deeper consideration of his teaching came about when, after attending a session about active learning, he asked himself, "What am I doing wrong?" As a result of teacher inquiry, Professor Singh's focus shifted to students and he decided to organize students in small groups, plan in-class activities that required collaboration, and provided notes that required additional work on the part of students. In his words, with these changes, "Voila! Off it goes!" However, he further reveals the possibility of regressing during one's journey as a teacher because when assigned to teach a new course, he believes he could be "thrown back to square one."

Professor Pravi described a transition in her teaching beliefs that began with an *emphasis on teaching*, but have since transformed to an *emphasis on learning*. She described her development as an instructor:

> I have transitioned from believing that teachers need to be 'the sage on the stage' who are extremely knowledgeable and know every possible thing about a topic to being 'the guide by the side' whose main aim is to facilitate active learning among students and help them integrate the classroom learning in the real world.

She confessed that early in her career she had definite ideas about the role of an instructor and experienced classes as a student in the United States through a lens of, "This is not how teachers teach." When she began her teaching career, she believed "you don't show your weaknesses" by saying that you do not know something. Now she describes, "The teacher is not

the expert all the time. There are points or possible ways that the teacher can learn too." Her teaching inquiry currently reflects a belief in *students as active* learners with facilitation of "active learning in classroom environments" to be a key characteristic of her efforts toward continued growth as an instructor.

Professor Meyer's statements indicated that he is currently beginning to acknowledge aspects of both the *student as active* and *student as independent* stages. He is considering the importance of his own classroom environment as it relates to student learning, working to make assessments transparent through the use of rubrics and attempting in-class activities that he believes will help students connect theory and practice. He described recently beginning to ask himself questions that reflect an *emphasis on learning*, such as "What matters to a student?" and "What abilities should they be learning in our courses that really matter that will be important to them, including to the 90% of our students who will *not* go on to a master's program?" Being designated as the program's assessment coordinator pressed the issue somewhat as he found himself thinking about the broader goals of the department while he attempted to compile data from other instructors:

> You get a bunch of professors who have these assignments and you get their grades and you don't even know what they mean from one to the next. And the other thing that really gets me about this is, 'Do students understand?' Like do they understand how to build up their knowledge of how to write or how to make a presentation? And what I realized is that there's no way that they're making that connection unless we are actively helping them make it from one class to the next…How can we make it so that our students see that this skill matters in this class and this class and this class? Then they can connect [these ideas] across their full education.

Professor Hollman also explained various examples of teacher inquiry that revealed a shift toward an emphasis on students and their learning. His first teacher inquiry experiences typically involved particular activities that he saw at workshops or meetings that he wanted to

include within his courses—things that *he* would do as the instructor. Later, his inquiries became more akin to viewing *students as active* learners and related to items such as attempting to increase student engagement through the use of student response systems and in-class activities or offering online quizzes with unlimited attempts. He even dabbled in using true scientific experiments in lab classes, inquiries that reveal a sense of *students as independent* learners, but admitted that he has not been fully successful in these attempts.

Professor Atwell described significant growth as an instructor, yet descriptions of even his earliest teaching experiences revealed an intuitive emphasis on *learning* rather than *teaching*. Nevertheless, it is important to note that while he described always wanting to improve student learning, he also described not always being sure of how to go about it. This uncertainly is what led to his initial attempts at teacher inquiry.

Professor Atwell's continual comparisons between teaching young children and teaching university students ultimately resulted in the belief that people learn similarly regardless of age and context, and that "being more patient covers a lot of the issues that I've had to work on" as a teacher. These beliefs have also caused him to continuously reflect on issues of depth versus breadth regarding content coverage. Furthermore, now that he has experienced teaching in both lecture and laboratory settings, he shares, "I realize that it would be hard for me to be really satisfied in a classroom versus in a lab or in an active learning environment." In his mind, the lab is where "people are doing things, they're attentive, we're learning together…so, I don't know…I think it would be really hard to go back." In describing his work with students in the lab, Professor Atwell revealed himself to regularly engage in Kugel's (1993) fifth and final stage, the stage in which instructors believe in scaffolding students as they become self-directed, independent learners. As he described it, "People learn at different speeds, and great teachers patiently work with all students where they are in their learning journey."

Professor Voss could be described as straddling stages four and five. Possessing significant knowledge of educational psychology, pedagogy, and andragogy, she consistently

portrayed students as active participants in the learning process. Much of her teacher inquiry work examined the ways students construct or co-construct understandings; however, this was not always easy. She conceded that students have resisted certain activities that she believes prompt them "to reflect on their own experience in a systematic manner" which, in turn, deepens their understandings as independent, self-directed learners. Nonetheless, although she has literature to support such practices, and she believes them to be effective, she has "deliberately chosen not to include" certain tasks in her classroom this semester because she does not want to "counter students' complaints."

Dual positionality. Just as Professor Voss indicated the capacity to vacillate between differing stages, other participants also showed such tendencies through their descriptions of inquiry and perceived understandings of teaching and learning. For example, even as Professor Meyer described classroom techniques that placed students in active roles as learners (the *student as active* stage), he also described a new textbook that he strongly believed would be better for students, but that he felt he could not use prior to having read it in its entirety. This suggests that, at least to some degree, he still maintains the importance of subject over students. Professor Hollman described believing passionately in students conducting their own experiments and explained how this sort of assignment paralleled learning in real life, but also described integrating such tasks less often than he might like because of students' pushback. Professor Atwell described the importance of independent learning tasks in the laboratory, but went on to describe his concerns pertaining to the new interdisciplinary lab expected to open in his department within the next year:

> From an educational standpoint, I guess you have to make sure of those core skills though, the core things that each discipline needs you to get. Because you can't get everything, right? You have finite time and so you make these interdisciplinary teams and projects, which is cool. But at the same time each discipline has to do what they need to do.

In each of these examples, a sense of cognitive dissonance is exposed. Often, it seemed as if one wrestled with feelings of disequilibrium that arose when differences between instructor's perceptions of teaching and learning clashed. This is to say, there appeared to be a back-and-forth mental negotiation regarding one's perception of what students needed versus what instructors were deemed as needing to provide.

Summary

Chapter Four explained the current condition of higher education funding in the state and presented data regarding six university professors and their experiences with teacher inquiry within this environment. Participants' descriptions of teacher inquiry were analyzed using the Dimensions of Activities Related to Teaching (DART) model (Kern et al., 2015), self-determination theory (Ryan & Deci, 2000), and stages of university teaching development (Kugel, 1993).

The use of case study methodology involved looking at participants as individual cases and then engaging in cross-case analysis. Data analysis indicated that although extrinsically motivated to conduct teacher inquiry, university instructors valued this work and experienced teaching growth as a result. Furthermore, data suggested that myriad forms of teacher inquiry were considered worthwhile by participants, even though professors might portray a lack of confidence regarding their own teacher inquiry work.

Chapter Five presents important conclusions drawn from this study and discusses the implications of study findings. Recommendations for further research are also shared.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

We do not believe in ourselves until someone reveals that deep inside us something is valuable, worth listening to, worthy of our trust, sacred to our touch. Once we believe in ourselves we can risk curiosity, wonder, spontaneous delight or any experience that reveals the human spirit.
–Edwin M. McMahon, *Please Touch*, p. 6

You cannot change what you do not know.
–Professor Singh

Doing more with less has become the new normal for those in higher education, and this is no exception for professors at LandGrant U. Impacted by state-level politics that are fueled by neoliberal ideology, professors find themselves shouldering ever-increasing responsibilities with less and less funding. Academic capitalism reigns supreme and an increasingly market-driven landscape forces faculty to work harder to ensure quality educational experiences as they confront exponential growth in class enrollments, more diverse student populations, and increased calls of evaluation and accountability (Lueddeke, 2003; Ramsden, 2003). All the while, faculty are expected to compete for limited resources, performing as cogs in a newly reimagined higher education machine, tasked with serving as the input-output system driving economic growth (Clawson & Page, 2011). Yet, even within these conditions, some instructors choose to intentionally study teaching and learning through teacher inquiry, and their work is personally impactful.

Summary of the Study

The purpose of this qualitative case study was to examine the experiences of university instructors who conduct teacher inquiry and to explore the influence of this work on pedagogical practices and beliefs. The following research questions guided the study:

1. What is the meaning of teacher inquiry in a university setting?
2. What rationale do university instructors provide for conducting teacher inquiry?
3. How are instructors' pedagogical practices and beliefs influenced through the process of conducting teacher inquiry?

Data were gathered through individual protocol writing samples, individual interviews, and focus group interviews, each of which were transcribed and analyzed. Self-determination theory (Deci & Ryan, 2000) and the stages of university teacher development (Kugel, 1993) were used as a priori frameworks that guided data analysis, especially in regards to questions two and three. When considering the meaning of teacher inquiry in a university setting, the Dimensions of Activities Related to Teaching (DART) model (Kern et al., 2015) was selected a posteriori in order to capture and depict the essence of participants' meanings of teacher inquiry.

Conclusions

The aim of the study was to gain a better understanding of the meanings university instructors ascribe to teacher inquiry experiences and to explore the ways university culture affects instructors' views regarding this work. Each research question is discussed below with respect to the data presented in Chapter Four.

Research Question One: What is the meaning of teacher inquiry in a university setting?

Professors in this study define teacher inquiry in numerous ways, the majority of which contradict the views most commonly advocated within the literature. Beginning with Boyer's (1990) initial advocacy of the *Scholarship of Teaching*, progressing to the further refinement of the *Scholarship of Teaching and Learning* (Hutchings & Shulman, 1999), and continuing to present-day publications in the field, the overwhelming context of teacher inquiry promoted in

higher education literature reflects what Kern et al. (2015) classify as the very formal and public aspects of activities related to teaching. In fact, principles of good practice at the university level regularly define *quality* in teacher inquiry as those inquiries that are: 1) situated within the literature, 2) open to critical review, and 3) augmenting the teaching commons so that others may build upon it (Felten, 2013; Hutchings & Shulman, 1999; McKinney, 2013; Shulman, 2004; Trigwell & Shale, 2004). However, this study suggests that professors find significant meaning in even the most private and informal characterizations of teacher inquiry. For these instructors, private teacher inquiry tasks feel new and effectual, and are portrayed as considerably influencing their growth as teachers and in developing authenticity as university instructors. In essence, for these professors, teacher inquiry is the intentional study of one's teaching with the aim of understanding, and this type of study is considered both a practice of transformative professional development and a pathway to more authentic teaching. Nonetheless, it is worth noting that the private nature of these participants' efforts could be the result of what is considered worthwhile scholarship at the university level. Whereas teachers in PreK-12 environments are not expected to share results of teacher inquiry in order to keep their jobs, they also are not penalized for sharing it. However, in academia there may be a perception that publicizing one's teacher inquiry portrays a person in a negative light—as someone who cannot conduct "real" research or as someone who should be devoting his or her efforts toward more important work, like grant writing.

Teacher inquiry as transformative professional development. Literature suggests that thoughtful analysis of one's teaching generates significant growth as an instructor (Black, 1993; Collins, 2016; Weimer, 2010). Yee (2015) maintains that teacher inquiry experiences have the potential to offer transformative professional development benefitting instructors at the university level, just as it benefits those in PreK-12 environments (Castle, 2012; Castle, 2016; Zeichner, 2003). Findings from this study reaffirm these ideas and build on the previous literature portraying teacher inquiry as a potent form of professional development.

In much the same way that teacher inquiry has been shown to provide transformative professional development in PreK-12 environments (Castle, 2016; Ortiz et al., 2014, Zeichner, 2003), findings from this study suggest that teacher inquiry is also transformational for university professors. Teacher inquiry provides a mechanism for critically examining one's long-held beliefs related to teaching and learning, and often brings about fundamental changes in professors' assumptions related to effective teaching. Participants in this study describe significant teaching growth resulting from their teacher inquiry experiences, and this growth compels them to consider teaching and learning in ways that make it difficult to imagine returning to their previous belief systems.

Also paralleling teacher inquiry experiences described by those in PreK-12 environments, these university instructors discuss teacher inquiry in ways that demonstrate their experiences prompt a genuine consideration of students' needs. As teacher inquiry thrusts professors back into the role of learner, it compels them to simultaneously consider both teaching and learning in ways previously impossible, and this appears to deepen professors' understandings of both, regardless of the stage of teaching development they occupy at the time they initiate such work.

Teacher inquiry as a pathway to authentic teaching. Perhaps the most compelling aspect of the meaning of teacher inquiry relates to what participants deem authenticity. Participants routinely reference some variation of 'authenticity' in their discussions of the meaning of teacher inquiry and frequently describe teacher inquiry as a means for finding one's authentic teaching self. In unpacking the subtext of this language to determine its actual meaning, I discovered that what university teachers label as authenticity reflects what is often referred to in PreK-12 settings as autonomy or autonomous teaching (Castle, 2004; Kamii, 1984).

In her discussions of Piagetian intellectual and moral autonomy, Kamii (1984) reminds us that, "Autonomy means taking relevant factors into account in determining the best course of action for all concerned" (p. 411). Castle (2004) adds to these ideas in her descriptions of autonomous teachers in stating, "Autonomous teachers know why they do what they do and can

communicate that understanding to others" (Castle, 2004, p. 6). The ability to consider various perspectives and make decisions based on the best interests of all is a form of professionalism in teaching (Castle, 2004) and this idea reflects depictions of authenticity for those conducting teacher inquiry in higher education. In many ways, both the depictions of authenticity provided by these professors and the notion of autonomy (Castle, 2004; Kamii, 1984) embody aspects of van Manen's (1991) vision of pedagogical tact, or thoughtfulness and mindfulness directed toward learners.

With the standards and accountability movement typically associated with PreK-12 education now affecting those in university settings, it would behoove us to consider the PreK-12 response to such ideologies as we begin to encounter eerily similar scenarios. In PreK-12 environments, teachers who have not developed autonomy are unlikely to promote autonomy in children (Castle, 2004). Similarly, it might be worth considering whether university professors who do not develop their authentic, autonomous teaching selves would be able to develop independent, critical thinking students.

The consequence of what is valued. Although teacher inquiry activities falling toward the more private end of the spectrum are shown to result in positive teaching growth (Ramsden, 2003; Schön, 1984; Weimer, 2010), it seems necessary to question why these study participants appear to place more value on their private forms of teacher inquiry than their inquiries more closely aligned with the scholarship of teaching. Perhaps this relates directly to what is perceived to be of value in the university setting.

The level of precision that participants are able to offer regarding departmental metrics denoting successful disciplinary research, as opposed to metrics indicating effective teaching, implies that disciplinary research is granted more importance than areas of teaching, regardless of what is espoused on university websites. The fact that students are specifically asked to evaluate instructors and courses—while no other formal mechanism for feedback is offered at the institutional level—makes it easy to imagine that effective teaching would *not* be as highly prized

as disciplinary research by one's peers. Moreover, although professors' accomplishments regarding their disciplinary research are regularly featured in LandGrant U's electronic announcements and newsletters, accomplishments related to teaching are not nearly as common. Perhaps it is this sort of unspoken message that causes instructors to devalue their teacher inquiry experiences, and ultimately sways them toward discussing private and informal investigations surrounding their own teaching. When asked, these instructors readily acknowledge the tremendous personal benefits resulting from teacher inquiry. Nonetheless, it is also conceivable that the intentional study of one's own teaching is regarded as better kept to oneself.

Some studies suggest that contrary to popular belief, faculty are neither resistant to nor averse to change; however, like those in most professions, they favor decisions perceived to guarantee their current standing or that assure future advancement in the field (Bernstein, 2013; Tagg, 2012). Those of us who have spent any amount of time in education realize that what gets measured is what gets valued, and it seems incredible that the answer to the question "What counts as research?" remains relatively unchanged nearly 40 years after Stenhouse (1981) posed it. Granted, he was arguing the importance of acknowledging classroom teachers to be researchers, but his question remains relevant when considering teacher inquiry at the university level, because it appears that certain forms of research remain privileged at LandGrant U. If this is truly the case, teacher inquiry—and teaching—will remain undervalued.

Research Question Two: What rationale do university instructors provide for conducting teacher inquiry?

Results from this study augment the literature that portrays novice university instructors as taking their teaching responsibilities seriously and wanting to provide quality educational experiences for students (e.g., Condon et al., 2016; Geschwind & Brostrom, 2015). Furthermore, findings also support the literature regarding common obstacles to teaching development and reinforce the data identifying matters of *time* (e.g., Huber & Hutchings, 2005; Tuchman, 2011), *professional efficacy* (e.g., Marsh & Hattie, 2002; Mckee & Tew, 2013), and *isolation* (e.g.,

Brancato, 2003; Keeling & Hersh, 2011) as significant barriers that impede teaching development at the university level. However, all study participants describe beginning their teacher inquiry journeys based on a desire to improve their teaching practice. In keeping with the literature related to teacher inquiry, for these professors, questions arise as a result of perceived difficulties or problems regarding students' learning and teacher inquiry seems to provide a mechanism for overcoming these barriers.

The psychological needs of autonomy, competence, and relatedness that Deci and Ryan (2000) argue are necessary components for fostering one's natural propensities for growth are clearly related to the commonly cited barriers of time, professional efficacy, and isolation. Views of autonomy, competence, and relatedness each hold a place of prominence in teacher inquiry, and the importance of fostering conditions that support these feelings within the social culture of the university cannot be overstated. Furthermore, it appears that professors traverse a journey of teacher inquiry that becomes more internally regulated over time. Even when initial teacher inquiry work is conducted as a result of administrative expectations, the positive results of such study lead to subsequent inquiries, and these subsequent inquiries consistently progress toward greater degrees of internal regulation. Simply stated, over time teacher inquiry becomes a way of being.

Autonomy. Although matters of academic freedom aim to balance the needs of the institution and the individual (Gappa, Austin, & Trice, 2005), the increase in neoliberal ideology is shaping a university system where the independence once afforded faculty is slowly being replaced by hierarchical management chains (Giroux, 2014; McKee & Tew, 2013). The concomitant issues of deadlines, competition, imposed goals, and evaluation have all been found to undermine a person's sense of autonomy which ultimately undermines enthusiasm and interest in a given task (Deci, 1995). As Deci (1995) reminds us, "Extrinsic control all too often gets people focused only on the outcomes, and that leads to shortcuts that may be unsavory, or just

sad" (p. 45). Teacher inquiry is one mechanism for promoting autonomous function on the part of faculty and affirmation of such work would ultimately serve to benefit both faculty and students.

Competence. It is likely that increased feelings of competence related to teaching serve as the catalyst prompting a professor to repeatedly enact teacher inquiry. It has been shown that increased perceptions of competence foster one's sense of internal motivation (Ryan & Deci, 2000), and feelings of competence arise when a person takes on a challenging task and then meets their personally designated challenge (Deci, 1995). For those entering the professoriate with little to no preparation for teaching, the process of teacher inquiry guides them in learning from experience. In addition, the more professors experience teaching success, the more willing they are to implement new ideas in the classroom (Condon et al., 2016).

Relatedness. Although portrayed as perhaps less crucial than autonomy and competence, relatedness is meaningful in terms of fostering growth. Instructors in this study want to break the seemingly impenetrable silos of university campuses and appreciate relationships formed with those across campus. These are not all-knowing "ivory tower" individuals as commonly portrayed in television and movie tropes, but rather are individuals well aware of their shortcomings and working hard to improve. They recognize that, as Castle (2004) states, "Development does not occur in isolation. Relating to others, considering their perspectives, and rethinking one's perspective result in development" (p. 6).

Research Question Three: How are instructors' pedagogical practices and beliefs influenced through the process of conducting teacher inquiry?

Although various influences to professors' pedagogical practices and beliefs have been woven throughout the chapter, this question remains worthy of deeper consideration in its own right. Initially, Kugel's (1993) stages regarding the ways in which professors develop as teachers were used as a framework for analyzing data. However, data revealed substantial information pertaining to teaching excellence and teaching expertise, so information regarding these items is also discussed.

The question of what it actually means to develop and demonstrate expertise in university teaching remains an issue. Participants' vagueness in their attempts to identify metrics of effective teaching reveals the unmistakable ambiguity of "expertise" in teaching. I suspect it is this difficulty that leads professors, time and again, to return to end-of-course student surveys because these surveys provide numerical data that seem easily interpreted. Just as attempts to quantify teaching abilities in PreK-12 environments occur through the use of students' standardized test scores (Berliner & Glass, 2014; Taubman, 2009), attempts to quantify university instructors' teaching abilities occur through numerical student evaluation data (Hendry & Dean, 2002). Certainly, telling a professor that he must meet a target of at least 3.5 on a four-point scale is significantly easier than helping him develop pedagogic knowledge and skill. However, in attempting to reduce teaching to quantifiable measures, Eisner (1983) argues that all too often this means, "that what is educationally significant but difficult to measure is replaced with what is insignificant but comparatively easy to measure or observe" (p. 8).

Transitioning through stages of university teaching development. Kugel (1993) speculates that professors shift to new stages of focus "when the urgency of the concerns of the stage they are in has diminished because those concerns have been largely dealt with" (p. 316) and a new aspect of teaching takes on greater relevance. His portrayal makes it appear that instructors merely adjust their focus and move from one stage to another. Though Kugel's stages represent the experiences commonly described by novice professors, I suspect that instructors do not simply one day shift their focus. Rather, my data indicate, that much like others maintain (e.g., Bereiter & Scardamalia, 1993; Kenny et al., 2017), the process of developing as a teacher is much more fluid, iterative, and recursive. These shifts in focus occur as part of a process of transition. What appears to simply happen in Kugel's (1993) estimation, likely takes significant time to transpire, with varying degrees of complexity of problems considered throughout the process of one's teaching development.

It also seems that Kugel's (1993) beginning stages of *focusing on self* and *focusing on content* could be a direct result of instructors' inabilities to deal with more complex issues of classroom life. In other words, it is easier to invest time in mastering content—something scholars have done successfully throughout their academic lives—than it is to consider ways to facilitate students' learning. It is only when an instructor feels that s/he has mastered these less sophisticated aspects of classroom issues that s/he can progress to dealing with issues of greater complexity and begin to ask questions about the relevance of content or the best ways for students to interact with the key ideas of a discipline.

Kugel (1993) marks the highest level of university teaching development with the *student as independent* stage, a stage marked by instructors "turning students into independent learners [and] letting them [students] learn how to learn on their own" (p. 324). It is interesting that Kugel (1993) maintains teaching and learning as two separate entities throughout his stages. According to Kugel (1993), during one's development as a university teacher, teaching and learning are treated as either/or propositions. One is either focused on teaching or one is focused on learning. Yet, to me this does not adequately capture the highest levels of teacher/student interactions, those in which the line between teaching and learning is significantly blurred because the two processes are symbiotic and all members of the learning community are engaged in both. A teaching and learning space where the co-construction of knowledge occurs reveals teaching and learning as two sides of the same coin or as concepts that are difficult to tease apart. Data in this study reveal moments such as these in the experiences of instructors, and these moments appear meaningful in terms of one's teaching development. So, while I agree that many of Kugel's (1993) delineations are representative of how professors portray themselves throughout the process of teaching development, the lack of a stage representing teaching and learning to be understood as reciprocal processes seems a substantial oversight.

Teaching excellence versus teaching expertise. In participants' descriptions of growth related to teacher inquiry, their depictions are reminiscent of what Kreber (2002) defines as

teaching excellence and *teaching expertise*. While I do not typically believe that getting bogged down in the minutia of vernacular is necessarily advantageous, in this case I think it provides insight as to why some professors advance to a particular point of teaching development—which they find satisfactory—and seemingly come to a developmental standstill, while others persist in examining their teaching and continue to develop teaching expertise across the lifetime of their careers.

Teaching excellence. Teaching excellence relates closely to the ideas of 'reflection in action' and 'reflection on action' originally advocated by Schön (1984). Grounded in the assumption that one is not simply born a good teacher, but that one can develop more effectual teaching through effort and reflection, excellence in teaching is generally described as constructed through a combination of four typical mechanisms: formal research, collaborative inquiry, relevant literature, and/or practice and experience (Kreber, 2002; Mentkowski, 2000). In essence, becoming an excellent teacher involves some sort of hard work and reflection on the process of teaching. Each of the participants in this study describe some combination of these activities and the resulting act of reflection which serves to further their pedagogical practices and beliefs.

Teaching expertise. According to Kreber (2002), teaching expertise goes beyond teaching excellence. Related to a constructivist view that knowledge is continually being constructed and then reconstructed as one surpasses previous levels of understanding, teaching expertise is demonstrated when one continually reinvests mental resources toward more complex problem solving in terms of teaching. Bereiter and Scardamalia's (1993) work regarding developing expertise is worthy of consideration when identifying professors' teaching development because it captures the ways in which, over time, a person might be approaching problems in deeper, more complex ways even when problem solving attempts may appear static.

Professors in this study openly report significant perceived changes as a result of teacher inquiry, both personally (e.g., I am a better person) and professionally (e.g., My student

evaluations improved). However, professors did not seem to realize the ways in which their repeated teacher inquiry reflected greater depths of understanding in ways similar to those described by Bereiter and Scardamalia (1993) as a process of "reinvestment and progressive problem solving" (pp. 81-82). According to Bereiter and Scardamalia (1993), once initial problems are solved, they are replaced by new problems that "could not even have [been] formulated early in [one's] career" or by problems that once appeared simplistic, but "now appear in much more complex formulations" (p. 81). In other words, as novices we are obliged to work with simplified versions of problems because this is all our mental resources will allow, but over time—and with developing expertise—we are able to consider what may appear to be similar problems, but at greater degrees of complexity (Bereiter & Scardamalia, 1993).

The idea of expertise as a process seems important in relation to college teaching because it helps differentiate between those who exhibit excellent teaching and those who go on to develop teaching expertise. As Bereiter and Scardamalia (1993) describe, "The difference between normal learning and the learning that leads to expertise can be traced to what we do with the mental resources that are set free by normal learning" (p. 91). Rather than simply solving problems and settling into familiar routines, those developing expertise reinvest their newfound mental resources into tackling more complex and challenging problems (Bereiter & Scardamalia, 1993; Kreber, 2002).

Reinvesting one's mental resources toward aspects of teaching is likely impacted by the market-like behaviors permeating university life. With limited time, departmental expectations, and revenue generation built on competition, many simply have no choice but to focus on procuring funding if they want to maintain their positions. There are only so many mental resources that one can partition among the responsibilities of research, teaching, and service, and instructors must make decisions about the best ways to allocate these mental resources. It logically follows that an increasing dependence on the procurement of external funding will result in a decreased focus on teaching. For professors with a significant teaching load, the reinvestment

of mental resources toward developing teaching expertise might be reasonable and justifiable; for the professor expected to secure hundreds of thousands of dollars in grant monies each year, perhaps not.

The Aim of Understanding

So what does this mean in the broader sense? Ultimately, teacher inquiry is an intention to understand. For these professors, aspects of teaching are approached similarly to aspects of disciplinary research. That is, when some facet of teaching seems fascinating, intriguing, or perplexing, it warrants further examination. These professors care about their teaching and are bothered when students do not appear to be learning well or do not appear to be relishing the experience of learning. Of course, it is worth remembering that these instructors were purposefully selected; it would be reasonable to suspect this may not be the case for all instructors on campus. Yet, for these six, teaching well is personally significant and teacher inquiry is a mechanism for professional growth as an instructor.

Furthermore, the psychological needs of competence, autonomy, and relatedness are realized through professors' teaching inquiry experiences. Professors initiate teacher inquiry because something in their classrooms seems amiss or because they talk with others who cause them to rethink ideas that were previously unconsciously accepted. The heightened awareness resulting from teacher inquiry experiences is not easily ignored. Figure 7 illustrates the types of conscious competencies typically experienced by those during the process of developing a new skill. As one progresses to a point of being consciously skilled, it is uncomfortable to return to a position of being consciously unskilled. For instructors, increased feelings of efficacy in one area of teaching can result in the awareness of lesser competence in other areas.

Professors persist in teacher inquiry efforts because such efforts result in deeper understandings of teaching and learning. Ultimately, these understandings lead to increased feelings of teaching efficacy and authenticity, and soon, professors find themselves naturally engaged in a cycle of inquiry that causes them to continually assess and reassess various aspects

of their teaching in relation to students' learning. Consequently, a cycle of teacher inquiry emerges that provides a mechanism for continued professional growth.

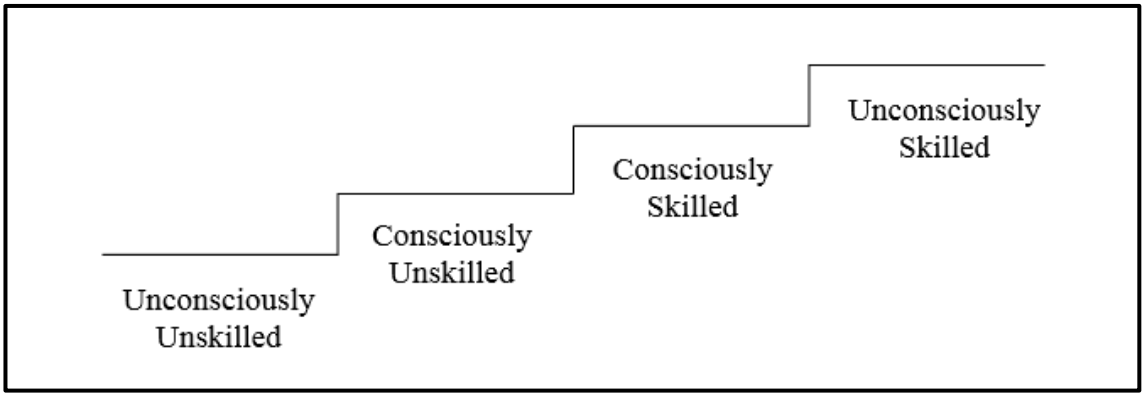

Figure 7. Conscious Competence Ladder. Adapted from *Learning a New Skill is Easier Said than Done*, by L. Adams, 2016, Retrieved from http://www.gordontraining.com/free-workplace-articles/learning-a-new-skill-is-easier-said-than-done/#.

Evaluating University Teaching

Attempts to quantify and measure teaching effectiveness through student evaluation surveys continues despite documented inadequacies of this practice (Clayson, 2009; Hornstein, 2017). Furthermore, this procedure is unlikely to change without an alternative. Perhaps we should be asking ourselves how we might otherwise consider evaluation of university teaching.

A developmental framework aimed at characterizing teaching expertise in higher education (Kenny et al., 2017) was recently presented at the International Society for the Scholarship of Teaching and Learning (ISSOTL) conference, and this framework offers an alternative to the pervasive use of students' numerical survey scores as indicative of a professor's teaching success (or lack thereof). According to Kenny et al. (2017), five facets of teaching expertise—described as interwoven and non-hierarchical—capture the essence of teaching scholarship at the university level:

- Teaching and supporting learning,
- Professional learning and development,
- Mentorship,

- Research, scholarship, and inquiry, and
- Educational leadership. (p. 1)

As shown in Figure 8, each facet is grounded in three foundational habits of mind—inclusivity, learning-centeredness, and collaborative ways of being (Kenny et al., 2017, pp. 2-3). Degrees of proficiency regarding each facet are portrayed along a continuum of experience and designated by three categories:

1. Explore—growth of oneself in a local context,
2. Engage—seeking out and implementing new ideas, and
3. Expand—contributing to the growth of others.

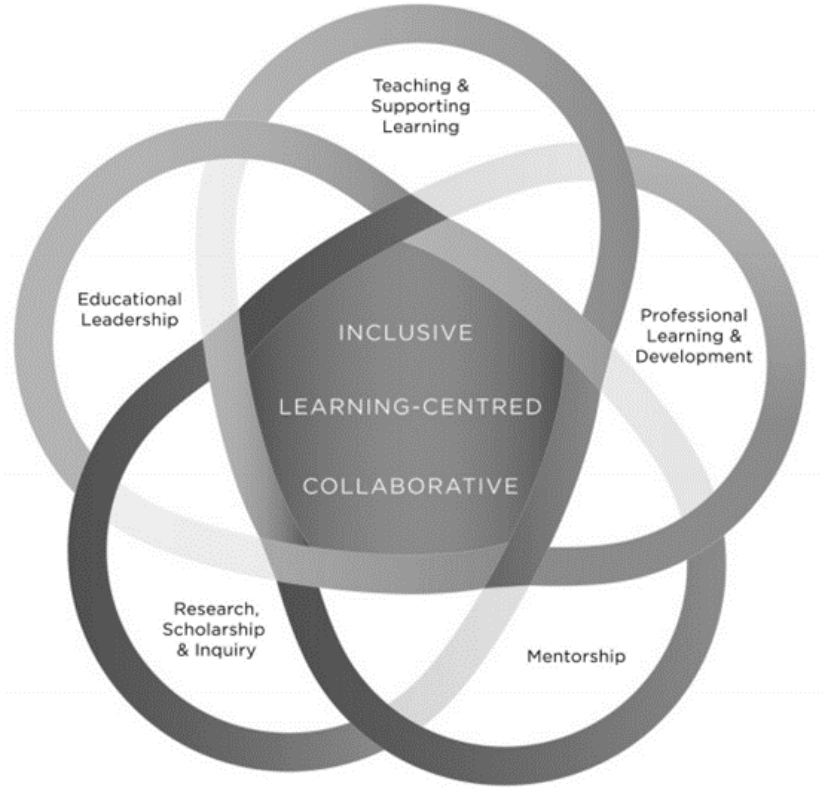

Figure 8. Facets of teaching expertise in higher education. Adapted from "*A developmental framework for teaching expertise in postsecondary education,"* by N. Kenny et al., 2017, Poster presented at the International Society for the Scholarship of Teaching and Learning Conference, Calgary, Alberta, Canada.

Defining characteristics for each of the five facets within the three categories of experience are provided through a rubric that portrays one's positionality as "fluid and iterative" (Kenny et al., 2017, p. 1) and development is understood to be a recursive process. Kenny et al. (2017) describe the model as "written in pencil" (p. 1) with the expectation that it will be shared and adapted based on local context. At the very least, perhaps the use of such a framework would provide language that supports meaningful dialogue around understandings of effective teaching and could facilitate movement beyond numerical scales. This seems especially important considering the difficulties all participants faced when attempting to identify departmental expectations of instructional accomplishment as well as their own measures of teaching growth and effectiveness.

Implications

The findings from this study have implications for research, theory, and practice. Examples of each are delineated below.

Implications for Research

In some small way, perhaps this study highlights the continued need for research that features professors' voices in the study of university teacher development. Time and again, professors in this study discounted the potential impact of their teacher inquiry efforts, believing that although the work was personally meaningful, it could not possibly be worth sharing in a broader context. My hope is that this study will inspire some at LandGrant U to recognize that teacher inquiry is valuable research and should be shared—not only through this study, but also through faculty members' individually published works.

This study also demonstrates teacher inquiry in higher education to be a potentially worthwhile endeavor, regardless of where one's inquiry falls within the dimensions of activities related to teaching. Even so, until the scholarship of teaching gains equal footing with disciplinary research, it will likely continue to suffer. This demonstrates a need for continued study of the benefits of teacher inquiry within the academy.

Implications for Theory

Findings demonstrate that self-determination theory (Ryan & Deci, 2000) is applicable to the context of professional growth. SDT has been applied in settings of PreK-12 classrooms (e.g., Curry, Mwavita, Holter, & Harris, 2016; Nunez, 2015), health and wellness (Ryan & Deci, 2017), medical schools (Ten Cate et al., 2011), and corporations (Deci, Connell, & Ryan, 1989), but rarely to self-regulated learning tasks such as teacher inquiry or professional development. Applying SDT in this way provides a structure for considering the barriers and supports regarding teacher development in higher education and furthers the scope of the theory.

The study also offers a critique of Kugel's (1993) stages of university teacher development and its portrayal of a teaching/learning dichotomy. The data reflect a need for representation of a developmental stage that occurs when teaching and learning are viewed as interconnected and result in the co-construction of knowledge. Additionally, this research suggests that Kugel's (1993) stages might better reflect professors' teaching growth if it were reconceptualized as a recursive and reiterative process.

Finally, this study extends the idea of autonomous teaching (Castle, 2004; Kamii, 1984) to the university level and suggests that professors develop autonomy in teaching in ways similar to those in PreK-12 settings (Castle, 2006). The importance of building and fostering relationships with learners and determining the best course of action based on students' needs, is an important aspect of professionalism in teaching. This highlights the need to examine the relationships that exist among teacher inquiry, teacher autonomy, and teaching authenticity.

Implications for Practice

For those in university faculty development centers, the implications for practice are many. First, those tasked with supporting instructors' teaching development should remember the importance of instructors' sense of autonomy, competence, and relatedness. As programming is designed or reevaluated, self-determination theory should inform our practice, especially in terms of the ways we could potentially mitigate the barriers of time, self-efficacy, and isolation to

teaching development. Furthermore, we should remain cognizant of the fact that the faculty development center is viewed as a safe haven for many professors who wish to discuss teaching and learning, especially when departmental discussions might seem intimidating.

Second, we should make our pedagogical language more accessible and transparent. Instructors may not be confident in consulting relevant literature simply because they are unfamiliar with language of pedagogy (Hativa & Goodyear, 2002). This unfamiliarity can feel overwhelming because it seems so foreign to professors' disciplinary fields of study. Just as we recognize that throwing huge amounts of content at students does not result in greater amounts of learning, throwing countless teaching strategies at instructors does not necessarily result in better teaching. Applying what we know of a constructivist approach to learning, and supporting cohorts of instructors, will likely make our work more impactful. Furthermore, we should facilitate collaborations between faculty members with a discipline-based focus and those with strong pedagogical foundations. Such partnerships would likely result in significant teacher inquiry.

Finally, we need to consider how to go about supporting graduate students who plan to become university instructors and who currently serve as instructors in their roles as graduate teaching assistants. Thinking about teaching in the moment one is assigned a course as a new professor is overwhelming at best and more likely, terribly cruel. Findings from this study support the literature calling for more pedagogical preparation for those planning to enter the professoriate. In many ways the lack of pedagogical preparation afforded graduate students seems to be a systemic issue as students often have negligible guidance in terms of teaching development and little extra time to pursue such studies on their own (Austin, 2002). While this definitely increases the challenge, perhaps the work of the faculty development center could merge with the work of other departments or the graduate college to ensure that offerings are made available to graduate students who intend to teach.

Recommendations for Future Research

Although this research provided insight into the meaning of teacher inquiry at the university level, new questions emerged that would be worthy of future investigation. Study of questions similar to the types listed below could provide greater insight into professors' development as teachers:

1. How is teacher autonomy (authenticity) developed and indicated at the university level?
2. In what ways do professors' teacher inquiry experiences change over time, e.g., early career, mid-career, late career?
3. In what ways does participation in a faculty development cohort affect one's perceived self-efficacy regarding the creation of SoTL works?
4. How does use of a developmental framework regarding teaching affect an individual instructor's conception of teaching growth?
5. How does use of a developmental framework regarding teaching affect the development of teaching at a departmental level?

Summary

Study findings suggest that teacher inquiry in higher education can serve as transformative professional development that leads to more authentic teaching. It can also serve to mitigate the barriers that prohibit teaching growth which are commonly encountered by those on university campuses. Furthermore, teacher inquiry causes instructors to regard teaching and learning as reciprocal processes.

The study also shows self-determination theory to be applicable to self-regulated learning tasks—such as professional development in higher education—and indicates that myriad forms of teacher inquiry are considered personally impactful. Despite the limited external rewards garnered by teacher inquiry, and the perception that this work may be considered substandard

scholarship, some professors choose to intentionally study their own teaching. This choice appears to be driven by increased feelings of autonomy, competence, and relatedness.

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APPENDIX A

Writing Protocol Directions

Dear Participant:

Thank you for agreeing to share your experiences for the research study *Teacher Inquiry in Higher Education*. Your participation may benefit other university instructors who investigate their own teaching as well as the faculty developers who support them.

The first step of this study involves a written response to the following prompt:

> **Reflect on your experiences conducting teacher inquiry.**
> **In what ways has the process of teacher inquiry affected you and your teaching?**

There is no required length for your response; please write as much as feels appropriate to you. This response may be handwritten or typed, and do not worry about the quality of writing. I want to know how studying teaching has influenced you, but I do not expect an article worthy draft. Think "stream of consciousness" as opposed to beautiful writing.

Please return your writing by January 4, 2018 to either the front desk of [redacted] or by email to [redacted]. You may direct any inquiries to me at this email address or by telephone at [redacted].

Thank you again for participating in this study.

Sincerely,

Gina Morris
Doctoral Candidate, Curriculum Studies

APPENDIX B

Individual Interview Questions

1. Could you tell me a bit about your current position?
2. What are the expectations of you in terms of teaching, research, and service?
3. What prompted you to conduct an inquiry into teaching?
4. How did you go about conducting your teacher inquiry?
5. In what ways, if any, did your inquiry affect your teaching or other aspects of your professional life?

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APPENDIX C

Focus Group Questions

1. Would you each introduce yourselves and offer a brief elevator talk regarding your teacher inquiry?
2. How do you perceive teacher inquiry research as being received by others, such as colleagues, administrators, and students?
3. Would you discuss some of the positive, negative, or surprising experiences you had while conducting this research?
4. Some instructors describe barriers or difficulties to completing this type of research. Did you find anything associated with this work to be particularly challenging?
5. What types of support might have benefited you as you conducted teacher inquiry?

APPENDIX D

[redacted] **University Institutional Review Board**

Date:	Wednesday, December 6, 2017
IRB Application No	ED17145
Proposal Title:	Teacher Inquiry in Higher Education
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 12/5/2020

Principal Investigator(s):

Gina Morris Kathryn Castle

[redacted] [redacted]

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☐ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact [redacted]

Sincerely,

Hugh Crethar, Chair
Institutional Review Board

VITA

Gina K. Morris

Candidate for the Degree of

Doctor of Philosophy

Thesis: TEACHER INQUIRY IN HIGHER EDUCATION

Major Field: Education, Curriculum Studies emphasis

Education:

Completed the requirements for the Doctor of Philosophy in Curriculum Studies at Oklahoma State University, Stillwater, Oklahoma in May, 2018.

Completed the requirements for the Master of Science in Teaching, Learning, & Leadership with Curriculum & Leadership Studies Option at Oklahoma State University, Stillwater, OK in 2007.

Completed the requirements for the Bachelor of Science in Elementary Education at Oklahoma State University, Stillwater, OK in 1989.

Experience:

Teaching Support Specialist, Institute for Teaching and Learning Excellence, Oklahoma State University, 2014-present.

Clinical Instructor, Elementary Education / Mathematics Education, Oklahoma State University, 2012-2013.

Mathematics Education Consultant, TERC,
Cambridge, MA, 2005-2012.

Elementary Teacher, Grades 3, 4, 5, Stillwater, OK, 1990-2012.