

POSTSECONDARY FACULTY MEMBERS' USE OF LEARNER-CENTERED  
INSTRUCTIONAL METHODS AT INSTITUTIONS IN THE UNITED STATES

by

CALEB JAMES KEITH

(Under the Direction of Karen L. Webber)

ABSTRACT

Higher education exists to pursue and distribute knowledge. Faculty members are the primary workforce tasked with achieving this goal through their teaching, research, and service. However, postsecondary education in the United States is facing increasing levels of scrutiny and calls for accountability from various constituents. This close examination is multi-faceted, including a focus on increasing costs, scrutiny of the efficient use of institutional resources, criticism related to limited student learning, and questions about the value of postsecondary education. In response, attention has been paid to instructional practices as they relate to student learning and achievement. Some of this attention can be attributed to Boyer (1990), who advocated for the “scholarship of teaching,” stating that the very act of teaching needed to be highly valued. Soon after, Barr and Tagg (1995) suggested a shift from a teaching paradigm to a learning paradigm, essentially moving the focus of attention from the act of teaching to the active process of learning. These two works have consequently led to an increased focus on the pedagogical practices employed by faculty members to facilitate learning and achieve these particular gains. This dissertation utilizes data obtained from the 2013 administration of the HERI Faculty Survey and the Integrated Postsecondary Education Data System (IPEDS) to explore characteristics that influence faculty members’ use of learner-centered instructional practices in the college classroom. The study utilizes descriptive and linear regression analyses to

explore the extent to which individual and institutional characteristics influence faculty members' use of learner-centered instructional methods in their teaching practice at U.S. colleges and universities. The findings suggest that individual faculty demographic and work experience characteristics, especially age, race, sex, and discipline exert influences on the use of these teaching practices. Additionally, participation in faculty development activities demonstrates a strong relationship with the use of learner-centered instructional methods. This research makes an important contribution to the literature by expanding knowledge about faculty members' use of learner-centered instruction through exploration of a large, national dataset and offers considerations for policy and future practice.

**INDEX WORDS:** Learner-Centered Instruction, Teaching and Learning, Quantitative Research, Higher Education Faculty

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## DEDICATION

This dissertation is dedicated to those educators who have aided and assisted me in my educational journey. To paraphrase a quote attributed to Bernard of Chartres, any achievement of mine is because I have had the privilege to stand on the shoulders of giants.

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about the formidable reputation each of these faculty members have in the field of higher education, until one attends a professional conference or converses with a colleague in the field. It has been a privilege to study with excellent scholars. Similarly, the staff is kind and supportive, offering guidance throughout the often-difficult process of navigating the policies and processes of graduate school education. Within the Institute of Higher Education, I have also had the good fortune of studying with students who push and challenge one another in the classroom. Through the varied interests and talents of my peers, I have learned much.

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## CHAPTER 1

### INTRODUCTION

Postsecondary education in the United States is facing increasing levels of scrutiny and calls for accountability from various constituents, both internal and external to the academy. This close examination is multi-faceted, including a focus on increasing costs, questions about the role and value of postsecondary education, inquiries into the utilization of institutional resources, and criticism related to student learning, among other topics. Clark Kerr (1995), from his perspective as a seasoned university president and frequent writer about American higher education, attributed the deterioration of attention given to undergraduate education to the changing role of the academic profession on college campuses, including a focus on research and changing teaching loads. Yet, the attention to teaching in postsecondary education in the United States is not limited solely to higher education leaders and scholars. Whether it is through books detailing deficiencies in teaching and learning on campus, such as *Academically Adrift: Limited Learning on College Campuses* (Arum & Roksa, 2010), through other media, or in the court of public opinion, American higher education continues to be under increasing examination.

In *The Higher Education Bubble*, Glenn Reynolds (2012) posited that, much like the housing market, despite rising costs colleges and universities have failed to provide students, and their guardians, with an adequate return on investment. He argued that tuition and fees are rapidly outpacing that of the national inflation rate and soon the bubble will burst. The 2014 CNN Films documentary *Ivory Tower* portrayed a similar account. Although perhaps a bit skewed in narrative, the critiques contained within these books and film raise important

questions and are serving to shed light on critical issues within American postsecondary education, with particular attention to student learning.

Other writers and thinkers have described alternative ways for would-be students to gain the outcomes typically associated with postsecondary education without incurring the associated fees. In her 2010 book *DIY U: Edupunks, Edupreneurs, and the Coming Transformation of Higher Education*, Anya Kamenetz discussed methods through which students are “hacking” their educations by utilizing open source initiatives. Kamenetz is not alone in her thinking; more books that encourage students to buck the traditional trends of higher education are appearing in the market (Boles, 2012; Frost, 2009; Stephens, 2013). Whereas staff and educators at traditional brick-and-mortar institutions of higher education may balk at the arguments posed in these books, there is clearly an audience for books of this nature. In addition, though many individuals who have chosen to commit their lives to the education of others may disagree with the means and ends suggested in these books, perhaps there are elements of truth to the problems being discussed.

Whether the critiques come from federal and state government officials, potential students and parents, accrediting boards, internal review boards, or the public at large, administrators at institutions of higher education are forced to not only make difficult decisions, but also defend those decisions and provide proof of positive outcomes and gains for students. To this end, there have been calls for transparency related to student learning outcomes on college campuses (e.g. Jankowski & Provezis, 2011; Kuh, Jankowski, Cain, Ewell, Hutchings, & Kinzie, 2015; Myers & Myers, 2015; National Institute for Learning Outcomes Assessment, 2011; Pike, Smart, Kuh, & Hayek, 2006).

In recent years, with both individual institutions and higher education broadly, particular attention has been paid to instructional practices as they relate to student learning and achievement. Campus leaders have focused on the ways in which their respective institutions contribute to and facilitate student learning. Some of this attention, and subsequent research, can be attributed to Boyer's (1990) *Scholarship Reconsidered: Priorities of the Professoriate*, which advised revision to the traditional rewards structure for faculty in American postsecondary education. In this document, Boyer urged for the definition of scholarship to be extended beyond that of just research, to include a focus on teaching, service, and the transmission of knowledge. Boyer argued that the work of faculty members is only important inasmuch as it is understood by others; he believed teaching should both educate and inspire future academics and scholars. This line of thought was extended by Barr and Tagg (1995), who posited that there should be a shift from a teaching paradigm to a learning paradigm, essentially moving the focus of attention from the act of teaching to the active process of learning. These two works have consequently been part of an increased focus on not only student learning in American postsecondary education, but also on the pedagogical practices employed by faculty members to facilitate learning and achieve these particular gains. Drawing on Boyer's definitions of scholarship, this increased focus on teaching and pedagogy launched faculty members' individual and collective attention to the scholarship of teaching and learning (SoTL).

Contemporary higher education has a tri-partite mission to engage in and advance teaching, research, and service (Hendrickson, Lane, Harris, & Dorman, 2013). Faculty, the main labor force of postsecondary education, have shared cultural values that admonish them to pursue truth, advance knowledge, and promote learning (Austin, 1990). However, when considering the missions of their employing institutions and cultural values that guide the academic profession,

many faculty members may feel they are being pulled in multiple directions. “Research and teaching are different disciplines with different qualities and characteristics, requiring specific competences” (de Jonghe, 2005, p. 64). Arguably, many faculty members may direct their focus toward the research enterprise, which closely resembles their doctoral preparation and reflects the focus of the types of institutions at which they earned their terminal degrees.

Moreover, creating shifts in the focus of faculty members can be difficult, especially when considering their teaching practices. Faculty members are “unlikely to embrace a new approach unless they are persuaded it can make a difference, but what is persuasive is very much in the eye of the beholder (often as seen through the lens of his or her discipline), and, for that matter, being persuaded does not necessarily imply a readiness to change” (Hutchings, Huber, & Ciccone, 2011, p. 35). Faculty need to be motivated to initiate change (Blackburn & Lawrence, 1995), and many are not motivated to dedicate the effort required to improve their teaching (Weimer, 1990). Largely, this lack of motivation is due to the current reward system for American postsecondary faculty. Taken broadly, changes to pedagogical practice have not been incentivized or tied to the reward system, which remains primarily focused on research (Lazerson, Wagener, & Shumanis, 2000; Park, 2011). It is this focus on research that leads to some of the inherent criticism of the professoriate and the American colleges and universities at which it is employed.

Yet, amid these concerns, there is potential for improvement. Altbach (2011) suggested that an emphasis on teaching and learning might restore credibility to the academic profession. Faculty members can be instrumental in addressing the questions and criticism surrounding postsecondary education, particularly as they relate to student learning and achievement. “By giving their attention to the nature of learning, teachers can improve their practice and thereby

the quality of learners' experience" (Macleod & Golby, 2003, p. 360). This, however, seemingly highlights a need for more resources dedicated to providing development opportunities for faculty members, specifically as they relate to teaching in the college classroom. "Arguably, an institution's first and most crucial step toward improving teaching and learning is to change the institutional culture to reflect the importance of teaching" (Jones, 2008, p. 97). This can be done through institutional support of faculty development.

However, in order to modify the ways in which faculty members conduct their classes, and emphasize good teaching, American higher education administrators need to know what factors influence the ways in which faculty members teach. In a climate of fiscal scarcity, if administrators are to contribute resources to modify, and possibly incentivize, the instructional practices used by teaching faculty, they need to understand those factors that contribute to faculty members' decision-making about teaching.

Despite the calls for an increased focus on student learning and faculty teaching, higher education researchers know remarkably little about why contemporary faculty members teach the way they do (Menges, 2000). Approaches to studying pedagogical practices used by faculty, and subsequent student gains, have been varied and somewhat limited. Conventional wisdom suggests that faculty members use active learning practices and learner-centered instruction techniques because they improve student learning and because they can be more fun for both faculty and students (C. E. Watson, personal communication, July 19, 2016). As such, a majority of the extant research has focused on individual active learning techniques and commonly within particular disciplinary, institutional, or course-specific contexts. To date, there exists a paucity of literature related to postsecondary faculty members' employment of learner-centered instructional approaches within the collegiate classroom, particularly at the national level. For

policy leaders and decision makers to accurately measure, report on, and recommend changes to enhance student learning, there needs to be a greater understanding of how, and if, faculty are embracing the use of learner-centered pedagogical practice within their courses.

This dissertation research has the goal of identifying individual demographic characteristics, work experience characteristics, and institutional characteristics that are related to faculty members' employment of learner-centered instructional techniques in their classroom pedagogical practice. Recent studies suggest that just over fifty percent of faculty members report a heavy reliance on lecture within the classroom (Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado, 2014; Lammers & Murphy, 2002) despite an increasing number of resources devoted to diversifying instructional techniques. The National Institute of Education's *Involvement in Learning* (1984), for example, encouraged faculty to move to pedagogical practice beyond lecture in an effort to make students not only consumers, but also producers, of knowledge. This document encouraged faculty members to employ teaching methods that required students to be active in their own learning.

Chickering and Gamson (1987) similarly argued for active learning techniques for undergraduate education, suggesting that students cannot only sit in class and listen to teachers. Instead, they must talk and write about what they are learning and apply the subject matter to new situations in their daily lives. Chickering and Gamson acknowledged that faculty members must consider how content and pedagogical practice must interact. Shulman (1987) posited that faculty must be knowledgeable of general pedagogical knowledge (GPK), which includes "broad principles and strategies of classroom management and organisation that appear to transcend subject matter" (p. 8). By exploring the demographic characteristics, work experience characteristics, and institutional characteristics that influence faculty members' use of

pedagogical techniques in the classroom, administrators at colleges and universities will be able to implement policies and provide resources that will effectively encourage greater numbers of faculty members to incorporate learner centered instructional practices in their classroom activities, leading to greater gains for students.

Even though there have been a number of calls for exploration into the topic, there exists a gap in the literature related to study of this issue at a national level. Those surveys and subsequent reports that do examine the subject tend not to specifically explore learner-centered techniques and primarily provide single-variable descriptive analysis when discussing these topics. There is a need for additional research that provides insight into contemporary faculty and their teaching practices. To date, national studies of this nature have been limited. With the exception of a few studies utilizing national datasets (Nelson Laird, Garver, & Niskode-Dossett, 2011; Umbach & Wawrzynski, 2005; Webber, 2012), there is a paucity of literature attempting to study faculty members' use of learner-centered instructional practice. Furthermore, the majority of these studies utilized data that is now over a decade old. Monographs presenting data from HERI's Faculty Survey (Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado, 2014; Hurtado, Eagan, Pryor, Whang, & Tran, 2012) are helpful in providing up-to-date insight about faculty members, but the sections on active learning and pedagogical practice are relatively limited and largely rely on single-variable, descriptive analysis. Other studies are primarily focused on specific campuses, individual courses, or within particular disciplinary contexts.

This topic is one of great interest and importance. Huber and Hutchings (2005) advocated large-scale research that extends beyond individual classrooms, programs, and institutions, to provide a macro view of the uses of learner-centered practices. As such, this dissertation is unique in its exploration of this topic and contribution to the literature. This study utilizes the

2013 HERI Faculty Survey, a nationally administered instrument, to provide insight into individual demographic characteristics, work experience characteristics, and institutional characteristics that influence faculty members to employ learner-centered instructional techniques in their pedagogical practice.

To do so, this study builds on existing literature related to faculty traits and institutional attributes as they relate to pedagogical practice, but provides new understanding of what factors influence faculty members by examining a large dataset collected from individuals across the country. The conceptual models proposed by Bowen and Schuster (1986), Blackburn and Lawrence (1995), and Lattuca and Stark (2009) provide a general framework for the study in an effort to understand the relationship of individual demographic and institutional characteristics that influence faculty members' use of learner-centered instructional practices in the college classroom.

The research questions for this study include the following:

1. To what extent do faculty members employ learner-centered instructional practice in their classroom pedagogy?
2. Do demographic characteristics (i.e., age, sex, race) influence faculty members' use of learner-centered instruction?
3. Do work experience characteristics (i.e., career age, tenure status, rank, discipline, highest degree earned, full-time/part-time status, principal activity, importance of role, type of courses taught, teaching activities, professional development, productivity, stress) influence faculty members' use of learner-centered instructional practice?
4. Do institutional characteristics (i.e., geographic region, HBCU status, control, religious affiliation, human resources, total enrollment, revenue, expenditure) influence faculty members' use of learner-centered instruction?

To address these questions, this study utilizes statistical analysis to explore data obtained from the Faculty Survey administered by the Higher Education Research Institute (HERI) at UCLA. Specifically, the study employs descriptive statistical analysis and regression analysis to explore the extent to which individual and institutional characteristics influence American faculty members' use of learner-centered instructional methods in their teaching practice.

## **Organization of the Dissertation**

This manuscript adheres to the traditional social science dissertation format. In Chapter 2, I provide a thorough literature review of American postsecondary faculty and teaching practices related to learner-centered instruction. I further provide the guiding theoretical framework for the associated study. In Chapter 3, I describe the methodology for the analysis of the data obtained from the Higher Education Research Institute (HERI) and Integrated Postsecondary Education Data System (IPEDS). Chapter 4 presents results from the analysis. In Chapter 5, I provide the implications, limitations of the study, and a discussion of areas for future research, as well as a summative conclusion of the dissertation study.

## CHAPTER 2

### LITERATURE REVIEW AND GUIDING THEORETICAL FRAMEWORK

#### **American Postsecondary Faculty**

Faculty members in the United States are an integral part of American higher education. Not only are they an essential component of the instructional labor force at postsecondary institutions, but they also fulfill other roles for their respective campuses, their academic disciplines, and society more broadly. Austin (1990) stated that faculty members have shared cultural values that direct them to “pursue, discover, produce, and disseminate knowledge, truth, and understanding” (p. 62). Essentially, the role of postsecondary faculty members closely mirrors that of most institutions of higher education, that is, to engage in teaching, research, and service (Hendrickson, Lane, Harris, & Dorman, 2013). Important to understanding the ways in which contemporary faculty members address their role is an understanding of American faculty members themselves.

Bowen and Schuster (1986) suggested that faculty members are scholars of advanced learning whose work is related to the three aforementioned goals, but that the primary focus is on the direct teaching of students. The Higher Learning Commission’s (2003) *Handbook of Accreditation* describes faculty members as “people who by formal education and tested experience know what students must learn” (p. 51). Hermanowicz (2007) extends these lines of thought by defining faculty members as semi-autonomous individuals with advanced, and preferably terminal, degrees who work at institutions of higher education. Traditionally, the Ph.D. has been the most prevalent credential for faculty employed at four-year institutions, while

Master's preparation is typical for two-year institutions (Bowen & Schuster, 1986), although this is shifting. Hermanowicz's (2007) definition further states that faculty have the unique position of extending and guarding culture, stating that the teaching role of faculty is one that helps to advance civilization. Hermanowicz and others suggest that the professorial role is the profession upon which all other professions exist.

In addition, the professoriate is itself a profession, when considered from a taxonomic approach (Saks, 2012). It is self-regulatory, using peer-review to guard the knowledge it shares. It has stringent entrance requirements, typically including doctoral training, which consist of gatekeeping measures such as preliminary exams, oral defenses, and training in research. The professoriate has accepted, and regulated, canons of knowledge from which it operates and upon which it is built. Finally, the professoriate is dictated by specific expertise, both related to the discipline and the academic profession broadly.

In addition to the previous sociological view of American faculty, other attributes help define it. However, before providing a description of contemporary postsecondary faculty members and their respective roles, it is important to provide several caveats. Primarily, American faculty members are not part of a monolithic group; their work and roles can be highly differentiated, influenced by institution type and discipline. "A professor is not a professor is not a professor in the U.S.—professors may have different backgrounds, job expectations, and career trajectories" (Finkelstein, 2012, p. 64).

Second, embedded within the first caveat is the assertion that institution types exert an influence on faculty members. Whether the institution is for-profit or not-for-profit, public or private, research intensive or comprehensive, the sector and type of institution can have an impact on the nature of the faculty work and, consequently, faculty members' roles.

Additionally, faculty members' roles are changing and evolving due to increased unbundling and adjunctification. The composition of the American faculty is experiencing an increasing number of adjunct faculty members, as well as the separation of professional roles and responsibilities among faculty members (American Council on Education and Council for Education Attainment and Innovation, 2014). The following description is intended to paint a picture of American postsecondary faculty with broad strokes, rather than to define the professoriate as though it was a single, homogenous entity composed of individuals all sharing similar characteristics.

### **Description of American Postsecondary Faculty**

Since the 1940 *Statement of Principles on Academic Freedom and Tenure*, drafted and agreed upon by the Association of American Colleges (AAC) and the American Association of University Professors (AAUP), two groups formed in 1915 (Cain, 2012; Rudolph, 1990), many American faculty members have had the protection of academic freedom and tenure, the provisions of which allow for the pursuit and dissemination of new knowledge, barring those topics deemed controversial. Though not extended to all individuals in the academic profession, and certainly requiring probationary requirements to earning them, academic freedom and tenure have come to be considered hallmarks of the American faculty, so much so that deviance from this career track within the academic profession may have been perceived as abnormal. Although tenure was historically embedded within the conditions of employment and tied to the reward structure for most faculty positions for over half a century (Hearn, 1999; Hermanowicz, 2012; Park, 2011), this trend has experienced change.

As previously mentioned, the specific roles of American faculty members include those of teaching, research, and service. The teaching role is one that is often assumed to have primacy for faculty, as the education of students is the goal of higher education. As content experts within

their respective disciplines, faculty members are responsible for producing and assessing learning for their students (Brint, 2011). However, the teaching role is not bound only to instruction within the classroom. Encompassed within the role of teaching are decisions about curriculum, degree requirement, course construction, prerequisites for graduation, and more (Altbach, 2011). In addition to these duties, faculty members are also responsible for planning courses, providing in-class instruction, and often are expected to provide out-of-class assistance, including the advisement of students.

The second role of postsecondary faculty is that of research. The research role of faculty involves the notion of discovery and includes an obligation to remain current in one's field and discipline, so that relevant knowledge can be transmitted to students via classroom instruction (Geiger, 2011). Research is the action through which faculty members contribute to their own scholarly learning (Neumann, 2011). The research role of faculty is essential in the production and transmission of new knowledge, which helps to advance society and can include opportunities for economic development. Research comprises a number of scholarly pursuits including scientific, theoretical, artistic, and creative activities. Research activities of faculty may lead to many different ends, including scholarly or academic journal articles, book publication, or the creation of patents, among others.

The third expectation of American faculty is one of service. As with all faculty expectations, this role can be defined differently at varying institutions, but often includes service to faculty members' respective disciplines, campuses, and local community. Service to the discipline might include serving as a reviewer for an academic journal, presenting at conferences, or serving as references for promotion and tenure processes (Sullivan, 2011; Ward, 2003). Service to the campus or institution can take the form of departmental and university

committees, as well as engaging in community activities (Myers & Myers, 2015). Faculty may additionally take part in institutional decision-making, often in the form of shared governance (Hendrickson, Lane, Harris, & Dorman, 2013). Through service on university council and similar structures, faculty are often critical voices in institutional decision-making. In addition to governance responsibilities, faculty members often serve their institutions through administrative roles within their respective departments and units, serving in such positions as coordinators for graduate programs, department chairs, and deans.

Snapshots of faculty can be difficult to provide, as these individuals work at over 7,000 postsecondary institutions in the United States (National Center for Education Statistics, 2016a) and are a dynamic body that can be difficult to pinpoint. American faculty members work at institutions with varying sizes, missions, and forms of control. Moreover, whereas the bulk of research on the professoriate is conducted on faculty at research-oriented institutions, the vast majority of faculty members do not work at these institutions (Hermanowicz, 2012). Despite these challenges, a number of structures are in place to provide descriptions of American faculty. Several national agencies and databases exist, which attempt to study and understand the academic profession. Until 2004, the National Survey of Postsecondary Faculty (NSOPF), administered by the National Center for Education Statistics, was one of the broadest surveys to collect information about the professoriate. This questionnaire, however, has not been administered in well over a decade.

Several other extant surveys collect information on faculty. The Collaborative on Academic Careers in Higher Education (COACHE) survey of faculty has had over 230 institutions participate since 2006 and collects information on faculty attitudes and stressors (Benson, Matthews, & Trower, 2014). The Faculty Survey of Student Engagement, housed at the

Center for Postsecondary Research at Indiana University, collects information about faculty teaching practices, educational aims, and perceptions of students (Center for Postsecondary Research, 2016). The FSSE survey had over 130 institutions participate in 2015. Perhaps the longest running survey, being administered since the 1980s, the Higher Education Research Institute (HERI) Faculty Survey has had over 1,100 institutions participate. The HERI Faculty Survey collects information related to faculty demographics, pedagogical practices, perceptions, and stressors (HERI, 2016).

Data from the 2013 administration of the HERI Faculty Survey suggest that just under twenty percent of faculty have taught online courses and that just over half of faculty members rely heavily on lecture as an instructional technique in the majority of their classes. Additionally, data suggest that over half of American faculty responding to the HERI survey are dissatisfied with their current salaries. Recent data show that the mean salaries for American faculty at all institutional types range from \$65,000 to \$95,000 (College and University Professional Association for Human Resources, 2016). Obviously, the variation in the mean accounts for rank, with assistant professors at the lower end of the spectrum and full professors at the top end. Recent data from the American Association of University Professors (2017) indicated that the mean salary for ranked full-time faculty was \$80,095 for the 2016-2017 academic year. Additionally, faculty members at research institutions tend to have higher salaries than do their peers at baccalaureate institutions.

As previously stated, American faculty members are not a static group of individuals. The recent past has witnessed a number of changes to the composition and roles of the academic profession. The demographic composition of the professoriate is experiencing a significant number of changes. Altbach (2011) indicates that it is difficult to discuss the American faculty as

a unified profession. Although historically outnumbered by men in professorial and administrative roles (Parker, 2015), there are increasing numbers of women entering the professoriate (Hendrickson, Lane, Harris, & Dorman, 2013; Schuster & Finkelstein, 2006). However, women still tend to be underrepresented in senior positions of rank and tend to be overrepresented in the humanities and “soft” sciences. While women may experience more inclusion as faculty members, they are presented with a number of challenges; female faculty members are often forced to navigate what are, at times, competing priorities of the tenure clock and family responsibilities and priorities (Ward & Wolf-Wendel, 2004; Wolf-Wendel & Ward, 2006). Fortunately, research has indicated that pay disparities for women are shrinking over time (Toutkoushian, 1998).

Women are not the only “new” faces to the professoriate. More groups are joining a profession that has long been comprised predominantly of middle-aged, middle-class White males. Racial and ethnic minorities have made substantial gains in recent years, specifically those who identify as African American and Latino (Hendrickson, Lane, Harris, & Dorman, 2013; Schuster & Finkelstein, 2006). Unfortunately, as the percentage of traditional tenure-line faculty members who comprise the contemporary professoriate is dwindling (Schuster, 2011), campuses have been slow to respond (Bataille & Brown, 2006). The inclusion of these populations has significant implications for the recruitment and retention of faculty members, something to which academic leadership likely needs to pay more attention. Faculty members from underrepresented populations often face challenges on campus and do not receive the necessary support they need to be successful. This can often lead to retention issues as these faculty members look to other institutions for employment (Rosser, 2004; Zhou & Volkwein, 2007).

In addition to new demographic populations entering, and being better represented in, the American faculty, there are also those who are staying in their respective roles longer. This has often been described as the graying, and staying, of the faculty (Altbach, 2011; Hendrickson, Lane, Harris, & Dorman, 2013). Essentially, older faculty members, who might have traditionally retired at an earlier age, are staying in their roles, creating an age bulge (Schuster, 2011). This trend can be attributed to two causes. The first is the removal of a mandatory retirement age, allowing aging faculty members to stay on campus and in their positions longer (Hainline, Gaines, Feather, Padilla, & Terry, 2010). Additionally, the Great Recession of 2008 had financial implications that possibly caused faculty members to remain in their positions longer in order to recoup financial losses experienced during that period (American Association of University Professors, 2011; Cha, 2014; Finkelstein, Conley, & Schuster, 2016).

Perhaps related to the age bulge, but also likely influenced by the often-touted decline in public funding for higher education is the reduced job market for new faculty. There are fewer tenure-track jobs for newly minted Ph.D.'s (Altbach, 2011), which has led to an increased number of these individuals taking post-doctoral appointments. Additionally, this phenomenon may be compounded by an over-production of Ph.D.'s, which might suggest a misalignment of production and actual need for individuals with terminal degrees. However, whereas there are fewer jobs for new faculty, those who are gaining employment are entering with exceptional research skills (Geiger, 2011).

A further change to the American faculty is related to the previous point. There has been an increased focus on research for college and university faculty (Geiger, 2011; Park, 2011). Some attribute this increased emphasis on the research role to the competition for funding by university faculty. Additionally, faculty members can be urged to engage in activities, such as

research, that promote economic development or advance the national agenda. This is closely related to the emphasis of research in faculty reward systems (Fairweather, 1993; Hearn, 1999; Hermanowicz, 2012; Leisyte & Dee, 2007; Park, 2011).

Some have suggested that the reward structure for American faculty is becoming increasingly homogenized across institutional types, so that regardless of mission research is emphasized and rewarded more than teaching (Fairweather, 1993; Milem, Berger, & Dey, 2000). Faculty may not believe that good teaching will lead to career advancement at their respective institution; they may instead believe that a focus on teaching, course planning, and pedagogy may jeopardize their opportunity for promotion and reward (Kezar & Maxey, 2016; Stark & Lattuca, 1997). Conducting a survey about learner-centered instruction and instructional innovation, Walczyk, Ramsey, and Zha (2007) found that more than a quarter of respondents were employed by institutions with no formal policy or a policy which assigned no weight to teaching activity and effectiveness in the reward process.

Additionally, beyond those activities incentivized by the American postsecondary reward system, faculty themselves may have come to see research as their primary role. When studying attributes that faculty members believe they must possess to be successful, Hermanowicz (2006) found that all but one of the characteristics faculty reported were related to research. Obviously, the focus on research is largely located at doctoral-granting and research-focused institutions, but this orientation has permeated smaller institutions with different missions.

An emphasis on research not only has implications for the amount of time faculty members allot to their intended three roles, but it also has implications for their general orientation. The creation of TIAA-CREF and portable retirement accounts has allowed for an increased appreciation for mobile faculty (Rhoades, 2009). As mobility is made easier for

faculty, more institutions are seeking out faculty who are highly productive, often with indicators of productivity related to research and service. Research productivity has demonstrated benefits for individual faculty, as well as the institutions that employ them (McGill & Settle, 2012). Junior faculty members have reported valuing opportunities for research as a means of satisfaction (McKenna & Sikula, 1981) and research facilities and resources have shown to be important in the selection of a new position (Aurand & Blackburn, 1973). Inadequate resources for research can reflect a low academic reputation for departments and institutions, which can then lead faculty to seek employment elsewhere (Haas, 1996). Studies have shown that an emphasis on research has an influence on faculty members' satisfaction and their intent to leave their present institution (Alemu, 2008; Zhou & Volkwein, 2004). This phenomenon has emphasized the idea of academic ratchet (Massey & Zemsky, 1994; Ortman & Squire, 2000) in which faculty increasingly use discretionary time for personal gain. This additionally accentuates an orientation toward cosmopolitan faculty over locally oriented faculty (Gouldner, 1957).

**Difference by institution type.** As mentioned when discussing caveats to describing American postsecondary faculty, faculty roles and responsibilities may differ across varying institutional types. "Institutional anchorage is a distinctive—almost defining—characteristic of American professors and their academic careers" (Finkelstein, 2007, p. 67). Different types of institutions exert differing influences upon the faculty members they employ due to varying institutional missions and goals (Austin, Brocato, & Rohrer, 1997; Ruscio, 1987). Just as American postsecondary faculty are not a singular group of individuals, neither are the various institutions that employ them. American institutions not only have widely varying missions that drive their work, but also offer a variety of educational experiences for students (Snyder, de Brey, & Dillow, 2016). Institution types include doctoral universities, master's colleges and

universities, baccalaureate colleges, associate's colleges, and tribal colleges (Center for Postsecondary Research, 2015). Historically Black Colleges and Universities (HBCUs) comprise another type of institutional classification that cut across the aforementioned institutions. It is important to note that larger universities serve a smaller number of students than do community colleges, liberal arts colleges, technical colleges, and other non-university forms of higher education (American Council on Education, 2014).

Institutional settings influence the ways in which faculty members prioritize, and allocate time for, their various roles and responsibilities. Expectations for performance typically correlate to the mission of the institution (Adams, 2002). At research institutions, faculty may place a high priority on their research and disciplinary affiliation (Austin, 1990). As such, these faculty members may be those that align with the concept of cosmopolitan faculty, wherein these faculty members' loyalties are primarily affiliated with their respective disciplines, professional organizations, and labor markets beyond their employing institution (Baker & Zey-Ferrell, 1984; Gouldner, 1957). State colleges or comprehensive universities may be striving for more prestige or to emulate research-oriented institutions (Aldersley, 1995) and may consequently be pulled between the stress to perform research while maintaining full teaching loads appropriate for the institutional mission. This phenomenon is known as "upward drift" or "mission creep," in which institutions seek to imitate those institutions above them in terms of performance and activity (Aldersley, 1995; Burgan, 2008). Meanwhile, in baccalaureate and liberal arts colleges, faculty may perceive that teaching excellence is most heavily valued and rewarded, and may consequently adjust their work appropriately (Austin, 1990).

Several studies have indicated that faculty members at varying institutional types may receive mixed messages about the specific roles they should fulfill, with conflicting messages

coming from administrators, department chairs, and deans (Austin, Brocato, & Rohrer, 1997). Faculty who work at institutions in the lower or middle portion of the American higher education hierarchy may seek to emulate the work of their peers employed at institutions on the higher end (Milem, Berger, & Dey, 2000). At public two-year institutions, where the institutional mission does not include a focus on research, many faculty members may engage in research activities that lead to publication (Finkelstein, Conley, & Schuster, 2016).

Institutional characteristics exert influences on American postsecondary faculty in other ways, as well. Although not the primary focus of studies on faculty members, institutional differences have been included in some studies related to faculty. For instance, the impact of institutional characteristics on faculty members' intent to leave have been studied; these characteristics have typically been included in studies' models as control variables. As such, findings pertaining to these characteristics are often embedded in the findings of studies on other factors. However, Clark and Larson (1972) found that church-affiliated institutions have greater levels of faculty retention than did state-controlled institutions. Similarly, Blau (1994) found faculty members at private institutions report greater loyalty and have higher retention than peers at public institutions.

Beyond faculty satisfaction and retention, Terosky and Gonzales (2016) found that faculty members who are employed at institutions that differ from their original aspirations often share narratives that include changing their focus from their own research to the research interests of others, including the students they teach. Additionally, institutional type has implications for the faculty who comprise their respective workforces. Parker (2015) found that community colleges typically employ a greater percentage of female faculty than do

comprehensive colleges and four-year institutions. Private institutions employ a proportionately smaller number of non-tenure track faculty than do public institutions (Kezar & Gehrke, 2016).

Location of the institution may also exert an influence on faculty roles; urban institutions may have a focus on research that is advantageous to their surrounding community, whereas rural institutions may focus more on liberal arts, interdisciplinary studies, or traditional research (Adams, 2002). Additionally, institutional type appears to have the greatest impact on faculty members' productivity (Bland, Center, Finstad, Risbey, & Staples, 2006).

**Differences by discipline.** The discipline in which a faculty member has been trained, and subsequently teaches and researches, similarly exhibits an influence on the ways in which American faculty conduct their work. Graduate training, which is a typical requirement for the faculty role, usually includes a focused, if not exclusive, concentration on a specific discipline (Travis, 1995). This training, and consequential orientation to the field, typically focuses on the research norms of the discipline, almost to the exclusion of pedagogical skills required to teach the content of the field.

Disciplinary ties contribute to noticeable differences in the behaviors of faculty. While little is known about why faculty selected the discipline in which they work (Blackburn & Lawrence, 1995), disciplinary affiliation may motivate the amount of time given to each of the three tasks of teaching, research, and service (Eckel & King, 2004). Disciplinary ties often prompt a desire for faculty members to contribute to their students' interest in the discipline, prompting the development of a new generation of scholars in the field (Austin, 2002).

The academic disciplines are used as a way to subdivide and categorize the academic labor market (Lawrence, 1998) and can often lead to in-group and out-group orientations by which individuals compare and contrast their work with others (Hagedorn, 2000). Research into

disciplinary affiliation has demonstrated that disciplines can affect faculty motivation, satisfaction, socialization, leadership styles, and preferences for teaching and research (Jones, 2011).

Many faculty think about their teaching practices within the context of the discipline in which they were trained (Huber, Hutchings, & Shulman, 2005; Stark, 2000). Consequently, there are differences in pedagogical practices used among the disciplines; research has indicated that lecture is used more heavily in the sciences than in the social sciences, and is less used in the humanities (Stark, 2000). Additionally, the norms and characteristics of the disciplines exert their influence on faculty course planning and preparation (Stark & Lattuca, 1997). There is evidence that faculty members' disciplinary affiliation is the most important factor in the planning of courses (Stark, Lowther, Bentley, Ryan, Martens, Genthon, Wren, & Shaw, 1990). However, disciplinary affiliation is not the only influence on faculty performance; it is, instead, one of many factors that interact to influence faculty members' execution of various roles (Dinham & Blake, 1991).

**Unbundling and adjunctification.** Additional differences that exist among the roles of American faculty members stem from the unbundling of academic roles and the increased number of adjunct faculty members who are part of the academic profession. The unbundling of faculty roles is essentially a form of separating and restructuring faculty responsibilities and duties (American Council on Education and Council for Education Attainment and Innovation, 2014; Paulson, 2002). In these efforts, institutions create new roles for faculty, in which there may exist academic professionals whose roles may no longer embody the established tri-partite missions of institutions and faculty, but may be focused on individual roles (Policastro, 2009). Essentially, this may create a bifurcated labor force comprised of teaching faculty and research

faculty (Guri-Rosenblit, 2009), who are not concerned with the multi-faceted traditional roles previously associated with American postsecondary faculty. This is closely tied with the phenomenon of adjunctification, in which contingent faculty serve predominantly as teaching faculty (Schuster & Finkelstein, 2007).

Some have decried the act of unbundling, asserting that this act leads to a lack of attention on instruction. Clark Kerr (1995) attributed the deterioration of attention given to undergraduate education to the changing role of the academic profession on college campuses, including the previously discussed focus on research, which resulted in changing teaching loads. “For many institutions, hiring part-time faculty began as an administrative policy that offered a convenient way of meeting the demands for instruction while maintaining cost effectiveness during tight budgetary times” (Antony & Valadez, 2002, p. 41). These changes have confirmed Tuckman’s (1978) prediction that higher education would experience a permanent pool of “temporary” part-time instructional staff employed in the academy. Disparagingly, this pool of academic professionals has been referred to as “permatemps” (Koch, 1998). However, what started as a temporary strategy appears to have recently become a permanent solution for many American postsecondary institutions (Gappa & Leslie, 1993; Leslie, 1998; Leslie & Gappa, 1994).

In addition to the restructuring of the academic workforce’s various roles, there are an increasing number of faculty members who are not on the “traditional” tenure-track (Hendrickson, Lane, Harris, & Dorman, 2013). Contingent faculty is a term to encompass both part- and full-time faculty employed in non-tenure track positions (American Association of University Professors, 2017). Since 1970, there has been approximately an 86 percent increase in contingent employment (Caruth & Caruth, 2013). The use of contingent faculty is outpacing

employment of full-time tenure-track faculty (National Center for Education Statistics, 2002; Schuster & Finkelstein, 2006). “The faculty labor force in U.S. colleges and universities is increasingly off the tenure track and, often, working at less than full time” (Hearn, Milan, & Lacy, 2012). In 1979, part-time faculty members constituted a quarter of the academic workforce (Finkelstein, Conley, & Schuster, 2016); however, recent statistics show that more than fifty percent of American faculty members are employed part-time (American Association of University Professors, 2016b). Additionally, the composition of faculty has shifted dramatically such that non-tenure-track faculty comprise nearly two thirds of the academic workforce, with tenure-track faculty at just a third (Kezar & Gehrke, 2016).

The idea of hiring and utilizing adjunct or contingent faculty is situated in a much larger discussion of outsourcing in higher education. Outsourcing is a method of reducing costs by privatizing certain functions of the institution (Bartem & Manning, 2016; Gupta, Herath, Mikouza, 2005; Phipps & Merisotis, 2005). These functions may include food services, bookstores, human resource operations, legal services, and the management of endowment funds, among others. Institutions have turned to outsourcing of operations that support the activities of the institution, but may not be core functions. Theoretically, any service or function could be considered a candidate for outsourcing (Bartem & Manning, 2016); however, with the use of contingent faculty, institutions are effectively outsourcing one of the core activities of the academy—the teaching of students (Schibik & Harrington, 2004a). In this paradigm, the idea of utilizing contingent faculty to teach students seems to be a departure from the norm established over a half-century in American higher education. Yet the true change may not be in the existence of contingent faculty within academia, but their increased presence and the role they now play.

The very act of defining contingent faculty is an arduous one. Different institutions, researchers, scholars, and administrators all use varying terms to define what it is at best a nebulous group of instructors who fall outside of traditional tenure-track academic appointments. It is clear that contingent faculty are not a homogenous group. Those who write about contingent faculty use a number of different terms to try to encapsulate the various nuances that can exist among this population. *Webster's Dictionary* (1999) defines the word contingent as meaning “conditional,” “happening by chance or without known cause,” or “accidental” (p. 288). However, these definitions provide little clarity when discussing this group of academic professionals.

Under the umbrella category of contingent faculty, exist adjunct faculty, part-time faculty, graduate teaching assistants, instructors, lecturers, and more. Adjunct faculty may be classified as either non-tenured or non-permanent (Caruth & Caruth, 2013; Johnson, 2006). Often, these faculty members may be referred to as part-time employees, yet this moniker may be a misnomer. Some contingent faculty are employed at multiple-institutions with a workload equaling or surpassing that of full-time employees (Kezar & Sam, 2010). Some are employed full-time, but in positions that are not on the tenure track (Baldwin & Chronister, 2001; Ehrenberg & Zhang, 2004). Others may possess additional employment outside of the academy (Maitland & Rhoades, 2005).

There exists little commonality in terms of labeling, despite talking about what is essentially the same population. “Whether these faculty members are referenced using the terms contingent, part-time, contract, adjunct, clinical, research, visiting, lecturer, or senior lecturer, they constitute a group of faculty who have lived and worked at the margins of academia for some time” (Thedwall, 2008, p. 11). There is even discrepancy, and commentary, embedded

within the literature pertaining to this group of faculty. “We prefer the phrase ‘fixed-term faculty’ to ‘contingent faculty’ because calling part-timers ‘contingent workers’ discounts the contributions that these faculty members make, as well as their occasionally long-term service to their institutions” (Gappa, Austin, & Trice, 2007, p. 92).

Although there are a number of definitions for adjunct and contingent faculty, essentially this refers to the growing number of academic professionals who may not be on the tenure-track and may not be employed full-time (Caruth & Caruth, 2013). To date, the adoption of contingent or adjunct faculty has been more rapid at smaller and private institutions than at large, research-orientation institutions (Ehrenberg & Zhang, 2005; Hearn, Milan, & Lacy, 2012). For-profit institutions have demonstrated the largest reliance on adjunct faculty members, with many teaching courses at many disparate for-profit institutions simultaneously.

### **The Instructional Role and Responsibilities of American Faculty**

As previously discussed, embedded within the teaching role of American faculty is responsibility for the curriculum, degree requirements, course construction and planning, prerequisites for graduation, and more (Altbach, 2011; Stark, 2000; Stark & Lattuca, 1997). The academic core of the university has long been entrusted to the oversight of faculty members. Through these roles, faculty members individually and collectively help to define the academic rigor to which their students must be exposed. Faculty members collectively make decisions about requirements of the curriculum, based on their disciplinary training, exposure to students, and perceived societal needs. Additionally, faculty typically develop their own courses, choosing intended learning outcomes, determining what material needs to be covered, and selecting pedagogical methods to achieve these ends (Stark, 2000). “Faculty are expected to utilize creative techniques that effectively engage students and support learning” (Adams, 2002, p. 1).

Furthermore, faculty members make decisions about their courses and spend time planning for individual class sessions and meetings, in addition to grading assignments.

American faculty members have also been entrusted with tasks beyond planning courses and providing in-class instruction. They are often expected to provide out-of-class assistance, including the academic advisement of students. Faculty are frequently responsible for providing additional support for students beyond class time, up to, and sometimes including, tutoring. These roles may be further complicated at institutions with graduate programs, wherein faculty members have increased expectations of advising individual students through their graduate preparation. Graduate programs often have the increased expectation for individual attention to students. In short, the instructional role of faculty members places them in charge of facilitating learning for students. However, this duty is not without criticism or challenges.

Criticism of faculty teaching comes from within academia, as well as from external sources. Arum and Roksa's (2010) *Academically Adrift* caught national attention when the authors decried the limited learning that occurs on college campuses across the nation. However, these authors are not alone in their criticism of faculty members' attention to teaching and learning. The popular press and news media often make similar criticisms, often coupled with greater calls for accountability. Two decades ago, Kerr (1995) suggested that faculty members had lost their focus on teaching and were becoming increasingly more focused on research, at the expense of student instruction. Boyer (1990) suggested a frame for recasting the definition of scholarship to broaden beyond on focus on research to include also the sharing and transmission of knowledge, as well as the scholarship of teaching. Boyer posited that the act of teaching was itself a form of scholarship worthy of reward. Barr and Tagg (1995) extended this line of thought

to recommend that faculty change from a teaching paradigm to a learning paradigm, in which they focus on engaging students in the learning process.

In addition to these thought pieces, scholars have written about the reward systems at institutions of higher education. These reward systems, which include the promotion and tenure process (Hermanowicz, 2012) and faculty remuneration (Hearn, 1999), often emphasize an orientation toward research (Geiger, 2011). Not only do these reward systems provide incentives for faculty performance, but they are also ways in which institutions act upon and reward behaviors that they value (Park, 2011). As such, reward systems that strongly favor research are both implicit and explicit statements that research activities are on what faculty members should focus their attention, time, and behavior. Again, this phenomenon is more prevalent in research-oriented institutions, as well as those that provide graduate education, but baccalaureate institutions may offer somewhat similarly structured systems of promotion, tenure granting, and remunerative reward. Reward systems of this nature are more likely to be found at non-for-profit institutions than at for-profit institutions.

All of this would suggest that, taken together, American institutions of higher education value faculty members who are productive in research. Not only do individual institutions reward research productivity, but a number of governmental agencies and firms from the private sector also award grants and fund research activities. This is less prevalent for teaching activities. Institutions often measure faculty productivity with metrics related to outside funding. As such, when faculty members, especially new faculty, are forced to make decisions about how to allocate their time, there is often little reinforcement of the teaching role and its associated activities.

Further exacerbating this situation is the training faculty members receive in preparation for their roles. One must consider that most faculty are individuals with advanced training and, often, terminal degrees (Bowen & Schuster, 1986; Hermanowicz, 2007). Terminal degrees for the professoriate tend to be research-oriented degrees that provide little training in teaching during the training and socialization process (Austin, 2002, 2011; Stage, Muller, Kinzie, & Simmons, 1998). Similarly, only a small portion of postsecondary faculty read literature on pedagogy and teaching (Blumberg, 2014). Many faculty possess contempt for the formal study of pedagogy and have a high assessment of their own teaching effectiveness (Speck, 2003). Consequently, most faculty resort to the methods through which they were trained. Considering that most faculty members' graduate training came from individuals whose own preparation occurred prior to the increased focus on teaching and learning and consisted predominantly of lecture (Travis, 1995), it is little surprise that lecture is heavily utilized by more than fifty percent of faculty in the majority of their courses (Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado, 2014). Additionally, many faculty members have significant autonomy with regard to the methods they employ in their classroom instruction. Thus, many resort to the common practice of classroom lecture, with the professor providing content to the students via spoken word.

As a pedagogical practice, lecture can be effective or ineffective (Lammers & Murphy, 2002). However, a sole reliance on lecture is problematic. Lecture is well suited for learning that can be measured by recognition tests, but as a pedagogical practice it is less effective for facilitating understanding of content (Halpern & Hakel, 2003). As a pedagogical method, lecture holds students' interest for short periods of time and is less effective at promoting motivation than active learning techniques (Lattuca & Stark, 2009). The material presented during lecture is

notorious for being forgettable (Nilson, 2010). Freeman, Eddy, McDonough, Smith, Okorafor, Jordt, and Wenderoth (2014) found that students exposed to lecture were 1.5 times more likely to fail a course than those taught utilizing active learning techniques. Additionally, students taught with active learning principles experienced greater gains academically. These findings reinforce those by McCarthy and Anderson (2000), who found that in history and political science classes, students taught with active learning techniques outperformed those taught through lecture. Similar results were discovered in engineering courses, where student demonstrated statistically significant and substantially greater academic gains when taught with active learning techniques (Terenzini, Cabrera, Colbeck, Parente, & Bjorkland, 2001).

The benefits of active learning and learner-centered instruction are not only related to academic gains measured by testing. Umbach and Wawrzynski (2005) found that students on campuses whose faculty engaged in learner-centered and active learning pedagogical practices reported greater levels of academic challenge, as well as self-reported academic gains. As a teaching method, lecture does not promote students to think creatively and critically, both of which are outcomes sought by employers (Hainline, Gaines, Feather, Padilla, & Terry, 2010). Ultimately, it matters less what faculty members themselves do than what they ask their students to do in courses (Halpern & Hakel, 2003). Institutions have begun to address these issues, through the creation of centers focused on teaching and learning and faculty development. In fact, one of the current critiques is that faculty members often do not receive adequate faculty development to prepare them for teaching and learning utilizing current technology (Hendrickson, Lane, Harris, & Dorman, 2013; Kezar, 2013), of which their students are frequent, and fluent, consumers.

It would, of course, be inaccurate, and likely unfair, to assume that faculty members have consciously made efforts to direct their attention away from teaching. It is likely that new faculty members have had limited exposure to the theoretical basis of teaching, much less the practice of teaching (Jones, 2008). Changes in the very nature of the faculty workforce and academic profession have created hurdles for faculty seeking to facilitate learning. One challenge is related to the larger trend of the unbundling of academic careers (Hearn & Deupree, 2013; Lechuga, 2016; Marklein, 2014), through which responsibilities are being shared among different groups of personnel. As discussed earlier, faculty members have traditionally had responsibility for the academic curriculum, including course design and delivery. However, as faculty roles are disaggregated and new individuals are brought into institutions of higher education, this can provide new challenges for faculty by taking responsibilities and roles away from faculty members and distributing them to other personnel (Guri-Rosenblit, 2009).

An example of removing faculty members' responsibility is the decoupling of curriculum content from curriculum delivery (Kezar, 2013). Faculty members are highly trained in their specific disciplines and consequently expect to define the conditions and settings in which they work (Kuh, 2003). Some institutions are witnessing an increase in instructional designers, who come in to build courses for faculty to deliver (Hendrickson, Lane, Harris, & Dorman, 2013; McCluskey & Winter, 2012). On the surface this may appear helpful for faculty whose graduate preparation and training has been in conducting research; however, it can also pose challenges as faculty are left to deliver course content and teach courses they did not design.

Relatedly, higher education's increased reliance on technology has changed expectations for faculty teaching. Not only are faculty expected to integrate new technologies about which they may have received little training into their teaching (Kezar, 2013), but there are also

increased expectations for new methods of delivery, including online classes (Bates & Sangra, 2011; Hendrickson, Lane, Harris, & Dorman, 2013; McCluskey & Winter, 2012). Delivering online classes may be a foreign activity for many faculty members whose only experience has been with face-to-face instruction. Further complicating this concept is that pedagogical strategies that may work well in face-to-face settings often need to be reconceptualized for online delivery, which can require additional time, for which there already exist competing demands. In addition to direct implications for instruction, technology may further complicate matters for faculty.

The integration of technology into the academic setting has further unlinked the connection between physical space and academic work itself, allow faculty to perform their tasks removed from their physical office (Schuster & Finkelstein, 2006). This may take form in the manner in which faculty interact with students, removing the idea of physical office hours, to the way in which they collaborate with other researchers. Digital technology has not only increased the ability, but also the expectation, for increased collaboration among faculty members (Willinsky, Fischman, & Metcalfe, 2011). The increased expectation for collaboration and teamwork threatens the traditional autonomy and relative independence of faculty members (Bates, 2000). With new forms of technology come additional opportunities for collaboration, which can lead to new opportunities for research. Faculty members are no longer bound to engage in research with colleagues in close proximity, but can easily collaborate with peers across the globe. This opportunity for enriched research may further create competition for scarce faculty time.

Occasionally related to the increased focus and reliance on technology is the national focus on accountability. With new forms of technology come new forms of data and artifacts that

can be assessed to measure student learning (McCluskey & Winter, 2012). The accountability paradigm, however, is not solely tied to technology, nor is it new (Ewell, 2009; Shavelson, 2007). In fact, the focus on accountability existed for a significant portion of the latter twentieth century. The focus on accountability can at times be perceived to be at odds with the autonomous nature of the American professoriate (Altbach, 2011). Faculty members may perceive external forces influencing their classroom instruction and associated choices. A perceived need to meet certain standards can add increased pressure and stress on an activity that may already be alleged to be undervalued.

The adjunctification of the professoriate poses further challenges for instructional activities. Though contingent faculty may possess the necessary qualifications to serve as teaching faculty, sometimes the conditions under which they are employed pose challenges (Caruth & Caruth, 2013). Adjunct faculty typically are not involved in departmental decision making (Kezar & Maxey, 2013), which means they do not have any say regarding the curriculum, but they often have no choice in the course to which they are assigned. Additionally, adjunct, or contingent, faculty may often be employed at the last minute and have little time to plan for, or may be ill-prepared to teach, courses that they are assigned (Street, Maisto, Merves, & Rhoades, 2012). They may not be provided adequate resources that would allow them to be successful in their teaching endeavors. The literature on this group of employees contains stories about contingent faculty members who are not provided access to copy machines, offices, or phones (Cross & Goldenberg, 2003; NCTE, 1997; Nutting, 2003). “The increased use of part-time faculty is ironic given current criticism of full-timers. If many full-time faculty are not in their offices on Fridays, part-timers do not even have offices” (Rhoades, 1998, p. 132).

Furthermore, members of this group may be employed at several institutions, in an effort to cobble together the semblance of full-time employment (Conley, Leslie, & Zimble, 2002), and consequently may find themselves distracted as they navigate several different institutions. This may be especially true in locales in which there are multiple institutions of higher education in close proximity. Furthermore, contingent faculty may not understand the mission and culture of the institution or know appropriate resources to which they could direct students (Phipps & Merisotis, 2005; Schibik & Harrington, 2004b). Finally, contingent faculty members may perceive their employment to be tenuous and may not engage in rigorous teaching (Kezar, 2013; NCTE, 1997; Umbach, 2008), in hopes that higher student ratings may lead to continued employment. Recent data suggest that part-time faculty members tend to engage in less experimentation in the classroom than do their full-time peers (American Association of University Professors, 2016a). For a group that now comprises over half of the national academic labor force, this is concerning and has serious implications for their roles as teachers.

An additional challenge to faculty when attempting to fulfill their instructional duties is the increased focus on internationalization and globalization. Altbach and Peterson (1998) indicated that American faculty members need to be more internationally conscious. There have been similar calls for more global competence (American Council on Education, 2015). Correspondingly, on many campuses, faculty are being asked to infuse global and internationally relevant issues into their courses (Hendrickson, Lane, Harris, & Dorman, 2013). Pressures to change course content can add additional hurdles for faculty members. Again, these pressures may not exist for all faculty, but can certainly exist for those at institutions who are attempting to create a global presence.

However, amid all of these changes to the composition and roles of the American faculty, many of which pose new challenges, there is also an interest in the instructional role of the professoriate. Not only have a number of resources been produced to assist faculty in this role (Doyle, 2004, 2008; Fink, 2004; Weimer, 2000), but there have also been a number of studies initiated to try to understand the teaching role and activity of the professoriate. From single-variable descriptive analyses (Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado, 2014; Hurtado, Eagan, Pryor, Whang, & Tran, 2012) to more robust statistical analyses using multiple variables and various modeling (Centra & Gaubatz, 2000; Nelson Laird, Shoup, Kuh, & Schwarz, 2008; Umbach & Wawrzynski, 2005; Webber, 2012), there are scholars interested in understanding the implications of this very important role of the American faculty. Research on, and attention to, the instructional roles and responsibilities of the American faculty allows leaders at institutions of higher education to better support faculty members as they provide instruction.

### **Learner-Centered Instruction in Higher Education**

Contemporary higher education has a tri-partite mission to engage in and advance teaching, research, and service (Hendrickson, Lane, Harris, & Dorman, 2013). In the current climate of accountability and increased scrutiny related to student learning and fiscal responsibility within higher education, there has been a heightened emphasis on the teaching enterprise of American postsecondary institutions. Not only have voices from inside academia urged for faculty to not lose their focus on teaching (Kerr, 1995), but teaching and learning on college campuses appears to be an easy target for the popular press and national media as well. It is not uncommon to read accounts of faculty who are focused on research at the expense of their

teaching. In the contemporary era, with a focus on accountability and cost-savings, faculty and their activities are prime targets for examination. However, despite this scrutiny there is hope.

While higher education has not responded to all of the indictments related to student learning, there has been progress made in this domain. Starting with the Center for Research on Learning and Teaching at the University of Michigan in 1962 (Sorcinelli, Austin, Eddie, & Beach, 2006), many institutions have created units and centers focused on teaching and learning or teaching excellence, in hopes of providing professional development opportunities for faculty members to improve their teaching skills. These centers often employ staff members whose roles and responsibilities focus on providing ongoing professional development for faculty in the area of teaching practice, through workshops, services, and outreach efforts (Condon, Iverson, Manduca, Rutz, & Willett, 2016; Lawler & King, 2000). Campuses have also hired professionals who are experienced in instructional design or who are dedicated to the scholarship of teaching and learning in order to further aid faculty seeking to improve their skill sets. Additionally, a number of conferences devoted to teaching and learning are hosted each year, at both the national and local level.

Embedded within the work of these teaching and learning centers and within the conversations taking place at these conferences is a collection of techniques that can be described as learner-centered instruction. The term learner-centered instruction has existed for well over a decade, although the concepts and practices related to this term continue to evolve and demonstrate their relevance. Simultaneously, there is no single definition of learner-centered instruction (Attard, Di Ioio, Geven, & Santa, 2010). In many ways, this phrase has become an umbrella term meant to represent a broad philosophy that encourages focusing on the learner when designing instruction, as well as a nebulous, and evolving, set of pedagogical practices that

promote this type of learning. There is even discrepancy related to the overall term, with scholars writing about student-centered learning, student-centered teaching, learner-centered teaching, learner-centered assessment, and learner-centered education. Active learning is another term that is often utilized to describe a set of practice that actively engage students in the learning process. Active learning encompasses any set of practices that engage students in a classroom beyond the passive reception of an instructor's lecture (Faust & Paulson, 1998; Lammers & Murphy, 2002).

For the sake of clarity, and efficiency, learner-centered instruction (LCI) will be the term utilized to describe this concept and the associated pedagogical practices within this document. Whereas some authors might argue that these varying titles represent nuanced differences, a scan of the literature suggests that they are largely an exercise in semantics. Despite the difficulties with nomenclature, an increased focus on these techniques is necessary to assist faculty in meeting their obligation to facilitate learning for students. Menges (2000) stated that although higher education researchers know a great deal about faculty and their disciplines, and even to some extent how they teach, researchers know remarkably little about why faculty teach the way they do. Menges additionally stated that understanding this information could provide insight into why more faculty members do not use these teaching practices, which research has shown to be more effective for students. In order to understand learner-centered instruction, and the pedagogical practices associated with it, it may be helpful to survey its origins and evolution.

The ideas related to learner-centered instruction have experienced an evolution and growth within higher education, but some of the associated philosophies were prominent during the late twentieth century. In 1990, Boyer published *Scholarship Reconsidered: Priorities of the Professoriate*, in which he argued for a reconceptualization of the academic reward structure. Boyer wished for the definition of scholarship, which had been primarily tied to the research

function of faculty, to be broadened to include all aspects of faculty work, including the dissemination of knowledge and the teaching function. In this work, Boyer called this form of scholarship, the “scholarship of teaching,” stating that the very act of teaching required work and needed to be highly valued. Though not the first voice to suggest a focus on teaching, Boyer’s work received national attention and prompted conversations related to these ideas. Focused primarily on the role of faculty members, this provocative work called attention to teaching and learning in postsecondary education.

The following year, Bonwell and Eison (1991) argued that students should be the focus of attention in the teaching and learning process. Drawing on research conducted during the 1980s, they suggested that students should be encouraged to engage in practices and activities that demanded more rigor and required them to think about learning. They advocated for students to read, write, solve problems, and engage in discussion, with the goal of engaging in higher-order thinking. The associated argument was that students would learn more if they critically thought about their own learning. Similarly, King (1993) published a piece called “From Sage on the Stage to Guide on the Side,” which encouraged faculty to recast their role in the classroom. King’s argument was that faculty had traditionally been the center of attention in the college classroom setting, but instead needed to shift the attention to the students. This philosophical shift represents an underpinning of learner-centered instruction: students should be at the center of the learning process. King was not suggesting that faculty no longer had a role in the learning process; instead, the argument was that they should assist students in the process of learning. The article included examples and recommendations for faculty to embed active learning practices in the college classroom.

Barr and Tagg (1995) extended this line of thought in “From Teaching to Learning: A New Paradigm for Undergraduate Education,” an article in which they suggested a paradigmatic shift in higher education. Like King (1993), Barr and Tagg encouraged faculty to reconsider their roles and to think about how students were part of the learning process. The article compared and contrasted the teaching paradigm and the learning paradigm, highlighting the differences between the two and the ways in which roles changed. Stage, Muller, Kinzie, and Simmons (1998) drew on learning theories to share a similar viewpoint, reinforcing the importance of engaging students in the learning process. They advocated for social learning experiences, varying instructional methods beyond lecture, providing choices to students, and demonstrating the value of diversity.

In 2002, Weimer published *Learner Centered Teaching: Five Key Changes to Practice*, a book that not only provided additional thoughts about placing students at the center of the learning process, but also provided suggestions for how faculty could go about this work. Though not the individual to coin the phrase “learner-centered,” nor the first to use it, Weimer essentially codified the term and secured its place in discussions about teaching and learning. In the book, Weimer discussed the roles of faculty, as well as the roles of students, stating that there has to be a transfer of power from faculty to students. Along with this shared power, there should also be shared responsibility in the learning process. Weimer stated that students must be involved in the “messy work” of learning. Weimer additionally shared examples from her own teaching, as well as from the classroom experience of others.

Shortly thereafter, Fink (2003) produced a book focused on the creation of significant learning experiences. This work concentrated less on faculty roles and responsibilities related to learning and more on how learner-centered principles could and should be infused in the design

and creation of courses. Fink also included a taxonomy of significant learning in a circular model, including elements of foundational knowledge, application, integration, the human element, and caring. The ideas of foundational knowledge and their subsequent application to differing contexts were not new introductions into the line of thought related to learner-centered instruction. However, the human element, in which students relate to concepts and other individuals on a personal level, was an important addition. Ultimately, Fink advised a model that teaches students how to learn.

Fink also stated that students needed to be exposed to multiple methods of learning, including the transfer of information through which learners are essentially passive recipients of information; active engagement, in which students play a role in the learning process, through activities such as role-playing or performing the expected learning; and reflection, in which students spending time thinking about their learning. Fink did not suggest that all three methods of learning must always be used, but posited that for significant learning to occur, students must engage with content via more than one method.

Bain (2004) wrote about practices that the best college teachers utilize to produce learning for students. Through many of these case studies and examples, Bain highlights principles that underscored the focus on learner-centered instruction. Doyle (2008, 2011) extended the work of Weimer (2002), even using similar book titles, but performing meta-analyses of literature pertaining to learning to demonstrate pedagogical practices that could be employed in the classroom. Drawing on neuroscience and cognitive psychology, Doyle talked about practices such as concept mapping, reflection, and group learning and wrote about scientific research that supported these practices. Doyle (2008) stated, “The one who does the work does the learning” (p. 63). Blumberg (2008) provided a similar resource for faculty to that of Weimer

(2002), by discussing not only the philosophical shift required of faculty, but also practical steps to implement these changes within their classrooms.

At large, learner-centered instruction seeks to shift the focus of the teaching and learning process from the role of the teacher to emphasize the role of the student. Students should be involved in the “hard, messy work” of learning (Weimer, 2002, p.88). This is not to diminish the importance of instructors and faculty members, but rather to better engage students in the act of learning. Thinking about getting students to do the work of learning requires faculty members to examine each outcome, each learning activity, and each assessment task to determine if they are the most appropriate tasks to facilitate the desired learning. “Pedagogical procedures must be carefully planned, continuously examined, and relate directly to the subject taught” (Boyer, 1990, pp. 23-24). This means that learner-centered instruction deals with intentionally planned and carefully selected activities intended to promote learning.

Additionally, the concepts of learner-centered instruction seek to equip students to be better learners and lead to skills that promote and encourage lifelong learning. These skills should allow students to apply existing knowledge, and knowledge they gain, to new situations and contexts. Often, learner-centered instruction is cast against the traditional form of instruction in higher education, that of lecture. The paradigm in which lecture is the primary form of instruction is the teacher-centered paradigm (Roper, 2003). Although not inherently bad, lecture is recommended to be used only to share concepts and deliver content that students cannot come to know themselves (Doyle, 2008). Lecture is useful in situations where a deep understanding of content is not the desired outcome (Roper, 2003). In contrast, learner-centered instruction requires that students be engaged in the process of discovery. “Learning involves an individual actively attempting to ‘make sense’ of his or her experiences, resulting in a conceptual

reorganization of thinking that is in some way more adaptive or that enables the individual to function more effectively” (King, 2003, p. 237).

At its heart, learner-centered instruction attempts to achieve several goals for students. It seeks to lead students to care about the content and subject matter they are learning (Fink, 2003). It should further foster learning experiences that transcend the specific learning environment and lead to increased involvement in society and the greater world (Brint, 2011). The type of learning that is associated with learner-centered instruction should provide students with critical thinking skills and the ability to apply their learning and thinking to new concepts (Bransford, Brown, & Cocking, 1999).

Many of the scholars writing about learner-centered instruction discuss outcomes that are typically associated with the higher levels of Bloom’s Taxonomy of Educational Objectives (Bloom, 1956), including analyzing, synthesizing, and evaluating information. Learner-centered instruction seeks to make inquiry and student learning a dynamic process, not one in which the learner, or the information with which they interact, is static. Learner-centered instruction additionally seeks to facilitate the type of learner that Marton and Saljo (1976) classified as “deep learning.” Deep learning allows students to identify and understand connections between and among information and concepts. This type of learning consequently leads to long-term retention of information and material (Millis, 2010). Deep learning is a counterpoint to surface learning, in which students have only a superficial grasp of information, often only learning for a test. In contrast, deep learning allows students to see information as connected and evolving and leads to continued learning.

Elaborating on these approaches to learning, Tagg (2003) stated “deep learning is active; surface learning is inert” (p. 70). Lombardi (2007) suggested that the type of learning facilitated

through learner-centered instruction is “authentic learning.” Authentic learning activities can play an important role in the promotion of cognitive learning (Prawat, 1992) and emphasize the application of concepts in real-world situations (Fook & Sidhu, 2010; Rule, 2006). The type of learning described above, and that which is promoted by learner-centered instruction, is likely that which the majority of postsecondary faculty want for their students. Though typically associated with small classes, learner-centered instruction can be applied to courses of all sizes (Blumberg, 2008; Doyle, 2008, 2011; Fink, 2003; Weimer, 2002).

### **Theoretical Foundation of Learner-Centered Instruction**

Learner-centered instruction has theoretical foundations in the work of Dewey, Piaget, and Vygotsky. John Dewey’s focus on experiential education and its role in the learning process inform the work of learner-centered instruction. Central to Dewey’s understanding of learning was the process of inquiry, in which learning resulted from clarification in indeterminate and disconnected situations (Harris, 2014). Consequently, Dewey believed that students could not simply have information transferred to them from a teacher or a book, but instead needed to experience information in order for it to be meaningful and have significance in their learning process (Skilbeck, 1970). This resonates with the main concepts of learner-centered instruction, in which students are drawn into the learning process and engaged with activities that cause them to interact with the material. Dewey did not believe that intelligence was a fixed quantity (Benson, Harkavy, & Pucket, 2007), nor did he support the “empty vessel” (Rodriguez, 2012) concept of education, but instead believed that students needed to interact with material and their surroundings for the experience, and subsequent learning, to be meaningful.

Fundamentally, both Piaget and Vygotsky were concerned with cognitive-structural theories, that is focusing on *how* individuals learn and think, as opposed to *what* they learn or

think (Evans, Forney, & Guido-DiBrito, 1998). Piaget was a Swiss psychologist who had formal training in zoology (Phillips, 1969; Wadsworth, 1971). Yet, Piaget became interested in the process through which students, primarily children, learned. Of principal importance to Piaget was the way in which children thought about information and the qualitative stages through which they progressed when learning (Kolb, 1984; Stage, Muller, Kinzie, & Simmons, 1998; Wadsworth, 1971). Piaget developed several schemata to describe that manner in which children took in new information or processed new information against existing information, assimilation and accommodation. He further described disequilibrium, a state that existed when assimilation and accommodation were out of balance (Salkind, 2008a; Wadsworth, 1971).

Despite the fact that Piaget's focus was on children, the concepts apply to learners of all ages (Salkind, 2008a; Sutherland, 1999). Additionally, although Piaget's theories highlight the processes that take place within students, they have important implications for faculty members as well. Because Piaget insisted that the construction of knowledge was the result of individual action (Wadsworth, 1971), his resulting theory suggests that faculty are needed to create environments that allow students to be exposed to, and interact with, new information. These concepts resonate with King's (1993) idea of a "guide on the side," as well as with multiple strategies supported by neuroscience, as described by Doyle (2008, 2011).

Whereas Piaget was focused on processes taking place within the individual learner, Vygotsky was concerned with how the individual interacted with the surrounding environment (Stage, Muller, Kinzie, & Simmons, 1998; Tudge & Scrimsher, 2003). Building upon the work of Piaget, Vygotsky explored the social construction of knowledge and the associated impact on learning. Central to Vygotsky's work is the concept of the "zone of proximal development" (Hedegaard, 1996; Salkind, 2008b; Vygotsky, 1978), in which students learn through exposure to

students that are slightly more advanced or teachers, that is, when they function at the edge of their own capacity and are assisted by a more advanced peer or an adult. Essentially, for Vygotsky, learning occurred when students worked through concepts with assistance from someone with only slightly more knowledge. This might take the form of a peer, but it could also come in the form of a teacher, providing just enough assistance to allow the student to overcome the cognitive hurdle. This theory led to the idea of scaffolding, a common practice in learner-centered instruction.

Scaffolding refers to the practice of creating just enough challenge to force the learner to develop new cognitive structures and lead to new learning (Slavin, 2003). Scaffolding is commonly referred to in the work of Fink (2003) and Doyle (2008, 2011). The idea of scaffolding resonates with the concept of plus-one staging, in which a cognitive mismatch facilitates learning and developmental growth (Evans, Forney, & Guido-DiBrito, 1998). An important consideration related to Vygotsky's view of education is that the student must be active, it is not a focus on the effect of the environment on the student, but how the student interacts with the surrounding environment (Tudge & Scrimsher, 2003).

Writ large, learner-centered instruction draws heavily on constructivism (Blumberg, 2015), a learning theory that developed and gained prominence in the 1980s (Sink, 2014). Constructivism is concerned with how students construct understanding or make meaning of their experience (Merriam, Caffarella, & Baumgartner, 2007; Michael, 2006). Constructivism is rooted in the work of Piaget and Vygotsky and poses learning as a social process, through which learners construct new information. Central to constructivist theory is the understanding of learning as a process through which students iteratively build new mental representations (Soloway, Jackson, Klein, Quintana, Reed, Spitulnik, Stratford, Studer, Jul, Eng, & Scala, 1996).

From the constructivist viewpoint, information cannot simply be transmitted to learners; students must be active in the discovery process (Santrock, 2010). Constructivism emphasizes the importance of meaning-making, while social constructivism stresses the importance of interacting with others in the learning process, as well as the practice of reflecting on both the learning process and what has been learned (Prawat & Floden, 1994; Stage, Muller, Kinzie, & Simmons, 1998). This learning theory has important implications for, and strong connections to, learner-centered instruction, which often includes group learning situations or activities in which students interact with one another as part of the learning process. Furthermore, constructivism places a heavy emphasis on activities that encourage learners to discover knowledge and construct meaning (Sink, 2014).

The concepts related to learner-centered instruction and constructivism have important implications for the teaching role of American postsecondary faculty. “Teaching is by definition the promotion of learning and ought therefore to be informed by the best of our knowledge about learning” (Macleod & Golby, 2003, p. 353). This suggests that faculty should focus their attention to the findings of emerging research about learning in order to improve their teaching practice. Essentially, this is the core of the argument made by Boyer (1990), Barr and Tagg (1995), and others. “Discovery, integration, and application are not enough. What is needed, finally, is the *scholarship of teaching*, or transmission, in order to keep the flame of scholarship alive” (Boyer, 1996, p. 132). In order to fulfill the teaching responsibility associated with the faculty role and provide effective learning opportunities for postsecondary students, American faculty members should continue to incorporate effective teaching methods into their classroom instruction.

## **Forms of Learner-Centered Instruction**

As previously mentioned, not only are their difficulties related to the nomenclature used to label learner-centered instruction, but there are also challenges related to defining the set of practices included within this umbrella term. Different authors include varying sets of teaching and learning methods within their scholarship associated with learner-centered instruction. At a rudimentary level, the most common observation involves what learner-centered instruction is not; namely, traditional lecture. As such, the following section will include descriptions of those practices most frequently appearing in literature related to learner-centered instruction.

Concept mapping is a practice in which students create a graphic representation of the ways in which disparate ideas are related. This depiction can use clouds or bubbles around concepts in order to display primacy, while lines can be drawn to show varying connections among concepts or ideas, including semantic relationships (Doyle, 2008). This learning activity can be beneficial not only for students, who can then begin to recognize their own learning, as well as to acknowledge gaps, but can also be a useful tool for instructors, who can similarly assess the progress students are making with their learning. Concept mapping can be a helpful learning method to facilitate deep learning (Marton & Saljo, 1976) for students by causing them to organize and arrange concepts in a manner that demonstrates existing connections (Doyle & Zakrajsek, 2013; Faust & Paulson, 1998).

Another common practice is reflection, which can take a variety of forms. Reflection can exist in the form of group processing, individual conversation, or in written form. Reflection may also include students thinking about their emotional or intellectual reactions to lectures, or a combination of the two (Nilson, 2010). Deeply rooted in constructivism, reflection forces students to process their own learning and is advocated for by Fink (2003), Doyle (2011), and

Stage, Muller, Kinzie, and Simmons (1998). Reflection is closely related to the concept of metacognition, which is also frequently used in the extant literature related to learner-centered instruction, in which students think about their own thinking and learning (Girash, 2014; Lombardi, 2007). Reflection through journaling can greatly enhance not only student understanding, but also abilities related to recall (Doyle, 2008).

Faculty can encourage reflection through provocative questions used during class time, as part of homework assignments, or through activities such as the one-minute paper (Faust & Paulson, 1998; Nilson, 2010), in which an instructor might ask students to write the major concepts they learned on any given day during the last one-minute of the class. An additional form of reflection may be “think alouds,” in which students talk through their thought process in addressing problems or cognitive tasks (Hutchings, Huber, & Ciccone, 2011). Each of these activities can provide feedback to the instructor relative to the learning of students, both individually and collectively.

Another common learner-centered instructional practice is that of students completing multiple drafts of written work (Bonwell & Eison, 1991; Nilson, 2010; Webber, 2012; Wohlfarth, Sheras, Bennett, Simon, Pimental, & Gabel, 2008). Multiple drafts of written work not only allow students to analyze and review their own work, but also to receive formative feedback from peers or instructors throughout the process. With each iteration of the written work, students have the ability to incorporate new knowledge of feedback. Writing is proven to cause students to actively think about the material with which they are interacting (Nilson, 2010), and multiple drafts reinforce the frequency with which students interact with said material.

Additional learner-centered instructional practices included embedded assessment, which can occur in any number of forms. Essentially the purpose of these activities is to provide

formative assessment to students, as well as to provide the course instructor with information relative to the learning occurring in the course. Embedded assessment activities are most effective when they demonstrate real world relevance (Doyle, 2008), ensuring that they are perceived as a vehicle for learning and merely as a hurdle to overcome. Fink (2003) posited that embedded assessment is most fruitful as a learning activity when it occurs frequently and provides tangible information to students about their learning.

Simulations and role-playing can be useful learning activities for students in order to apply information (Meyers & Jones, 1998) and practice, or demonstrate mastery of, intended skills. Students are engaged emotionally, cognitively, and behaviorally (Nilson, 2010). These active learning practices not only cause students to internalize and interact with content, but they also provide feedback as to how students are progressing through a course. Simulations typically include real life actions, an analysis of how these actions connect with systems, and an opportunity for feedback and results (Aldrich, 2009). Essentially, these learning activities are grounded in real-world settings and correspond with articulated learning goals.

With role-playing, students act out scenarios, causing them to grapple with theories and concepts being covered in the course (Faust & Paulson, 1998; Lammers & Murphy, 2002). By grappling with these concepts, students are able to practice the application of knowledge (Meyers & Jones, 1993). Role-playing may also allow students to encounter controversial topics in a safe environment that allows them to explore deeply these issues (Middendorf & Kalish, 1996). These scenarios can be scaled from individual roles to group interactions. This pedagogical practice involves students by causing them to relate to the role that they, or others, are playing (Nilson, 2010) and to analyze difficult problems (Lattuca & Stark, 2009). Closely associated with simulations and role-playing are case studies, in which students analyze a situation and

formulate a response. Although possessing nuanced differences, these three forms of learner-centered instruction present students with the opportunity to encounter real-world, ill-defined problems which can promote significant gains in learning (Doyle, 2008, 2011).

Gamification is another learner-centered tactic that has emerged in recent years. Essentially, gamification builds upon the gaming culture in which contemporary students have grown and developed to provide opportunities for students to “level-up” as they demonstrate content mastery (Bowen, 2012). Gamification and leveling-up share a direct lineage with Vygotsky’s theory and the associated concept of scaffolding, which provides the opportunity for students to engage with tasks beyond their current ability (Hmelo-Silver, Duncan, & Chinn, 2007). Leveling-up allows students to demonstrate mastery of a specific task or concept and receive enough cognitive challenge to lead to further development and learning. In addition to these gains, gamification also seeks to make learning more fun.

Cooperative learning and collaborative learning are terms that are at times used interchangeably and at times used to distinguish slightly varied practices. However, in either case, cooperative and collaborative learning draw upon the social constructivist paradigm, which insists that the process of knowledge creation is a shared experience (Prawat & Floden, 1994; Stage, Muller, Kinzie, & Simmons, 1998). As “learning is influenced by social interactions, interpersonal relations, and communication with others” (Center for Psychology in Schools and Education, 1997, p. 5), collaborative and cooperative learning techniques seek to engage students in learning activities in which they work in groups toward a common goal. These groups can consist of pairs or even small clusters of students who work in a concerted effort. In addition to grappling with content, students govern their interpersonal relationships, articulate their ideas to others, and make decisions that affect the group as a whole (Pedersen & Liu, 2003).

In cooperative and collaborative learning activities, groups of students may work together in out-of-class projects, in-class projects, in-class presentations, and in study groups (Hammer & Giordano, 2012). These practices are beneficial to students not only because they learn how to work with others, but also because they developed interpersonal skills by allowing students to listen to and evaluate the thoughts of others (AACU, 2007; Crooks, 1998). Cooperative learning has been differentiated from collaborative learning because while students work together toward a common goal, they are assessed on an individual basis (Prince, 2004).

A sub-practice of cooperative and collaborative learning is peer-teaching or peer-evaluation. In this sub-practice, students are often paired and may either provide instruction to one another or may provide feedback, such as on a presentation or a written paper. Despite the fact that students may have differing opinions about “group work,” this pedagogical practice is reinforced by the literature (Doyle, 2008, 2010; Nilson, 2010). Students are forced to learn and understand course material before presenting it to other students (Lattuca & Stark, 2009). Wenzel (2000) found that student learning increases when they engage in cooperative learning and students demonstrate even greater gains when working in groups that include difference. This difference can include gender, race, and even age. Through these peer-to-peer activities, students are empowered to take turns asking and answering questions (Goldschmid & Goldschmid, 1976). The idea behind this activity is that students work to co-construct knowledge and understanding of material.

Problem-based learning (PBL) is another concept closely associated with learner-centered instruction. Problem-based learning originated in medical schools (Blumberg, 2014; Wood, 2004), where its practical focus was highly valued. In problem-based learning, instructors provide students with a problem that is closely related to course content (Prince, 2004). The

course may have not yet covered all of the subject matter necessary to solve or address the problem, but students should have enough mastery of content to be able to work on the problem. This allows students the opportunity to question the course content and their own understanding of the content (Blumberg, 2014). Accordingly, these “problems serve as the springboard for learning” (Stage, Muller, & Kinzie, & Simmons, 1998). These intentionally selected problems force students to evaluate the situation, consider possibilities, and determine potential solutions to the problem (Biggs, 1999). Problem-based learning can provide the appropriate level of cognitive challenge to lead to gains in learning. Much like simulations and role-playing, problem-based learning engages students with authentic tasks, real-world relevance, and ill-defined problems (Doyle, 2011), such as those they might encounter in their professional careers (Biggs, 1999), further preparing them for life beyond the collegiate environment.

Discussion and oral presentations represent another form of learner-centered instruction. These tasks and activities require that students engage with, and take ownership of, course content. Discussion is defined as “a productive exchange of viewpoints, a collective exploration of issues” (Nilson, 2010, p. 127). Discussion can be facilitated with entire classes, in large groups, or in one-on-one settings and fosters learning through “reciprocity and movement, exchange and inquiry, cooperation and collaboration, formality and informality” (Brookfield & Preskill, 2005, p. 6). Discussion maintains student interest and help to develop critical thinking skills (Lattuca & Stark, 2009). Oral presentation typically involves a single student, or small group of students, presenting information to a larger group. In both of these practices, it is necessary for students to grapple with information and course content, in order to analyze, synthesize, and evaluate it, before sharing their thoughts with others (Lombardi, 2007). Additionally, students gain skills related to preparation, rehearsal, and delivery platforms

(Nilson, 2010). These two pedagogical practices also lend themselves to feedback, either in the moment or after a period of time for reflection.

### **Previous Studies Related to Learner Centered Instruction**

As previously discussed, the approaches to studying pedagogical practice used by faculty and subsequent student gains have been varied and somewhat limited. In general, there exists a paucity of studies that have sought to explore the topic at a national level. However, some studies have explored the topic more specifically, focusing on disciplines, individual courses, or specific pedagogical techniques. Regardless of the form of learner-centered instructional technique that is utilized, the literature demonstrates that it has a positive impact on student learning. In a meta-analysis of research related to pedagogical practices beyond lecture, McKeachie, Pintrick, Lin, and Smith (1986) found that peer-to-peer teaching and learning was more effective than traditional lecture practice. McCarthy and Anderson (2000) found evidence that across multiple disciplines, students who were taught using role-playing and collaborative learning performed better on course evaluations than their peers who were taught with traditional instructional methods. Bonwell and Eison (1991) found evidence that students preferred pedagogical practices that engaged them in active learning. The findings further suggested that lecture and active learning practices could be just as effective for delivering content, but active learning techniques lead to increased critical thinking and the ability to apply learning to new contexts. Hake (1998) suggested that the worst implementation of active learning practices could still produce student outcomes equal to the best lecture practices.

Utilizing data from Faculty Survey of Student Engagement (FSSE) and the National Survey of Student Engagement (NSSE), Umbach and Wawrzynski (2005) found that students on

campuses where faculty utilized learner-centered instructional practice reported greater levels of perceived academic challenge, as well as greater levels of self-reported academic gain.

Levine, Fallahi, Nicoll-Senft, Tessier, Watson, and Wood (2008) studied the impact of courses designed around learner-centered principles using Fink's (2003) instructional design strategies. Across disciplines, students showed gains not only in course grades, but also in areas relative to foundational knowledge and application. Similarly, Armbruster, Patel, Johnson, and Weiss (2009) found that students taught with learner-centered instructional strategies demonstrated greater gains in academic achievement when compared to those taught using traditional lecture methods. Derting and Ebert-May (2010) had similar findings when studying students in biology classes.

Research has suggested that learner-centered instruction leads to greater academic achievement for students. Performing a meta-analysis of over two hundred studies, Freeman, Eddy, McDonough, Smith, Okorafor, Jordt, and Wenderoth (2014) found that students taught using learner-centered methods demonstrated six percent gains in test scores. Additionally, students taught using traditional lecture methods were one and a half times more likely to fail than those students taught with learner-centered instructional methods. Weimer (2002), Blumberg (2009), and Bain (2004) share similar accounts, both from their personal experience teaching courses, as well as anecdotes from faculty with whom they have interacted while pursuing learner-centered instruction. However, despite the literature that demonstrates positive student outcomes and increased academic achievement resulting from learner-centered instructional practices, just over fifty percent of faculty still rely heavily on lecture (Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado, 2014).

Literature related to the popularity or frequent use of learner-centered instructional practices is relatively sparse. Several recent studies suggest that cooperative learning, discussion, oral presentation, and peer-evaluation are those which faculty utilize most frequently (Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado, 2014; Hurtado, Eagan, Pryor, Whang, & Tran, 2012; Webber, 2012), with discussion being the most often cited form. However, this may be a function of the national surveys utilized to collect data from faculty for the studies and the available response options on those surveys. This is an area of study that merits further exploration and research.

Nelson Laird, Garver, and Niskode-Dossett (2011) used data from the Faculty Survey of Student Engagement (FSSE) to explore course-specific influences that mediate gender differences in classroom instruction and subsequent learning. Their findings suggested that male faculty rely on lecture, which is typically cast as the foil to learner-centered practice, more so than do female among faculty. Additionally, they found that faculty members who identified as Asian/Pacific Islander tended to use lecture as a primary means of instruction more often than their White peers did. This finding may have cultural implications, as higher education in Eastern countries often relies on rote learning and memorization. Additionally, Nelson Laird, Garver, and Niskode-Dossett (2011) found that faculty on the tenure track, but not yet tenured relied on lecture more so than their tenured peers or those faculty members who were not tenure eligible. Limitations of this study include the fact that the sample was not random; it included only faculty members whose institutions elected to participate in the 2006 iteration of the FSSE survey. Additionally, faculty members were able to select which courses they thought about when completing the survey. However, this study is helpful in understanding demographic variables that relate to faculty members' employment of learner-centered pedagogical practices.

Understanding the implications of gender, race and ethnicity, and rank on faculty use of teaching techniques provide insight into what faculty might be more prone to utilize these teaching methods.

With a slightly different focus, Centra and Gaubatz (2000) studied the impact of gender on faculty teaching evaluations by students. Although not specifically focused on learner-centered techniques, or their impact on student learning outcomes, the study had some interesting findings. The findings of this study suggested that male faculty were twice more likely to rely heavily on lecture than were female faculty. Relatedly, female faculty members were twice as likely to incorporate active learning techniques, such as discussion, into their courses. The findings of the study have further implications related to class size, wherein smaller class sizes had higher ratings. The authors posited that this might be related more to the fact that smaller class sizes can more easily lend themselves to active learning techniques, and consequently more perceived learning, which might lead to higher ratings than ratings directly tied to students' preferences for smaller classes.

In an effort to understand the use of learner-centered assessment and its change over time, Webber (2012) utilized data from the 1993 and 2004 administrations of the National Study of Postsecondary Faculty (NSOPF). The findings of this study were similar to those of Nelson Laird, Shoup, Kuh, and Schwarz, (2008) in that female faculty members were more likely to engage in learner-centered assessment techniques than were their male peers. However, in contrast to Nelson Laird, et al. (2011), Webber (2012) found that faculty on the tenure track tended to rely on learner-centered assessment practices more so than did faculty who were not on the tenure track. Finally, the findings from this study suggested that use of learner-centered assessment practice had increased between 1993 and 2004. The analysis of data from two

separate periods in time provided insight regarding how faculty members respond to calls for greater emphasis on focus on teaching, much of which was heightened between the two iterations of the survey used in this study.

The Higher Education Research Institute (HERI) at UCLA regularly produces monographs that share findings from its Faculty Survey. These monographs tend to report trend data and general descriptive findings. Reports by Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado (2014) and Hurtado, Eagan, Pryor, Whang, and Tran (2012) shared similar findings, which suggested that the use of learner-centered teaching practices have increased over time. Again, lecture is the common foil for these pedagogical practices and these reports tend to compare the two again one another. These monographs tend to highlight discussion, when discussing learner-centered approaches and techniques, suggesting that nearly 80% of faculty use classroom discussion in their courses. Again, male faculty member tend to rely on lecture more often than do their female peers.

Additional studies have explored the use of active learning practices on student outcomes. Hake (1998) used pre- and post- tests in over sixty engineering courses to discover that courses with interactive-engagement as a learning method yielded higher student outcomes via test results than the traditional method of instruction, which relied primarily on lecture. Performing a meta-analysis of existing research, McKeachie, Pintrick, Lin, and Smith (1996) found that active learning techniques contributed to higher levels of student outcomes and promoted greater yields in student learning. One notable practice was peer-to-peer evaluation and instruction. Essentially, when students work together, either in pairs or in groups, they tend to increase their learning. This finding is supported by constructivist theory, which suggests that learning is social in nature and constructed through experience.

As described above, existing studies of faculty use of learner-centered instruction techniques have several limitations. One general limitation is the inability to link specific instructors and instructional practices with specific student learning and achievement outcomes. Umbach and Wawrzynski (2005) attempted to address this limitation by using both data from the NSSE and FSSE surveys, but were still limited by the fact that the respective data could only be linked by the institution, which was ultimately the unit of analysis. Additional limitations include the samples from which much of this data has been drawn. As the respondents in these studies are only from those institutions who elected to participate in each of the respective surveys, there are some limitations associated with this, namely, there may be faculty and institutional types who are missing from analysis.

Some studies have been conducted utilizing information obtained from instructor evaluations (Centra & Gaubatz, 2000), which limit the data available for analysis. Questions of interest, such as specific instructional techniques employed in the course, may not be collected in the evaluations. Similarly, researchers may limit the variables used in their respective analyses, in order to allow for model validity (Webber, 2012). Some of the studies are useful in providing insight about trends, but do so utilizing what is primarily descriptive information. Additionally, some general reports using surveys of faculty members cover a wide number of issues, and consequently, the resulting monographs do not focus on learner-centered techniques and primarily provide single-variable descriptive analysis when discussing these topics. Although somewhat limited as single-variable descriptive analysis, these monographs are insightful because they allow for quick comparisons of trends, specifically among demographic groups and over time. This information is useful in providing a rudimentary understanding of the pedagogical practices faculty members employ in the classroom.

As may be expected, learner-centered instruction is not universally accepted by all parties associated with American higher education. Dissenting voices exist related to the effect of these pedagogical practices on students. Kirschner, Sweller, & Clark (2006) commented on several learner-centered instructional methods, stating that these pedagogical practices leave students to learn on their own, with minimal guidance. They also suggested that learning a discipline through experience and process is not as effective as being taught a discipline as a body of knowledge.

McKenna (2013) shared similar concerns, specifically related to the ways in which disciplinary norms underpin the actual knowledge being learned. Arum and Roksa (2010) suggested that learner-centered instructional methods lack the rigor necessary for students' academic progress, specifically pinpointing collaborative learning activities as a culprit. Their findings indicated that students who studied alone gain more knowledge than those engaged with peer-learning. Felder and Brent (1996) suggested that while the gains of learner-centered instructional practices may exist, they are neither instantaneous nor guaranteed.

While there may be dissenting views about the effectiveness or appropriateness of learner-centered instruction, the research and literature overwhelmingly supports the benefit of this pedagogical practice within the classroom. The associated teaching and learning activities, not only have a number of studies that support their effectiveness, but they also have a foundation in educational theory.

### **Conceptual Framework of the Study**

The study of learner-centered instructional practices is one that merits continued attention. As higher education continues to fall under scrutiny by legislators, policymakers, and the general public, demands for an emphasis on teaching and student outcomes will continue to

exist. It behooves American institutions of postsecondary education to have the ability to demonstrate an increased focus on student learning outcomes, specifically through the instructional methods used by faculty to promote them. Explicitly, institutional leadership and faculty development professionals stand to gain from an increased understanding of what influences faculty members' employment of these pedagogical practices. Shulman (1999) posited that "if we are to take learning seriously, we must profess teaching, and take our profession as teachers seriously" (p. 17). In order to take seriously the profession of teaching, higher education researchers and policymakers need to have an increased understanding of the type of teaching that takes place at postsecondary institutions.

Menges (2000) suggested that researchers know a great deal about what and how faculty teach, as well as that active learning practices are beneficial; however, what researchers and policymakers do not know is *why* faculty members teach the way they do. Menges further stated that despite solid, research-based evidence that active learning or learner-centered instructional approaches are better, many faculty members do not employ them to the extent they should. In order to address this gap, and encourage faculty members to employ these practices, there is a need for research into the question of what factors influence postsecondary faculty members to teach the way they do. As such, more insight is needed into what demographic, work experience, and institutional factors influence faculty members' use of learner-centered instructional techniques.

The conceptual framework for this study is guided by the work of Bowen and Schuster (1986), Blackburn and Lawrence (1995), and Lattuca and Stark (2009). These studies focused on individual faculty members' attributes and institutional characteristics as they relate to

motivation and performance, with attention to the various roles performed by faculty, including instruction.

Bowen and Schuster (1986) were interested in the past, present, and future conditions of the role of the professoriate and its status within American higher education. To undertake this study, the authors conducted a meta-analysis of over 400 publications, in addition to conducting their own surveys and performing interviews. The resulting book described the three major roles of the professoriate and characteristics that influence these roles. The authors provided an in-depth description of American faculty members, including a description of personal characteristics such as faculty members' education, work experience, age, rank, tenure, discipline, sex, race, and status. Bowen and Schuster then provided a description of the faculty work environment, including a focus on workload, teaching load, use of time, institutional setting, and performance and productivity. The authors concluded the work with proposed reforms and policy considerations that would maintain and strengthen the role of faculty in postsecondary education, specifically related to tenure and curriculum.

Following a similar vein, Blackburn and Lawrence (1995) provided a description of faculty work, using empirical evidence to develop a framework for faculty members' motivation in the various roles of teaching, research, and service. An additional component of the faculty role included in the model, and subsequent findings, is publication. The authors surveyed a random sample of faculty members across institutional types in 1987 and 1988. The resulting work focused on their causal model of sociodemographic and career related variables that contribute to faculty members' motivation to perform their various roles. Sociodemographic variables include those characteristics about an individual that are fixed, such as chronological

age, sex, and race. Other career related variables included academic rank, tenure status, career age, academic discipline, highest degree earned, and productivity.

Environmental variables related to the context of the setting in which faculty members work. These incorporated the employing institution's financial information, geographic location, composition of the faculty, student characteristics, institutional type, and available resources. Blackburn and Lawrence's model suggested utility in predicting publication rates of faculty members. The model provides a useful framework for studying faculty teaching practices, as "characteristics of individuals and their employing institution combine and lead to variations in faculty motivation, behavior, and productivity" (Blackburn & Lawrence, 1995, p. 15). These behaviors can include teaching-specific activities such as pedagogical practices utilized in classroom instruction.

Taking a slightly different approach, Lattuca and Stark (2009) focused on the teaching role of American faculty members, specifically related to curriculum development. The authors built upon prior work, wherein they stated that the "idea of an academic plan is viable for a single lesson, for a course, a program, or an entire college curriculum" (Stark & Lattuca, 1997, p. 2). Within their recent work, Lattuca and Stark (2009) defined curriculum as an academic plan and connect their book with the need for better instructional methods in the classroom. "National surveys of postsecondary faculty consistently show that, despite the emphasis on active learning in discussions of teaching, lecture is the most common instructional process used in college and university classrooms" (Lattuca & Stark, 2009, p. 181). The authors cited the following variables as influences on course planning and curriculum design: student characteristics, external and internal forces, institutional resources, class size, faculty work load, and promotion and tenure status.

## Updated Framework

The purpose of this study is to explore if, and the extent to which, faculty members employ pedagogical practices related to learner-centered instruction in their respective courses. Additionally, it is important to understand the extent to which individual demographic, work experience, and institutional variables influence faculty members and their employment of these specific teaching techniques. Understanding this information will provide greater insight into if, and the extent to which, the increased focus on teaching and learning practices over the past twenty-five years has shifted the manner in which American faculty teach. It will additionally provide insight into what helps or hinders the use of these evidence-based teaching practices in the postsecondary setting.

Utilizing the models proposed by Bowen and Schuster (1986), Blackburn and Lawrence (1995), and Lattuca and Stark (2009) to provide a general framework, the present study seeks to understand the relationship of individual demographic, work experience, and institutional characteristics that influence faculty members' use of learner-centered instructional practices in the college classroom. Building on the work of the aforementioned studies, the independent variables in this study grouped are into three categories: personal demographic characteristics, work experience characteristics, and institutional characteristics. Similar to the studies guiding this research, individual personal demographic characteristics include chronological age, sex, race, and nationality. Personal and demographic characteristics, otherwise known as sociodemographic variables, influence an individual's career opportunities, values, and goals (Hughes, 1998), ultimately affecting the way in which they carry out their work.

Chronological age, sex, race, and ethnicity "influence behavior indirectly by limiting or enhancing one's access to resources and opportunities" (Blackburn & Lawrence, 1995, p. 16).

Age is an important variable for consideration, as there are questions regarding whether aging faculty members continue to excel in their work or if they decline in performance (Finkelstein, Conley, & Schuster, 2016; Stark, Lowther, Bentley, Ryan, Martens, Genthon, Wren, & Shaw, 1990). Additionally, faculty of advanced age have reported being more conservative in their work than their younger peers (Bowen & Schuster, 1986). The sex of faculty members can have implications for their teaching habits and techniques (Lammers & Murphy, 2002; Webber, 2012). Male faculty have reported less time spent teaching than do female faculty members (Blackburn, Lawrence, Bieber, & Trautvetter, 1991; Finkelstein, Conley, & Schuster, 2016). Kessler, Spector, and Gavin (2014) found female faculty members to demonstrate increased satisfaction in teaching-oriented positions, whereas men appeared to be more satisfied in research-oriented faculty roles. Female faculty members may also be more nurturing as part of their classroom teaching (Stark, Lowther, Bentley, Ryan, Martens, Genthon, Wren, & Shaw, 1990).

Race merits inclusion in a study on faculty work due to the way in which an individual's race may inform the way they see the world and ultimately perform their duties. Although there have been strides towards greater inclusion in the professoriate, there are still discrepancies causing underrepresented populations' academic careers to differ from those with dominant identities. This may include limited access to resources, including mentorship (Curtin, Malley, & Steward, 2016), that can inform faculty work and job performance (Blackburn & Lawrence, 1995). Challenges to the intellect and credentials of faculty of color, including negative evaluations of classroom instruction (Reid, 2010), may have implications on their teaching (Turner, Gonzalez, & Wood, 2008).

Work experience variables include career age, tenure status, rank, discipline, highest degree earned, full-time/part-time status, principal activity, importance of role, type of courses taught, teaching activities, professional development, productivity, opinions, and stress.

Career age is an important variable, due the variance in age at which people earn their degrees; consequently, sole reliance on chronological age can be misleading (Blackburn & Lawrence, 1995). Faculty members early in their careers have reported greater use of learner-centered instructional practices in their teaching (Lattuca & Stark, 2009).

Tenure status is another important variable for consideration related to faculty members' work experience. Tenured faculty members have reported less use of learner-centered instructional methods than their non-tenured peers (Webber, 2012). Zhou and Volkwein (2004) found that non-tenured faculty whose responsibilities included high levels of teaching were more likely to be retained by their institution, suggesting that they may have found a niche role to fill within their department. Similarly, rank may play an important role in the use of learner-centered instructional methods. In previous studies, full professors nearing the end of their career demonstrated a greater interest in teaching (Baldwin & Blackburn, 1981); however, research has indicated that rank is not a useful predictor of the percent of time dedicated to teaching (Blackburn, Lawrence, Bieber, & Trautvetter, 1991). More recently, Webber (2012) found that full professors indicated less use of learner-centered instructional methods, relative to peers of other ranks.

Discipline is a characteristic that strongly influences the manner in which faculty members plan and execute teaching activities (Ratcliff, 1996; Stark & Lattuca, 1997; Stark, Lowther, Bentley, Ryan, Marten, Genthon, Wren, & Shaw, 1990). This may largely be due graduate school preparation, which focuses on knowledge acquisition and research application

within a certain field (Travis, 1995). The beliefs that faculty members possess about course content and methods of delivery are heavily influenced by the disciplines in which they were trained. Teaching styles and methods are strongly connected to disciplinary context (Lattuca & Stark, 2009). Research related to disciplinary use of learner-centered instructional techniques has been varied. Walczyk and Ramsey (2003) reported that the use of learner-centered instruction does not differ between the disciplines of math and science. However, in a broader examination, Webber (2012) found that faculty members in the hard sciences reported less use than peers in the soft disciplines.

The highest degree earned by faculty members is another characteristic that deserves examination in a study of learner-centered instruction use. Because graduate preparation focuses on orientation to the discipline and related research, few opportunities exist to acquire pedagogical skills (Travis, 1995). However, many institutions granting terminal degrees may have resources, such as centers of teaching and learning, dedicated to improving instruction. It is possible that there may be exposure to these resources during graduate work and doctoral preparation.

Employment status can have an effect on how faculty members choose to teach; adjunct faculty are more likely to rely on traditional teaching methods, such as lecture, than their full-time peers are (Caruth & Caruth, 2013). Webber (2012) found full-time faculty used learner-centered techniques more frequently than part-time peers did. As the proportion of “non-regular” faculty members” (Finkelstein, Conley, & Schuster, 2016) becomes greater, additional exploration needs to occur regarding implications on classroom teaching practice.

Faculty development activities are another component of faculty work experience that can have implications on teaching activity. Among top issues identified for faculty developers to

address are learner-centered instruction and the assessment of the resulting learning (Sorcinelli, Austin, Eddie, & Beach, 2006). Faculty development efforts are an important component of faculty members improving their pedagogy and utilizing learner-centered instructional approaches (Blumberg, 2015).

Faculty productivity, especially publication efforts, may influence classroom practices. However, the literature is limited in the relationship between these two roles. Many studies have focused on one or the other, but have not explored the interaction of the two. However, common reward structure for American postsecondary faculty is tied to research and publication (Fairweather, 1993; Milem, Berger, & Dey, 2000), which ultimately may lead to an increased focus on those areas, as opposed to an emphasis on classroom instruction. However, there are scholars who suggest that faculty members' research can be brought into the classroom to enhance instruction (e.g. Jenkins, 2001; Prince, Felder, & Brent, 2007).

Other faculty work experience characteristics may also inform the methods through which faculty members provide instruction. Tenure pressures, workload, and class size have important implications for teaching activity (Stark, Lowther, Bentley, Ryan, Marten, Genthon, Wren, & Shaw, 1990). Studies suggest that "additional hours spent working per week is a result of efforts spent on research activities, except in two year colleges" (Finkelstein, Conley, & Schuster, 2016, p. 243). Similarly, faculty members with higher teaching loads may be less apt to utilize learner-centered instructional practices (Webber, 2012).

Faculty members' beliefs and attitudes may also influence the ways in which they teach. Research has indicated that faculty have perceived a decline in quality that may influence their morale and behavior (Bowen & Schuster, 1986). Additionally, educational beliefs and disposition can exert influences on curriculum planning and instruction (Stark & Lattuca, 1997;

Stark, Lowther, Bentley, Ryan, Martens, Genthon, Wren, & Shaw, 1990). Although research has not been directly conducted regarding faculty stress and learner-centered instructional practices, it is possible that stress related to one's role could influence the choices made regarding teaching.

Similar to the studies guiding this research, institutional characteristics include institution type, HBCU status, control, religious affiliation, geographic region, size, admission characteristics, personnel composition, revenues, and expenses. Institutional characteristics are typically included as control variables in studies of this nature. Characteristics such as these influence the context in which faculty members conduct their work, ultimately providing incentives and disincentives for certain behaviors (Hughes, 1998).

Institution type demonstrates a strong influence on the type of work to which faculty are oriented. "Those who secured positions at research universities did so on the basis of their research interest and successful record. That is, the motivation to engage in research has already been demonstrated" (Blackburn & Lawrence, 1995, p. 73). Additionally, Umbach and Wawrzynski (2005) found that faculty members at private institutions were more likely to utilize learner-centered instructional techniques in the classroom. Webber (2012) found that faculty at comprehensive and liberal arts colleges were more likely to use learner-centered instructional practices than faculty at doctoral institutions. Faculty members at historically Black colleges and universities (HBCUs) may be more likely to utilize learner-centered instructional practices as a better match of learning style for Black students (Rovai, Gallien, & Wighting, 2005).

Student characteristics can also influence course planning and, ultimately, the instructional methods used within a course (Stark & Lattuca, 1997). Students come to the classroom with a wide array of pre-existing knowledge and competency (Ambrose, Bridges, DiPrieto, & Lovett, & Norma, 2010). Faculty members consider the traits of the students

enrolled in their courses when deliberating how to facilitate the class; they can similarly make adjustments along the way based on students' response to materials.

Institutions' financial expenditure can demonstrate an effect on faculty members' activity, as well. Expenditure for instruction includes "general academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and regular, special, and extension sessions" (National Center for Education Statistics, nd). This form of institutional expenditure may also include those "activities directly related to instruction, including faculty salaries and benefits, office supplies, administration of academic departments, and the proportion of faculty salaries going to departmental research and public service" (Desrochers & Wellman, 2011, p. 21). Instructional expenditure can include faculty development activities, which can provide faculty members with exposure to learner-centered instructional practices. Institutions that value high quality teaching and its influence on student learning choose to allocate resources that help faculty members become better teachers (Mayhew, Selznick, Rockenbach, Bowman, Seifert, & Wolniak, 2017).

This study is grounded in existing literature related to faculty members' demographic traits, work experience, and institutional attributes as they relate to pedagogical practice, but seeks to provide new insight into what factors influence faculty members by examining a large dataset collected from individuals across the country. The updated conceptual model provides a framework for the study, and guidance for variables to include in subsequent analysis, in an effort to understand the relationship of individual demographic, work experience, and institutional characteristics that contribute to or detract from faculty members' use of learner-centered instructional practices in the college classroom.

## CHAPTER 3

### METHODOLOGY

In this chapter, I describe the methods used to analyze the data obtained from the Higher Education Research Institute (HERI) Faculty Survey to address the research questions of this study. First, I present the research questions guiding the study. Next, I explain the data reduction methods utilized to decrease the number of variables that comprise a composite scale to represent the dependent variable. Finally, I discuss the regression analysis methodology used to provide insight into factors that influence faculty members' use of learner-centered instructional approaches.

#### **Research Questions**

This study seeks to provide insight into individual demographic characteristics and institutional characteristics that influence faculty members to employ learner-centered instructional techniques in their pedagogical practice. To this end, the research questions for this study include the following:

1. To what extent do faculty members employ learner-centered instructional practice in their classroom pedagogy?
2. Do demographic characteristics (i.e., age, sex, race) influence faculty members' use of learner-centered instruction?
3. Do work experience characteristics (i.e., career age, tenure status, rank, discipline, highest degree earned, full-time/part-time status, principal activity, importance of role, type of courses taught, teaching activities, professional development, productivity, stress) influence faculty members' use of learner-centered instructional practice?
4. Do institutional characteristics (i.e., geographic region, HBCU status, control, religious affiliation, human resources, total enrollment, revenue, expenditure) influence faculty members' use of learner-centered instruction?

## Research Approach

For this study, survey research is a beneficial approach to address the research questions. Based in postpositivism, which suggests that causes likely determine effects (Creswell, 2003), survey research is one of the most common forms of nonexperimental research to be conducted (Babbie, 1990; Creswell, 2003) by allowing researchers to observe phenomena in order to describe them as they naturally occur without treatments (Patten, 2007). Surveys allow for the collection of attitudes, beliefs, behaviors, and activities from disparate individuals (Creswell, 2003). From these discreet observations, theories can be constructed to provide a unified explanation of the observed phenomena (Patten, 2007). Surveys are additionally advantageous within educational and social science research; consistent with the postpositivist paradigm, hypotheses can be constructed and empirically tested using existing information (Neuman, 1990).

Survey research is beneficial because of the economies associated with it; that is, it is easy to administer survey questionnaires to a large number of individuals with relative ease (Babbie, 1990). Although the number of individuals participating in the survey may be large, they may represent only a sample of the entire population or sampling universe. Sample surveys are not typically collected for the purpose of describing the sample itself, but rather, if the sample is believed to be representative of the entire population, the findings can then be generalized to the entire population (Bartlett, Kotrlik, & Higgins, 2001; Krosnick, 1999). Surveys can be useful for providing descriptive statements about the sample, which can then be extrapolated to the entire population, as well as for the purpose of making explanatory statements (Babbie, 1990).

Given the thousands of accredited institutions in the United States and over 1.5 million faculty members employed at those institutions (National Center for Education Statistics, 2016b;

Snyder, de Brey, & Dillow, 2016), a survey that can be generalized is an effective research approach. Consequently, an existing survey provides useful information that can be more immediately analyzed. Many of the existing national surveys with a history of administration have already tested and ensured validity of the respective instruments, an important consideration when conducting survey research (Babbie, 1990).

Typically, surveys might require participants to respond to a series of prompts using standardized response options (Babbie, 1990), such as Likert-scales or the more generic Discrete Visual Analog Scale (DVAS) (Uebersax, 2006). Within response options for a survey, there may be scaled responses, which can be converted into meaningful numbers or wherein the difference between each response is the same (Suskie, 1996). Additional types of responses to survey questionnaires include ordinal responses, which would include some form of natural ordering, or nominal options, which denote categories (Gujarati, 2003). These scales provide a means through which to measure attitudes, personality traits, and behaviors as quantitative measures for the purpose of data analysis (Boone & Boone, 2012).

### **Data Sources and Access**

A study seeking to understand faculty members' use of learner-centered instructional approaches in the United States would benefit from the analysis of data obtained from a national dataset, to increase the ability to generalize to faculty at American institutions of higher education. There are currently several available datasets that collect this information from faculty members.

The Collaborative on Academic Careers in Higher Education (COACHE), currently housed at Harvard University, is another survey that collects information related to faculty work in postsecondary education, specifically related to faculty satisfaction and attitudes

(Collaborative on Academic Careers in Higher Education, 2017). The Faculty Survey of Student Engagement (FSSE), based at the Center for Postsecondary Research at Indiana University, collects information related to faculty teaching practices in addition to faculty demographics, educational goals for students, and perceptions about students. This survey is administered regularly and had over 130 institutions participate in its 2015 administration (Center for Postsecondary Research, 2016). Formerly, the National Survey of Postsecondary Faculty, administered by the National Center for Education Statistics, would have been a dataset that would merit consideration, as it collected information about faculty demographics and backgrounds, workloads, roles, salaries, benefits, and attitudes (National Center for Education Statistics, 2017). However, the last iteration of this study was in 2004.

The data used in this study comes from the Faculty Survey administered by the Higher Education Research Institute (HERI) housed at the University of California-Los Angeles (UCLA). HERI administers a number of surveys with the goal of providing institutional leadership with information to provide insight into constituents and allow for informed decision-making. Among these surveys are the CIRP Freshman Survey, the Your First Year of College survey, the College Senior Survey, the Diverse Learning Environments survey, and the Faculty Survey.

Administered since the 1980s, the Faculty Survey collects information that provides institutional leadership with a profile of institutional faculty, accompanied by benchmark data from similar institutions. The Faculty Survey is administered every three years and tends to have a relatively consistent participation of about 250-300 institutions (Higher Education Research Institute, 2017). The 2013 administration of the survey had faculty from 289 institutions participate (Eagan, Stolzenberg, Lozano, Aragon, Suchard, & Hurtado, 2014). This particular

survey also features the greatest number of questions related to faculty teaching practices, in addition to questions about faculty demographics, teaching activities, opinions, institutional perceptions, goals, and other questions related to higher education faculty experiences. Because of the high number of institutions that participate in this particular study, the data from this survey provide a wealth of information about American postsecondary faculty and their teaching practices, in addition to other information about individual faculty members and their roles on their respective campuses.

Additionally, it is possible to combine data from the HERI Faculty Survey with another dataset, such as the Integrated Postsecondary Education Data System (IPEDS) managed by the National Center for Education Statistics (NCES), to obtain additional information about specific institutions at which responding faculty members work. IPEDS collects data from more than 7,500 institutions in the United States that receive federal funding (National Center for Education Statistics, 2016c). The data collected from these institutions relate to institutional characteristics, student demographics, student educational attainment, institutional finances, staffing, and other pertinent information for educational researchers and policymakers.

From the IPEDS dataset, it is possible to obtain institutional data such as the amount of full-time instructional staff on campus, financial information related to the percentage of overall spending dedicated to instructional activities, and general institutional information related to size. Information from IPEDs is beneficial for this study as unique institutional identifiers can be connected with the data from the HERI Faculty Survey in order to provide a comprehensive view of the faculty experience.

## **HERI Data Access**

The Higher Education Research Institutes makes its post-secondary education survey data available to researchers who are interested in academic and scholarly pursuits. Researchers external to HERI are able to access datasets that are a minimum of three years old. To obtain access to these data, researchers must submit a complete research proposal and data access request to be evaluated by HERI staff members on a monthly basis. For student researchers, the completed request must be accompanied by a cover letter with a signature from the student's major professor, as well as with a signed letter of support. The data request document must include a list of all requested variables, and the variables in the request document must demonstrate a direct connection to the purpose of the research. Upon approval of the request, researchers must pay data access fees to obtain access to the dataset for one year.

Adhering to HERI's policies around data access, the research proposal and data access request documentation indicated a desire to utilize data from the 2013-2014 administration of the HERI Faculty Survey. The complete research proposal and data access request was submitted to the HERI review committee on October 11, 2016, and a follow-up email was sent on November 3, 2016. In the email accompanying the submitted research proposal and data access request, I inquired into the possibility of receiving identifiers that could be linked with IPEDS data for the purpose of the analysis described above. HERI approved the data request on November 30, 2016 and expressed the desire of the data request committee for me to refine the variables indicated in my initial request. Specifically, HERI requires each individual item from a given question block to be indicated in the request. Additionally, HERI approved the request to link HERI Faculty Survey Data with IPEDS data, and requested the inclusion of the specific IPEDS variables

needed for analysis. As a graduate student external UCLA, the fee for this dataset at \$750 (\$600 for the HERI Faculty Survey cohort data and \$150 to merge in the IPEDS variables).

The revised data access documents, including the request IPEDS variables, were submitted on January 12, 2017. Access to the custom dataset of HERI Faculty Survey items and matched IPEDS data was made available on February 19, 2017. The complete list of requested variables from the HERI Faculty Survey is available in Appendix A. The list of requested variables from IPEDS is available in Appendix B.

### **Data Analysis**

Upon receipt of data from the HERI Faculty Survey, the first step in analysis was to inspect the data. Close examination of the data revealed that some of the responses to the data were clearly illogical. For example, the variable representing the year of appointment at the faculty members' present academic institution (YRAPPOINT) had responses such as "190," "209," "1002," and "1044." It is likely that these illogical responses were a function of keystroke error while the individual faculty members were completing the Faculty Survey questionnaire. The choice was made to remove these observations from the dataset, as they appeared to be erroneous and would affect the ability to analyze those data and variables that were accurate. This was done for three variables (YRAPPOINT, YRTENURE, and YRBIRTH). This process removed approximately 50 observations from subsequent data analysis. The descriptive statistics for the resulting data are shown in Appendix C.

Following the initial examination, and subsequent cleaning, of the dataset, the next step was to analyze the variables that would be used to measure learner-centered instructional activities in the classroom. The Faculty Survey instrument includes several questions related to teaching methods, course assignments, course methods, and course technology. Each of these

questions include multiple response prompts, which align with individual variables in the data set. Utilizing the literature related to learner-centered instruction as a guide, 32 of these variables were requested as part of the custom HERI Faculty Survey dataset for use in this research. Because of the high number of variables that represent teaching activity in the data set, there was a need to perform data reduction in order to achieve a more manageable number for use in the statistical analysis.

### **Data Reduction**

One method through which to explore and reduce data is factor analysis. In general, factor analysis is an umbrella term for data reduction techniques that may help to highlight latent information among the data (Babbie, 1990; Matsunaga, 2010) and reduce the dimensionality of multivariate data (Bartholomew, 1980). Factor analysis is particularly helpful in situations when a scale measures more than one concept (Acock, 2014). Factor analysis assists researchers in understanding the makeup of latent variables and constructs that are represented by the observed variables in the data (Lance & Vanderberg, 2009). Broadly, factor analysis helps to summarize data for the purpose of interpreting and understanding relationships and patterns (Babbie, 1990; Yong & Pearce, 2013). Two broad methods include exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Exploratory factor analysis is useful when the researcher is unfamiliar with the constructs or factors represented by the observed variables. Confirmatory factor analysis utilizes *a priori* assumptions to test an existing theory about the underlying structure of the constructs (Matsunaga, 2010). Factor analysis may assist in subsequent model building by highlighting ways in which to cluster items together (Acock, 2014), which can inform how best to reduce or combine the variables from the survey in order to create a new dependent variable, in this case, one related to learner-centered instructional practice.

Exploratory factor analysis is typically the first in a series of steps to analyze data and build new scales or metrics (Yong & Pearce, 2013). Exploratory factor analysis enters a large group of variables into a model to see how they fit together, ultimately using the results to build a better model. This form of analysis allows researchers to reduce the number of variables being analyzed and focus on important factors, while removing extraneous information and noise. This allows the researchers to arrive at a more prudent understanding of the makeup and number of variables that account for the latent concept the observed variables measure (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Exploratory factor analysis assumes that variables group together by common unobserved influences (Cudeck, 2000). For the purpose of this dissertation research, exploratory factor analysis was used as a data reduction technique to decrease the number of variables related to faculty members' instructional practices in order to create a composite variable to serve as the dependent variable in subsequent statistical analysis.

The exploratory factor analyses for this study were performed using the Stata Data Analysis and Statistical software, version SE 14.2. The initial model included 32 variables from the HERI Faculty Survey Dataset that represented teaching activity. The results of the analysis retained 14 separate factors, but only one of those factors contained items with factor loadings greater than 0.40. Factor loadings indicate how much individual variables contribute to a factor (Yong & Pearce, 2013). Loadings provide insight into the strength of relationships, with larger factor loadings suggesting stronger relationships

The results also indicated that 18 of the variables aligned within a single factor. Those 18 variables nearly represented the 15 variables that closely align with the learner-centered instructional techniques described in the literature review. There were, however, some inconsistencies. Fabrigar, Wegener, MacCallum, and Strahan (1999) recommended that

researchers should define their domains of interest to avoid the inclusion of variables that might obscure the real factors present in the measured variables. As such, the decision was made to perform exploratory factor analysis again utilizing only those 15 variables that aligned with the learner-centered pedagogical practices that emerged from the review of literature in an effort to identify those variables that could be used to create a composite, omnibus dependent variables representing learner-centered instruction.

The results of the second factor analysis retained seven factors, but only one of those factors had factor loadings greater than 0.40. . These results suggested that 12 of the 15 variables hung together as a single factor. Reliability analysis was then performed and the alpha coefficient of the test scale was 0.8350, which is an acceptable Cronbach's alpha coefficient.

The results of the exploratory factor analysis yielded little support for multiple factors, but provided insight to allow an omnibus dependent variable to be created by combining the 12 variables identified through the analysis (CRSASSIGN01, CRSASSIGN08, CRSASSIGN09, CRSASSIGN10, METHOD01, METHOD02, METHOD05, METHOD07, METHOD09, METHOD20, METHOD21, and CRSASSESS03) and summing their individual responses to create a composite score. The new dependent variable would thus serve as a measure of faculty members' tendency to use learner-centered instructional practices in the classroom. The creation of the composite score is consistent with Likert's (1932) analysis of attitudinal and behavioral scales (Boone & Boone, 2012; Joshi, Kale, Chandel, & Pal, 2015). The resulting composite scale becomes an interval scale, which can be understood to have a meaningful distance between points, but lacks a relative zero (Boone & Boone, 2012). This composite scale can be used to measure a latent variable (Clason & Dormody, 1994), which in this case would be the faculty members' proclivity to utilize the aforementioned learner-centered instructional methods.

## **Data Imputation**

In most national datasets, there are missing observations that must be taken into consideration, and addressed, prior to statistical analysis. As shown in Appendix C, the unweighted data obtained from the HERI Faculty Survey are no exception. Missing data can occur for any number of reasons, including random omission or some characteristic of the collection technique and instrument that might cause the data to be missing (Myers, 2011). Missing data are problematic for several reasons (Roth, 1994). First, missing data reduce the explanatory power of statistical analysis. Second, missing data and observations can affect parameter estimates. Additionally, missing observations can have implications for, and skew, central tendency of the data. As such, it is essential for researchers to make decisions about how to handle missing data.

Unfortunately, while there are a number of possible ways to address missing data, no perfect method exists. A simplistic method of addressing missing observations is casewise deletion, also known as listwise deletion. Essentially, casewise deletion drops any cases in which there is a missing observation from the dataset. Although simplistic, this method of dealing with missing data can reduce the explanatory power of statistical analysis and bias subsequent conclusions by also removing or deleting the other data pertaining to those observations (King, Honaker, Joseph, & Scheve, 2001; Roth, 1994). This can be especially problematic in datasets containing a number of missing observations scattered across several variables, as this can greatly reduce the number of remaining data for analysis.

Other simplistic methods to address missing data include mean substitution, in which researchers replace the missing data value with the mean value of that specific variable (Roth, 1994). However, mean substitution is a faulty form of imputation because it skews the results

towards the mean for that specific variable. Conversely, there are a variety of imputation techniques that require extensive calculations, including multiple imputation, maximum likelihood procedures, expectation maximization procedures, and machine learning techniques and measures (Jerez, Molina, Garcia-Laencina, Ribells, Martin, & Franco 2010; Myers, 2011), among others.

A more robust means of addressing missing data is hot deck imputation, in which each missing observations is filled in by “donors” from other units in the dataset whose other variables in the observation are similar (Andridge & Little, 2010; Myers, 2011). This effectively allows for a more realistic, and likely, substitution of missing data. This form of addressing missing data is preferable to listwise deletion or mean substitution because it can significantly reduce the bias caused by these other methods of imputation. However, this form of imputation has limitations as well, as it requires similar observations from other units in order to fill in missing values.

Missing observations accounted for less than 16% of the total observations obtained from the HERI Faculty Survey dataset. Because there were adequate valid observations in the HERI Faculty Survey data, hot deck imputation was selected to fill in the missing observations in the dataset. The `–hotdeckvar–` command was used in the Stata statistical package to generate values for the missing observations. A duplicated set of variables was created and the two datasets were merged, with the imputed data filling in those observations that were missing from the original HERI Faculty Survey dataset. The descriptive statistics for the dataset following imputation are shown in Appendix D. Descriptive statistics for select variables are shown in Table 1.

Table 1

*Descriptive Statistics for Select Variables*

Variable	Observations	Mean	Std. Dev.	Min	Max
SEX	24,462	0.482994	0.4997209	0	1
WHITE/CAUC	24,462	0.9004987	0.29934	0	1
AFR AMER/BLACK	24,462	0.0206034	0.1420553	0	1
AMER IND/AK NAT	24,462	0.009525	0.0971321	0	1
ASIAN AMER/ASIAN	24,462	0.0382225	0.191737	0	1
NATIVE HI/PAC ISL	24,462	0.002371	0.0486364	0	1
MEX AMER/CHICANO	24,462	0.0099338	0.0991741	0	1
PUERTO RICAN	24,462	0.0039245	0.0625237	0	1
OTHER LATINO	24,462	0.0164337	0.1271387	0	1
OTHER RACE	24,462	0.0373641	0.1896562	0	1
TENURE	24,462	1.727618	0.9435678	1	4
AG/FOREST	24,462	0.0087483	0.093124	0	1
BIOSCI	24,462	0.0746055	0.2627591	0	1
BUSIN	24,462	0.0602158	0.2378912	0	1
EDUC	24,462	0.0639768	0.2447166	0	1
ENGIN	24,462	0.0219524	0.1465312	0	1
ENGL	24,462	0.0675742	0.2510189	0	1
HEALTH	24,462	0.073093	0.2602944	0	1
HIS/POLI SCI	24,462	0.0665931	0.249321	0	1
HUMAN	24,462	0.0818412	0.2741283	0	1
FINARTS	24,462	0.0973346	0.296419	0	1
MATH/STATS	24,462	0.0417791	0.2000881	0	1
PHYSSCI	24,462	0.0925517	0.2898091	0	1
SOCSCI	24,462	0.1363748	0.3431931	0	1
OTHERTECH	24,462	0.0259586	0.1590151	0	1
OTHNONTECH	24,462	0.0874009	0.2824274	0	1
HBCU	24,462	0.0066634	0.0813589	0	1

**Derived Variables**

To ease subsequent analysis, several IPEDS variables provided as part of the HERI Faculty Survey dataset were merged. Because IPEDS collects and reports financial data from public and private institutions separately, it was necessary to combine data related to total expenditures (ExpTotPub, ExpTotPrv), expenditure for instruction (ExpInstrctPub,

ExpInstrctPrv), tuition and fees (TUITANDFEESPub, TUITANDFEESPrv), and the value of endowment (EndowValuPub, EndowValuPrv). This resulted in the creation of four new variables representing the merged data (EXPENDTOT, EXPINSTRCT, TUITANDFEES, ENDOWVALUE).

Additionally, to aid in analysis, both by reducing the number of variables in the final models and creating more meaningful variables, three variables were derived from the IPEDS data. The percent of staff at the institution devoted to instruction (PCTINSTRCTSTAFF) was created by dividing the number of instructional staff by the total number of employees at the institution. The percent of full-time undergraduates (PCTUGFT) was created by dividing the number of full-time undergraduates (EFUGFT) by the sum of the number of full-time undergraduate students (EFUGFT) and the number of part-time undergraduate students (EFUGPT). Similarly, the percent of full-time graduate students (PCTGRADFT) was created by dividing the number of full-time graduate students (EFGRADFT) by the sum of the number of full-time graduate students (EFGRADFT) and the number of part-time graduate students (EFGRADPT). The percent of expenditure used for instruction (PCT EXP INSTRCT) was created by dividing the amount of expenditure used for instruction (EXPINSTRCT) by the total expenditure (EXPTOT).

### **Creation of the Composite Score**

Before creating the new omnibus dependent variable from the 12 variables identified during exploratory factor analysis, it was necessary to standardize the scales of these variables because the variables representing faculty members' instructional activities utilized two different response scales on the HERI Faculty Survey Instrument. Four of the variables (CRSASSIGN08, CRSASSIGN09, CRSASSIGN10, and CRSASSESS03) utilized a 3-point response scale to

assess how often faculty members utilized a specific pedagogical practice within the past year. The survey response options are “Not at All,” “Occasionally,” and “Frequently.” However, the other seven variables (METHOD01, METHOD02, METHOD05, METHOD07, METHOD09, METHOD20, and METHOD21) utilized a 4-point response to assess in how many courses specific pedagogical practices were employed in instruction. The survey response options are “None,” “Some,” “Most,” and “All.” To address this discrepancy, the seven variables with the 4-point scale were standardized to a 3-point scale, combining the “Most” and “All” responses options to correspond with the “Frequently” response option for those variables with the 3-point scale.

Subsequently, a new variable (LCISCALE) was generated in Stata. The scale represents the sum of the 12 variables identified during exploratory factor analysis (CRSASSIGN01, CRSASSIGN08, CRSASSIGN09, CRSASSIGN10, METHOD01, METHOD02, METHOD05, METHOD07, METHOD09, METHOD20, METHOD21, and CRSASSESS03). While not inclusive of all pedagogical practices that might fall into this group, this scale provides a reasonable representation of, and proxy for, the use of learner-centered instructional practices by postsecondary faculty in the United States.

The new variable consists of a 36-point scale representing American faculty members’ proclivity for using learner-centered instructional practices in classroom pedagogical practices, as reported in responses to questions posed in the HERI Faculty Survey. The creation of this new omnibus variable allowed for further descriptive analysis and statistical regression analysis of the HERI Faculty Survey dataset in order to answer the research questions guiding the study in an attempt to understand the relationship of individual demographic and institutional characteristics

that influence faculty members' use of learner-centered instructional practices in the college classroom. The descriptive statistics for the LCISCALE variable appear in Table 2.

Table 2  
*LCISCALE Descriptive Statistics*

LCISCALE	Freq.	Percent	Cum.
12	39	0.16	0.16
13	39	0.16	0.32
14	101	0.41	0.73
15	137	0.56	1.29
16	224	0.92	2.21
17	274	1.12	3.33
18	407	1.66	4.99
19	418	1.71	6.70
20	605	2.47	9.17
21	620	2.53	11.71
22	826	3.38	15.08
23	1,003	4.10	19.18
24	1,179	4.82	24.00
25	1,344	5.49	29.50
26	1,459	5.96	35.46
27	1,608	6.57	42.04
28	1,750	7.15	49.19
29	1,791	7.32	56.51
30	1,879	7.68	64.19
31	1,907	7.80	71.99
32	1,740	7.11	79.10
33	1,634	6.68	85.78
34	1,492	6.10	91.88
35	1,145	4.68	96.56
36	841	3.44	100.00
Total	24,462	100	

### **Descriptive Analysis**

After cleaning the data, engaging in exploratory factor analysis, and performing imputation for missing observations, the initial form of analysis used to address the research questions utilized descriptive statistics. In addition to summarizing the data (Pyrcecz, 2006),

descriptive statistics are helpful in understanding the distribution of the data, such as highlighting the mean, median, and mode (Acock, 2014), which ultimately provide insight into the complexity of the gathered data. Much like the information contained in the HERI monographs, descriptive analyses can highlight useful information about specific variables, especially those of interest to the research questions.

While not necessarily offering any explanatory power or the ability to generalize beyond the observed data, descriptive statistics can provide insight into the frequency of specific phenomena as they relate to variables of interest. Among the descriptive statistical analysis utilized was correlation analysis, including Pearson's correlation coefficient, or Pearson's  $r$  (Agresti, 1990; Berenson, Levine, & Krehbiel, 2008; Gujarati, 2003), to explore the relationship among the variables. The coefficient of correlations "is a measure of the degree of association between two variables" (Gujarati, 2003, p. 85), including strength and direction. Not only is this information interesting in and of itself, but it also has implications for model building and serves to highlight specific variables that are interrelated and consequently need to be omitted from subsequent models. From this analysis, the resulting coefficients yielded relatively low linear correlation among the independent variables; these coefficients were not close enough to 1 or -1 to suggest a strong linear relationship.

Additionally, crosstabulation was utilized to explore the relationship between specific variables. This form of analysis, which results in two-way tables, allowed the ability to compare how different groups responded to specific questions on the Faculty Survey. Summarizing the information from two variables at once allows the researcher to explore the association between these two variables and to visualize the resulting joint frequency distribution (Babbie, 1990).

This form of analysis was utilized to explore frequencies of responses between variables of interest and the omnibus dependent variable.

### **Regression Analysis Methodology**

The analysis of data obtained from the HERI Faculty Survey included several models to address the specific research questions. The first phase of regression analysis examined the newly created dependent variable (LCISCALE). Regression analysis was an appropriate method to employ for this type of investigation, as regression analysis provides insight into the relative importance of some responses relative to the dependent variable (Suskie, 1996). Regression analysis estimates the linear relationship between the independent variables and the dependent variables, which can be dichotomous, continuous, or discrete (Toutkoushian, 2005). A strength of regression analysis is that it allows for the estimation of coefficients that can provide insight into how changes in the independent variables cause changes in the dependent variable.

### **Multiple Linear Regression**

Following the descriptive statistical analysis, the variables were used to generate multiple regression models. Linear regression analysis, in which  $Y$  is expected to be a linear function of  $X_i$  (Gujarati, 2003), was selected because of the ability to use one variable to predict another. Using coefficients of an assumed nonrandom independent variable in the regression model (Dekking, Kraaikamp, Lopuhaa, & Meester, 2005), and holding all other independent variables constant, a prediction can be made regarding the dependent variable. In this case, the dependent variable represents the degree in which American postsecondary faculty members reported utilizing learner-centered instructional methods, utilizing the newly created LCISCALE. Although the LCISCALE was constructed from ordinal variables, , because it contains 36 points it is

appropriate to treat it as a continuous variable and use linear models (Knapp, 1990; Labovitz, 1967; Long & Freese, 2006).

Multiple linear regression allows multiple independent variables to be included in a model to predict the dependent variable. The benefit of multiple regression is that the effect of each independent variable can be examined separately from the other independent variables in the model. Essentially, each independent variable can be investigated while holding each of the other independent variables constant (Gujarati, 2003).

The multiple linear regression analysis was performed utilizing nested models, or those models in which one model represents a subset of another model (Gujarati, 2003). In this process of analysis, all of the models have identical variables and one or more of the models have additional variables. This iterative process allows for the inclusion of additional variables, while comparing the adjusted R-squared values in order to determine changes in the explanatory power of each subsequent model. Ideally, each iteration of the models will have increasing explanatory power.

The following models serve as an example:

$$\text{Model 1: LCISCALE} = \beta_0 + \textit{Individual Demographic Characteristics} + \varepsilon_i$$

$$\text{Model 2: LCISCALE} = \beta_0 + \textit{Individual Demographic Characteristics} + \textit{Work Experience Characteristics} + \varepsilon_i$$

$$\text{Model 3: LCISCALE} = \beta_0 + \textit{Individual Demographic Characteristics} + \textit{Work Experience Characteristics} + \textit{Institutional Characteristics} + \varepsilon_i$$

The HERI Faculty Survey variables representing race, rank, publication, hours per week spent on research and preparing to teach, and geographic region are categorical. As such, for inclusion in the multiple regression models, these were recoded as dummy variables. A dummy

variable represents a specific characteristic as a binary, either yes or no. For example, nine variables represent race/ethnicity: White/Caucasian, African American/Black, American Indian/Alaska Native, Asian/Asian American, Native Hawaiian/Pacific Islander, Mexican American/Chicano, Puerto Rican, Other Latino, and Other Race. Each of these races was recoded to have an associated dummy variable (1 if member of the respective race; 0 otherwise). The same was done for faculty rank and geographic region. In multiple regression analysis, the number of dummy variables utilized in the model needs to be one less than the number of categories represented by the dummy variables. As such, White/Caucasian, Professor, average work-related stress, no publication, zero hours per week spent on research, zero hours per week preparing to teach, geographic location in the East served as the reference categories, for the race, rank, publication, hours per week spent on research and preparing to teach, and geographic region dummy variables respectively.

The complete model including individual demographic characteristics, work experience characteristics, and institutional characteristics is represented by the following equation.

$$\begin{aligned}
 y = & \beta_0 + \beta_1(AGE) + \beta_2(SEX) + \beta_3(AFR\ AMER/BLACK) + \beta_4(AMER\ IND/AK\ NAT) + \beta_5(ASIAN \\
 & AMER/ASIAN) + \beta_6(NATIVE\ HI/PAC\ ISL) + \beta_7(MEX\ AMER/CHICANO) + \\
 & \beta_8(PUERTO\ RICAN) + \beta_9(OTHER\ LATINO) + \beta_{10}(OTHER\ RACE) + \\
 & \beta_{11}(YRAPPOINT) + \beta_{12}(ASSOC\ PROF) + \beta_{13}(AST\ PROF) + \beta_{14}(LECTURER) + \\
 & \beta_{15}(INSTRUCTOR) + \beta_{16}(ADJUNCT) + \beta_{17}(TENURED) + \beta_{18}(DOCTORATE) + \\
 & \beta_{19}(FULLSTAT) + \beta_{20}(BIOSCI) + \beta_{21}(BUSIN) + \beta_{22}(EDUC) + \beta_{23}(ENGIN) + \\
 & \beta_{24}(ENGL) + \beta_{25}(HEALTH) + \beta_{26}(HIST/POLI\ SCI) + \beta_{27}(HUMAN) + \beta_{28}(FINARTS) \\
 & + \beta_{29}(MATH/STATS) + \beta_{30}(PHYSSCI) + \beta_{31}(SOCSCI) + \beta_{32}(OTHERTECH) + \\
 & \beta_{33}(OTHNONTECH) + \beta_{34}(STEM) + \beta_{35}(FT\ UNDERGRD\ FAC) + \beta_{36}(PRIN\ ACT:
 \end{aligned}$$

$$\begin{aligned}
& TEACH) + \beta_{37}(HPWPREP1TO4) + \beta_{38}(HPWPREP5TO8) + \beta_{39}(HPWPREP9TO12) \\
& + \beta_{40}(HPWPREP13TO16) + \beta_{41}(HPWPREP17TO20) + \beta_{42}(HPWPREPOVER21) + \\
& \beta_{43}(HPWRES1TO4) + \beta_{44}(HPWRES5TO8) + \beta_{45}(HPWRES9TO12) + \\
& \beta_{46}(HPWRES13TO16) + \beta_{47}(HPWRES17TO20) + \beta_{48}(HPWRESOVER21) + \\
& \beta_{49}(PUB1TO2) + \beta_{50}(PUB3TO4) + \beta_{51}(PUB5TO10) + \beta_{52}(PUB11TO20) + \\
& \beta_{53}(PUB21TO50) + \beta_{54}(PUBOVER51) + \beta_{55}(DVLP: WRKSHPS) + \beta_{56}(DVLP: NEW \\
& CRS) + \beta_{57}(DVLP: TECH) + \beta_{58}(TEACH AWARD) + \beta_{59}(ACT: PEDAGOGY) + \\
& \beta_{60}(OPN: STUD SUCCESS) + \beta_{61}(OPN: LEARN BEST) + \beta_{62}(OPN: PREP \\
& STUDNTS) + \beta_{63}(OPN: TCH VALUE) + \beta_{64}(STRESS: LOW) + \beta_{65}(STRESS: HIGH) \\
& + \beta_{66}(MIDWEST) + \beta_{67}(SOUTH) + \beta_{68}(WEST) + \beta_{69}(HBCU) + \beta_{70}(CONTROL) + \\
& \beta_{71}(RELIGAFIL) + \beta_{72}(PCT INSRCT STAFF) + \beta_{73}(PCT FT: UG) + \beta_{74}(PCT FT: \\
& GRAD) + \beta_{75}(ENRTOT) + \beta_{76}(TUITION/FEES) + \beta_{77}(TOTL EXPEND) + \beta_{78}(PCT \\
& EXP INSTRCT) + e
\end{aligned}$$

The results of multiple regression are useful for providing insight into the manner in which the independent variables exert their influence on the dependent variable. The correlation coefficient indicates the strength and direction of the linear association between the dependent variable and the independent variables in the equation (Illowsky & Dean, 2016). Data rarely fit exactly into a straight line; as such, researchers need to understand the extent to which the observed variables have a linear association. To this end,  $R^2$ , the coefficient of determination, indicates how well the regression line fits the observed data (Gujarati, 2003).  $R^2$  specifies the amount of variance explained by the variables utilized in the model (Babbie, 1990). The closer the  $R^2$  value is to 1, the better the model fits the regression line and indicates the amount of variance accounted for by variables included in the model.

## CHAPTER 4

### RESULTS

In this chapter, I present findings from the statistical analysis of the data obtained from the Higher Education Research Institute (HERI) Faculty Survey to address the research questions guiding this study. First, I present the results of the descriptive statistical analysis. Next, I present the results of the analysis of the omnibus dependent variable (LCISCALE), utilizing both multiple regression analysis.

#### **Descriptive Statistic Results**

As discussed in Chapter 3, initial analysis of the data from the HERI Faculty Survey was conducted utilizing descriptive statistics, namely cross tabulation. While not allowing for any explanatory or predictive power, this method of analysis allowed for a side-by-side comparison of how respondents answered survey questions.

Crosstabulation was performed for the LCISCALE and sex variables. The results appear in Appendix E (each column of the table represents the frequency, row percentage, and column percentage for each value). Although slightly more males responded to the Faculty Survey, females demonstrated higher rates of responses on the LCISCALE variables, particularly at 29 points and above. The highest number of responses for both sexes occurred between 24 and 34 points on the LCISCALE. A plot of density by percentage appears in Figure 1.

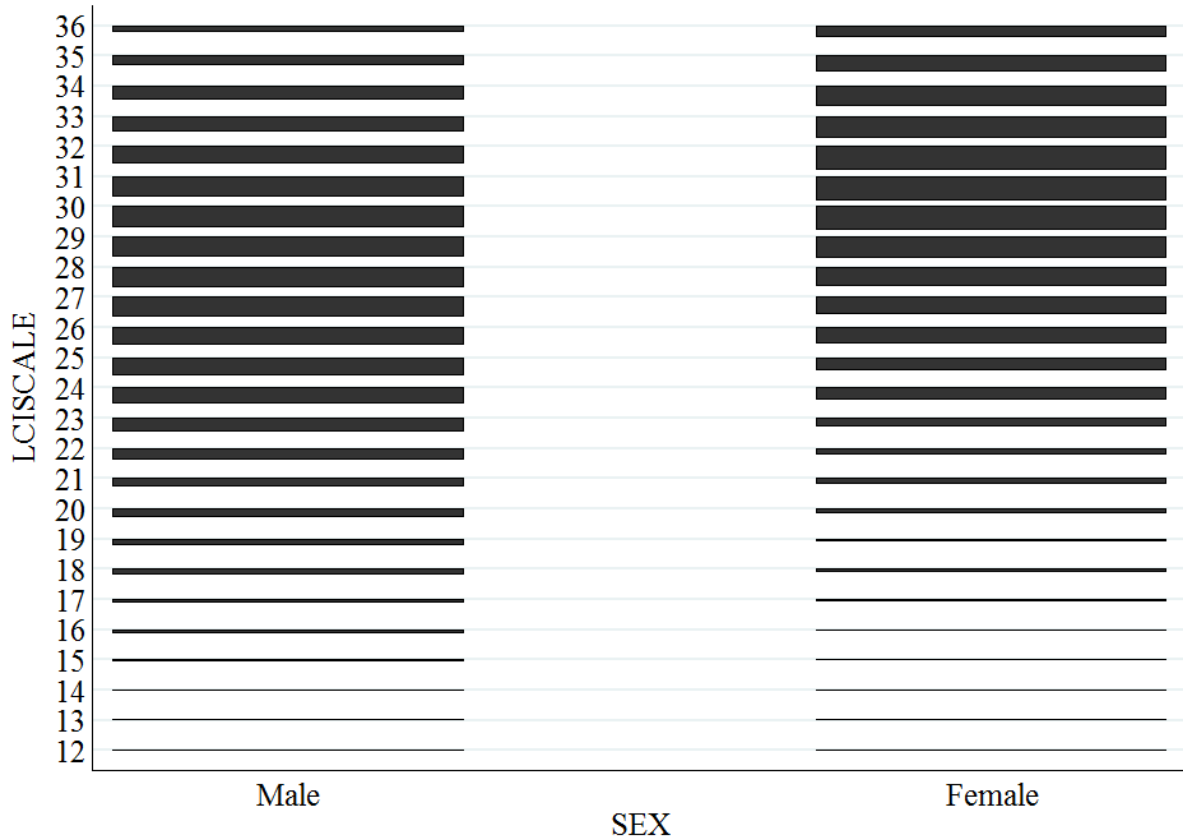


Figure 1: LCISCALE and Sex, use by percentage

Crosstabulation was performed for the LCISCALE and faculty rank variables. The results appear in Appendix F (each column of the table represents the frequency, row percentage, and column percentage for each value). Looking at LCISCALE and academic rank indicated assistant professors tended to report higher use of the pedagogies than lecturers and instructors combined. Associate professors consistently reported greater use of the LCI practices between 27 and 35 points. A plot of density by percentage appears in Figure 2.

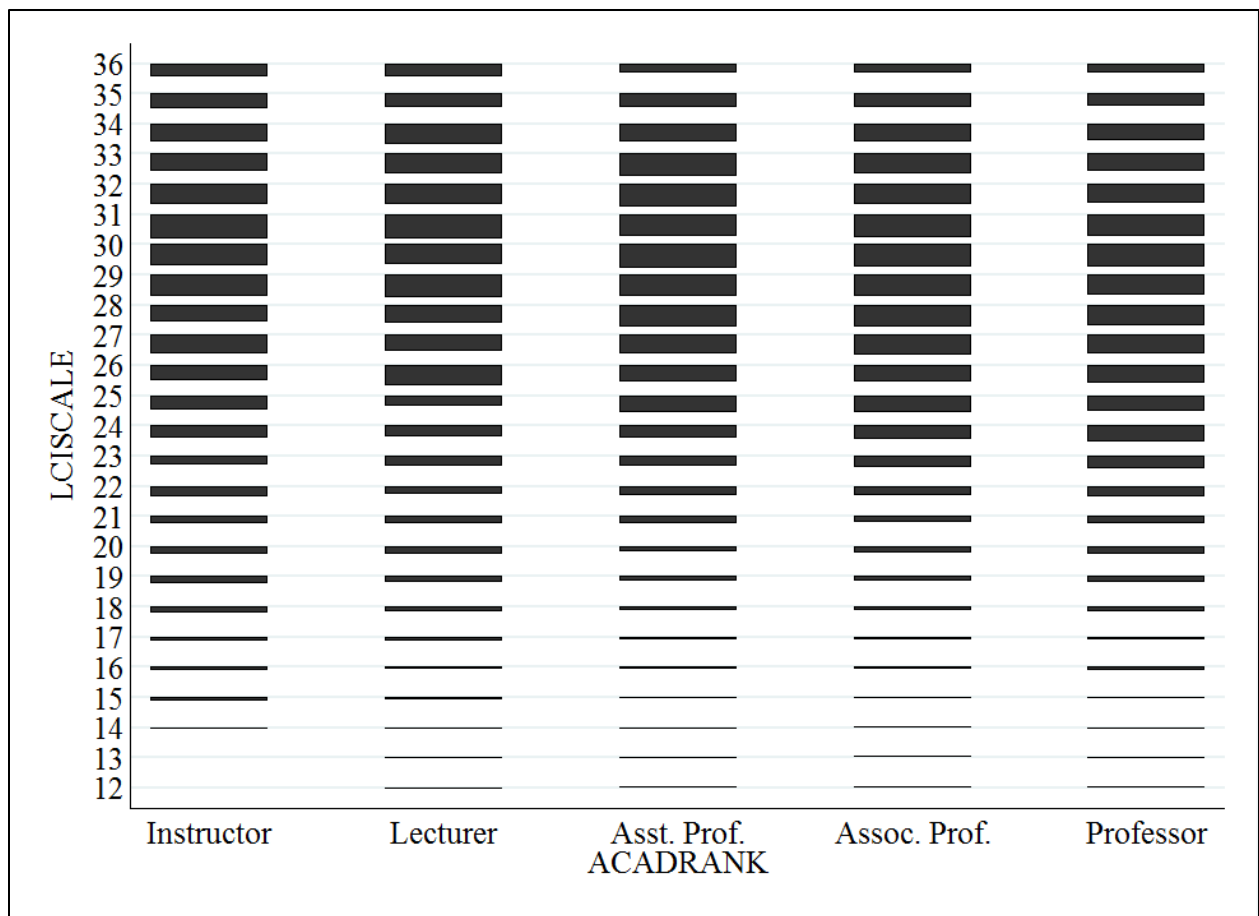


Figure 2: LCISCALE and Academic Rank, use by percentage

Crosstabulation was performed for the LCISCALE and tenure status variables. The results appear in Appendix G (each column of the table represents the frequency, row percentage, and column percentage for each value). Comparing LCISCALE with tenure status indicated tenured and tenure-track faculty members' highest implementation was between 28 and 34 points on the LCISCALE. For faculty at institutions without tenure, the highest implementation was between 27 and 33 points. A plot of density by percentage appears in Figure 3.

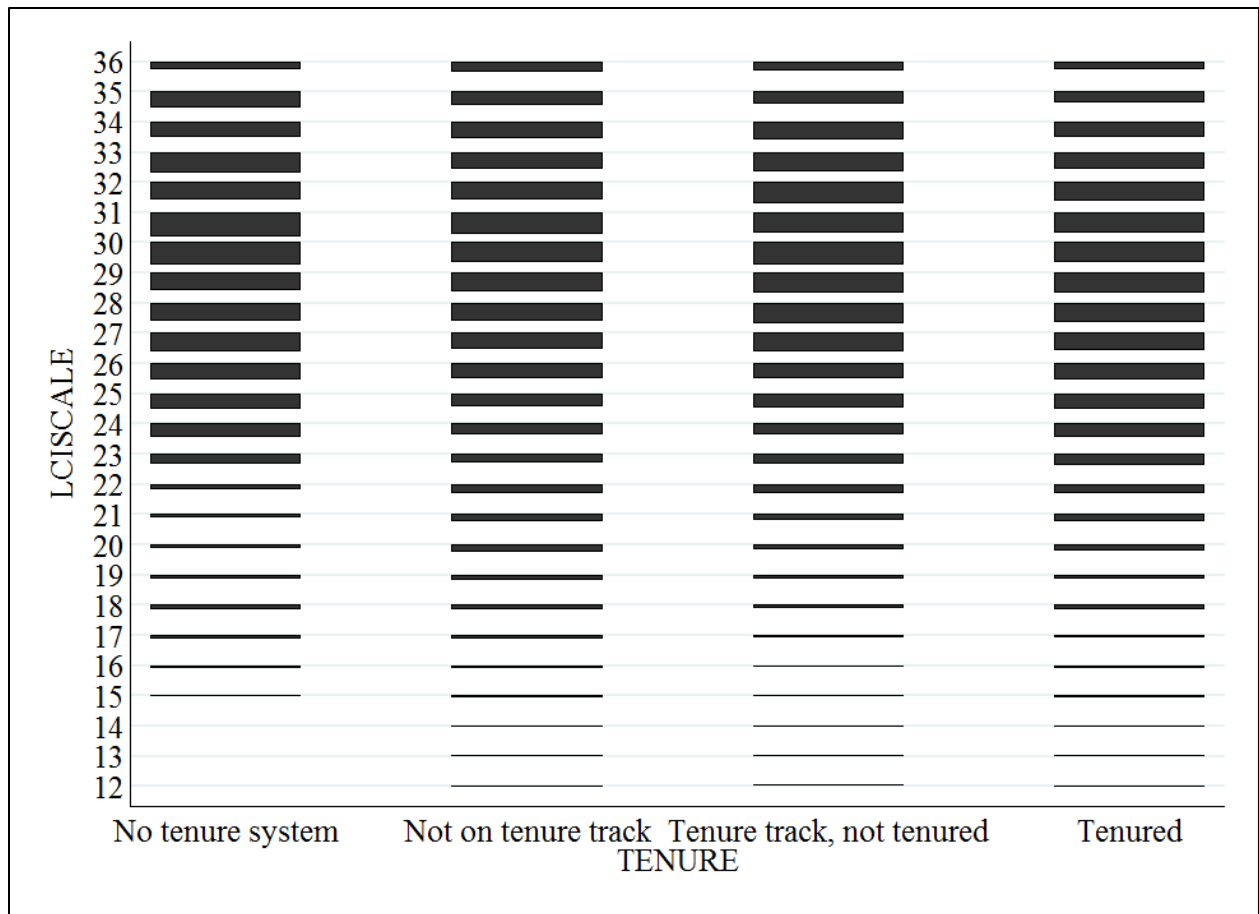


Figure 3: LCISCALE and tenure status, use by percentage

Crosstabulation was performed for the LCISCALE and highest degree earned variables. The results appear in Appendix H (each column of the table represents the frequency, row percentage, and column percentage for each value). Faculty members without a degree, or who indicated an alternate form of credential, indicated use of LCI practices between 27 and 32 points on the LCI scale, compared to faculty members whose highest degree earned was a bachelor’s degree, who reported use between 28 and 32 points. Alternatively, faculty whose highest earned degree was a master’s reported the most frequent use between 30 and 34 points on the LCI scale, while faculty members with doctoral or professional degrees indicated the most frequent use between 28 and 31 points. A plot of density by percentage appears in Figure 4.

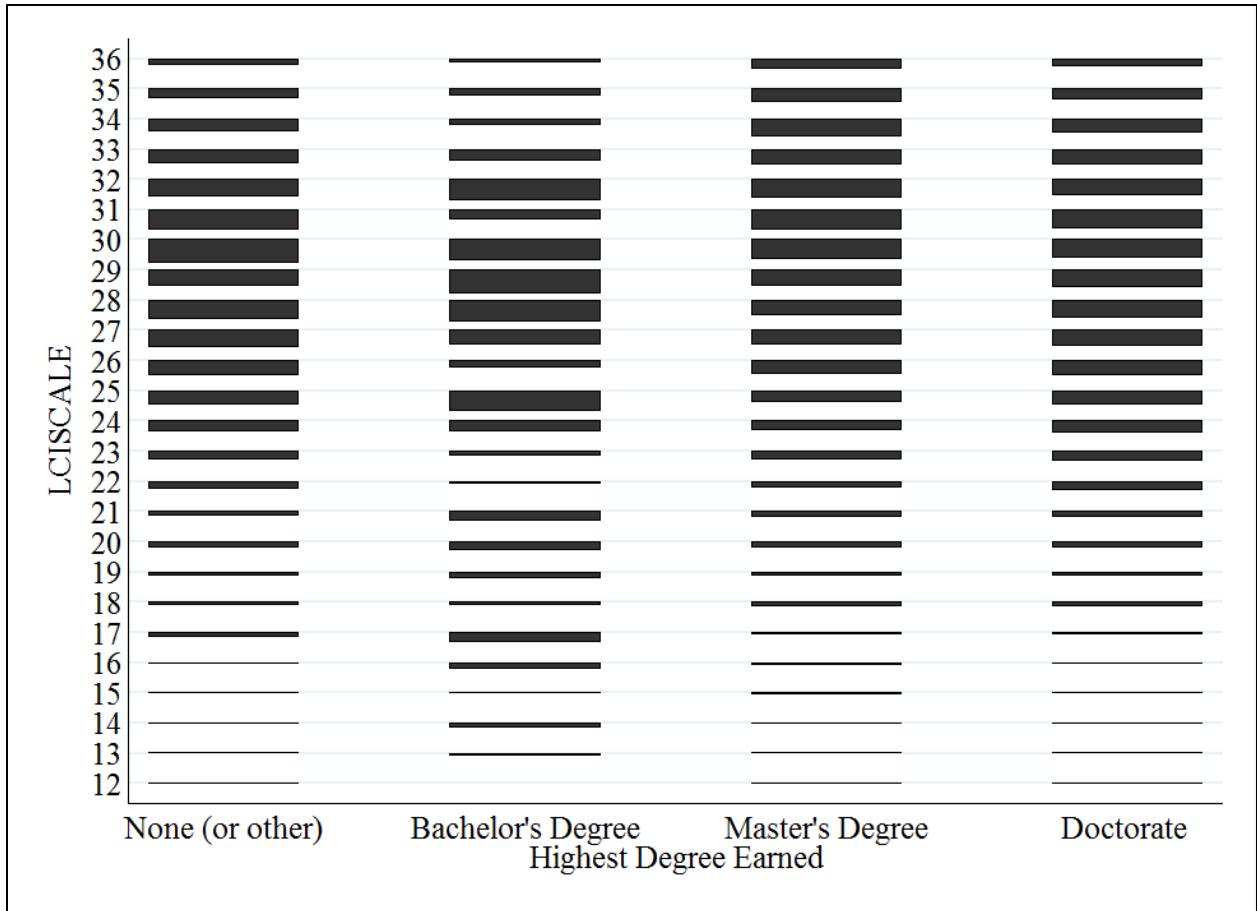


Figure 4: LCISCALE and highest degree earned, use by percentage

Crosstabulation was performed for the LCISCALE and full-time/part-time status variables. The results appear in Appendix I (each column of the table represents the frequency, row percentage, and column percentage for each value). Those faculty members who reported working part-time at their institution had the highest rate of implementation of LCI practices between 28 and 32 points on the LCI scale. A plot of density by percentage appears in Figure 5.

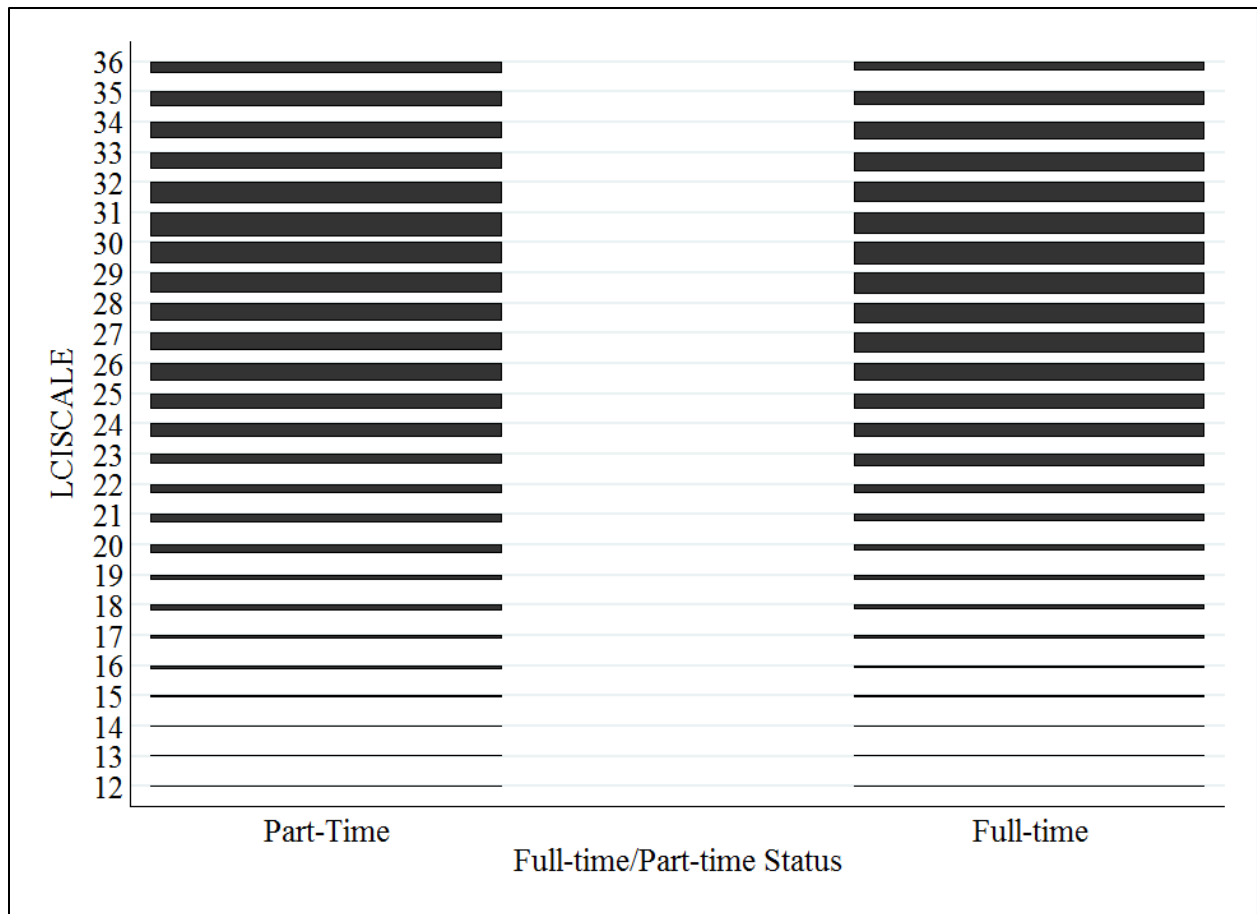


Figure 5: LCISCALE and full-time/part-time status, use by percentage

Crosstabulation was performed for the LCISCALE and aggregated academic department variables. The results appear in Appendix F. Those faculty members who teach in Agriculture or Forestry departments had no scores of 12 or 13 on the LCI scale, indicating that there were none who never used any of the 12 learner-centered instructional methods comprising the scale. This was also true for faculty members in Education and English departments. Faculty members in Agriculture and Forestry reported the highest rate of implementation between 24 and 31 points on the scale. Faculty in Biological Sciences reported the highest rate of use between 26 and 31 points, while Business faculty reported the most use of LCI practices between 28 and 32 points. Faculty members in Education departments reported the highest rate of use between 30 and 35 points on the scale, while Engineering faculty reported use between 25 and 31 points. English

faculty reported frequent use between 31 and 36 points on the scale, compared to faculty in Health-related department who reported the most frequent use between 27 and 32 points.

History or Political Science faculty reported the most use between 25 and 30 points, while Humanities faculty members reported the greatest use between 28 and 31 points. Faculty members in Fine Arts departments reported the greatest use between 29 and 33 points, compared to departments of Mathematics or Statistics, which reported the most use between 24 and 28 points. Faculty in the Physical Sciences and Social Sciences both indicated the most frequent use between 27 and 31 points on the scale. Other technical-related departments reported high use between 27 and 30 points, while other non-technical departments indicated the most use of LCI methods between 31 and 34 points. A plot of density by percentage appears in Figure 6.

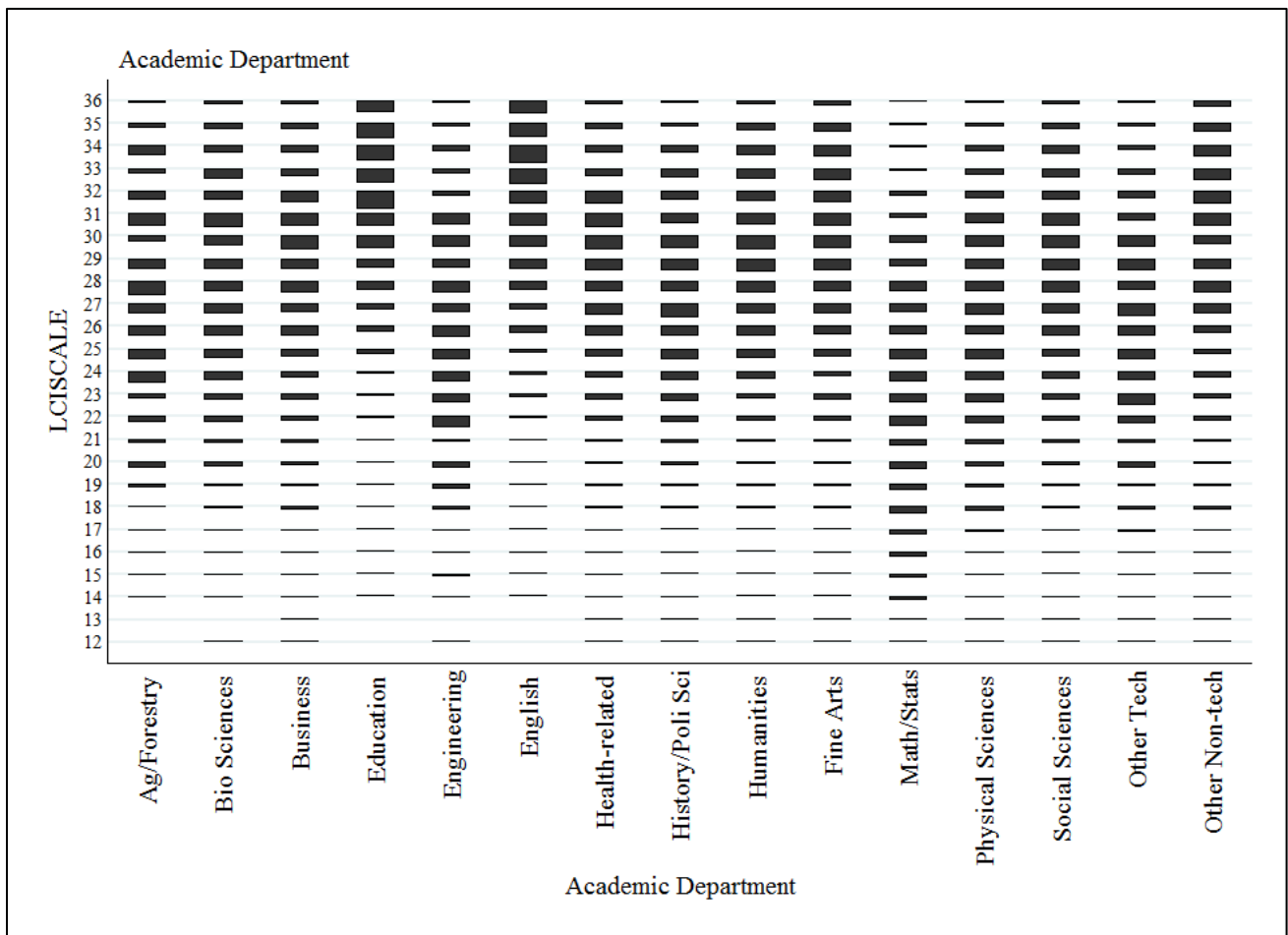


Figure 6: LCISCALE and aggregated academic department, use by percentage

Crosstabulation was performed for the LCISCALE and professional development variables. The results appear in Appendix K (each column of the table represents the frequency, row percentage, and column percentage for each value). While fewer faculty members reported engaging in professional development that included paid workshops outside the institution focused on teaching, those that had engaged in those workshops reported using LCI pedagogical practices at higher rates than their colleagues who did not, particularly between 30 and 36 points. A plot of density by percentage appears in Figure 7.

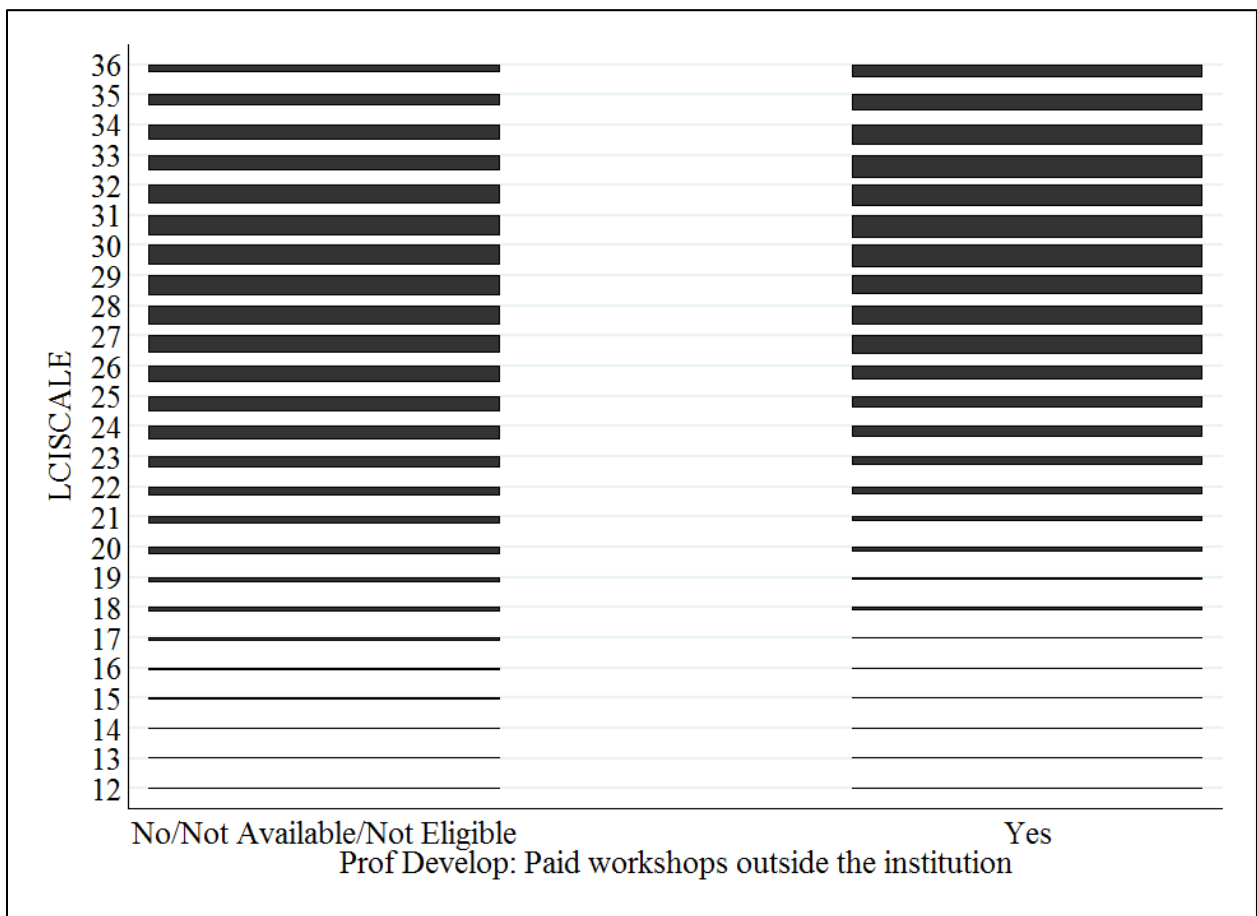


Figure 7: LCISCALE and professional development, use by percentage

Crosstabulation was performed for the LCISCALE and teaching award variables. The results appear in Appendix L (each column of the table represents the frequency, row percentage, and column percentage for each value). Faculty members who received awards for outstanding

teaching tended to report using LCI practices at higher rates than their colleagues who did not, particularly at 32 points and above. A plot of density by percentage appears in Figure 8.

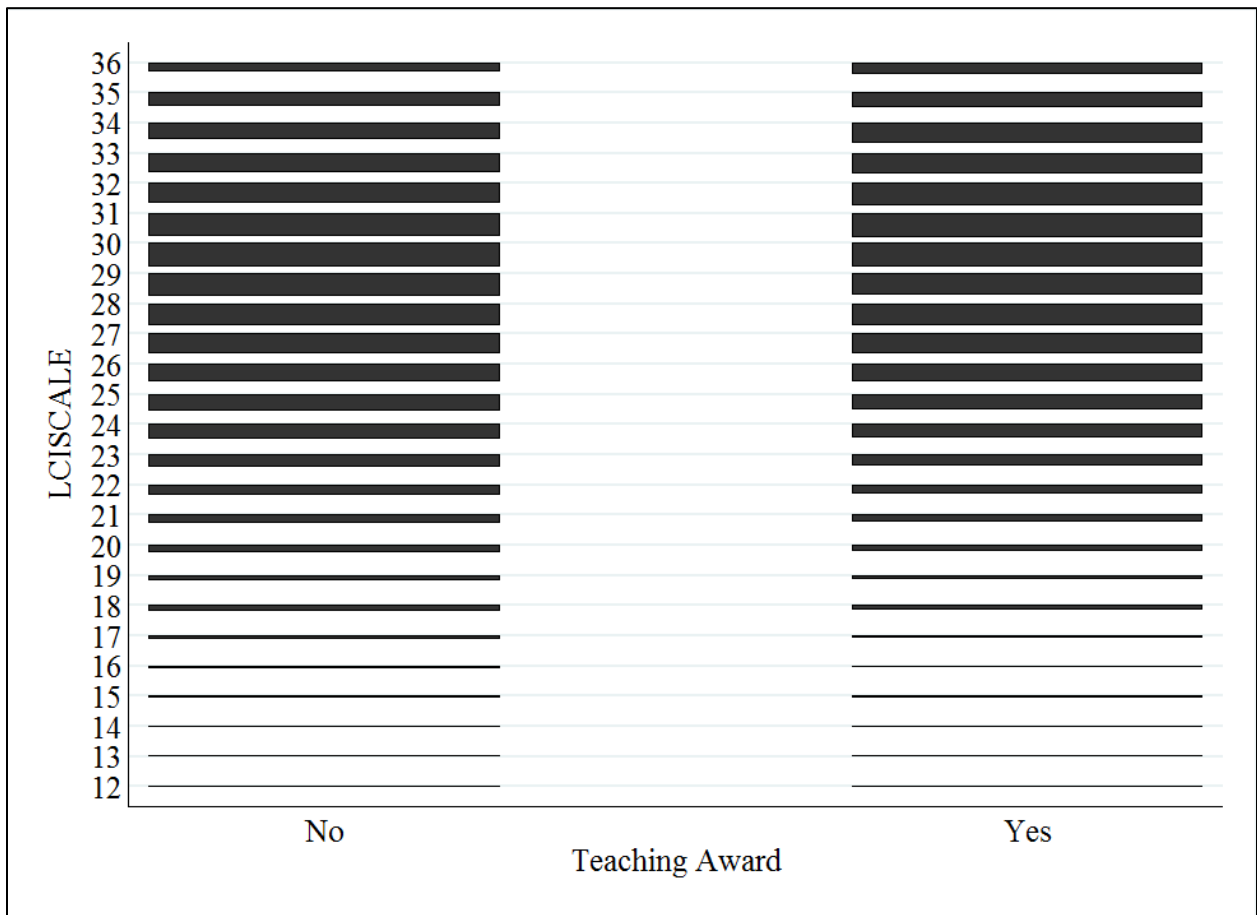


Figure 8: LCISCALE and teaching award, use by percentage

Crosstabulation was performed for the LCISCALE and institutional control variables. The results appear in Appendix M (each column of the table represents the frequency, row percentage, and column percentage for each value). Faculty employed at private institutions reported higher use of LCI practices at 29 points and above, while faculty members at public institutions reported use between 12 and 25 points, indicating rare or infrequent use. A plot of density by percentage appears in Figure 9.

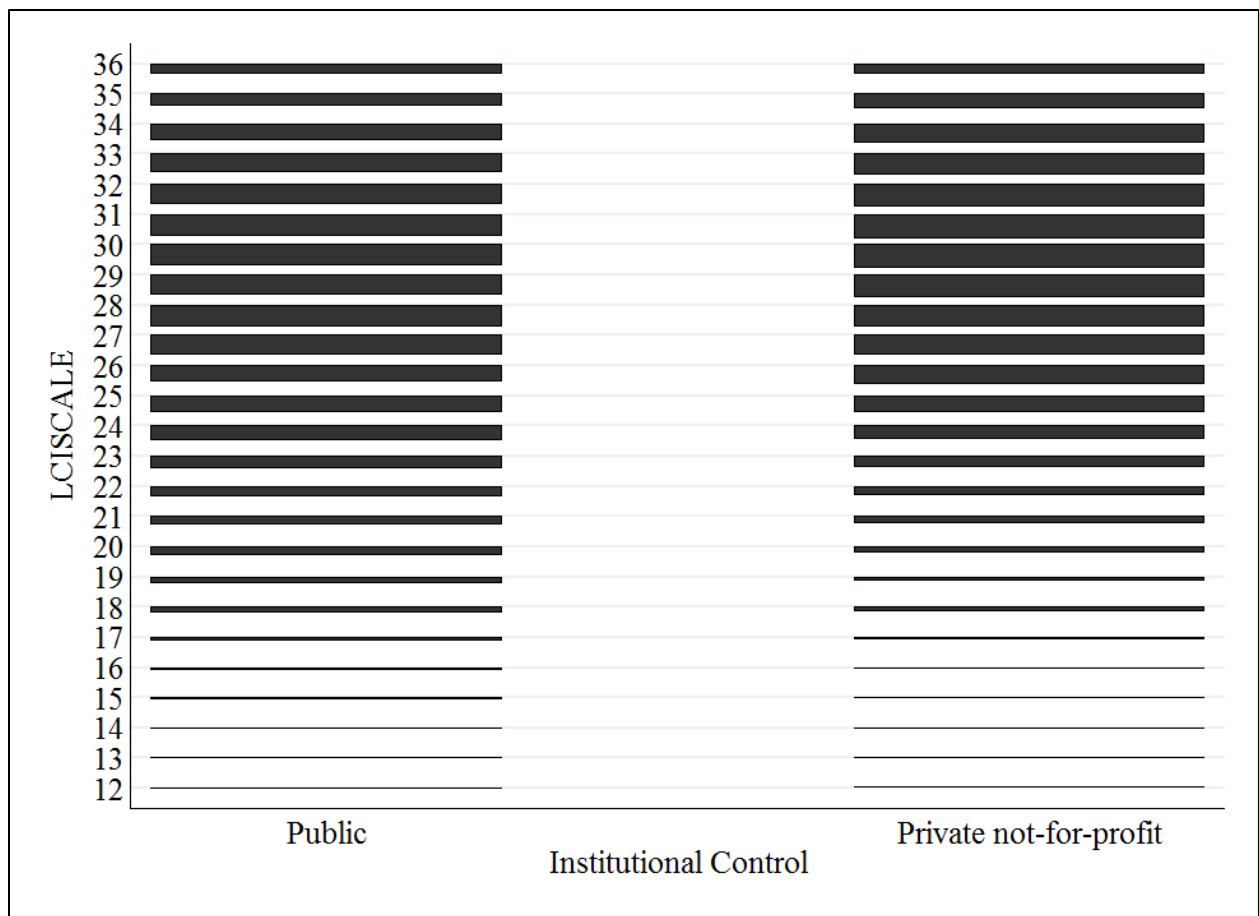


Figure 9: LCISCALE and institutional control, use by percentage

Crosstabulation was performed for the LCISCALE and variable representing faculty members who teach at HBCU institutions. The results appear in Appendix N (each column of the table represents the frequency, row percentage, and column percentage for each value). Faculty members employed at HBCUs reported higher rates of use at 29, 30, and 31 points on the LCISCALE than their non-HBCU peers. A plot of density by percentage appears in Figure 10.

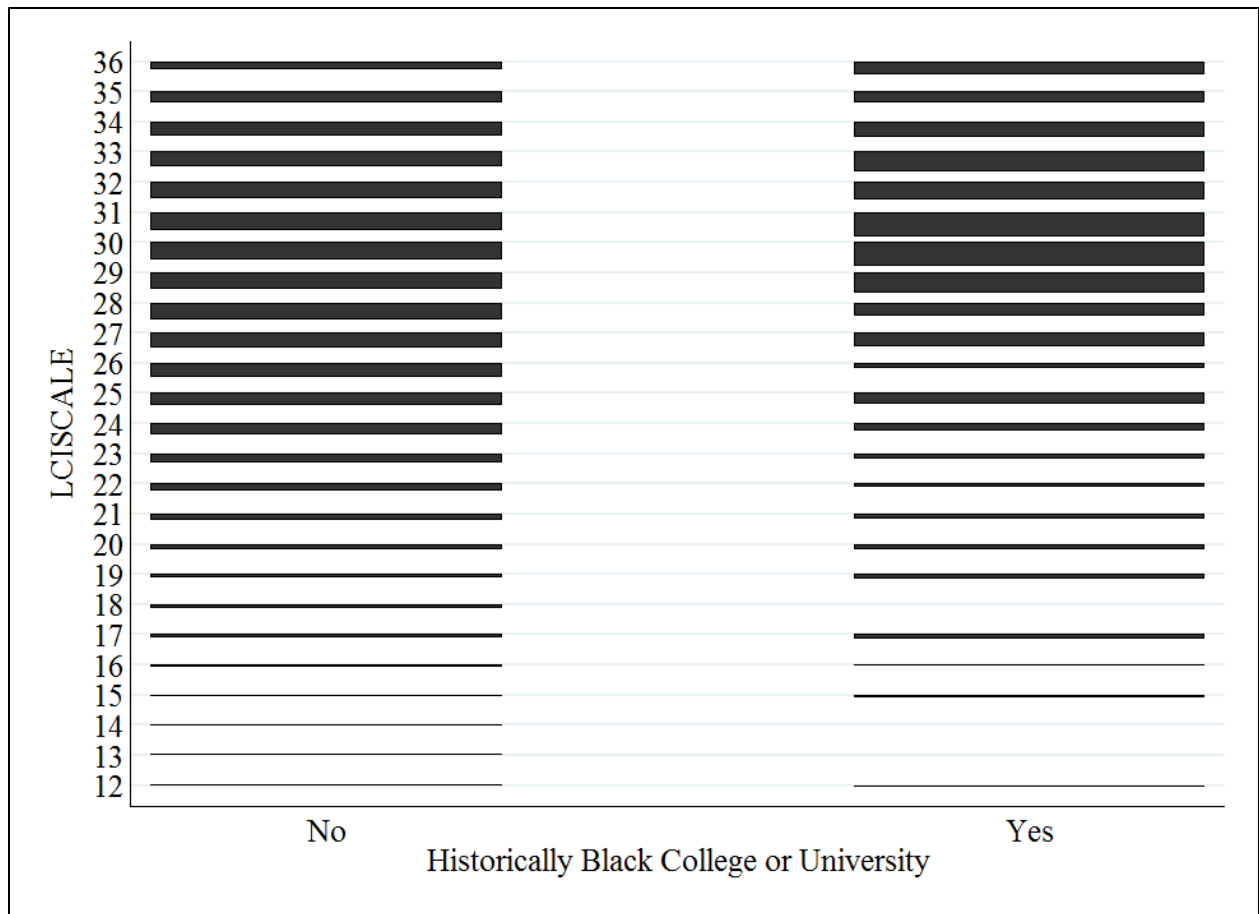


Figure 10: LCISCALE and HBCU, use by percentage

Crosstabulation was performed for the LCISCALE and HERI geographic region variables. The results appear in Appendix O (each column of the table represents the frequency, row percentage, and column percentage for each value). Based on HERI regions, the implementation rate of LCI pedagogies was relatively consistent at 19 points and above on the composite scale. A plot of density by percentage appears in Figure 11.

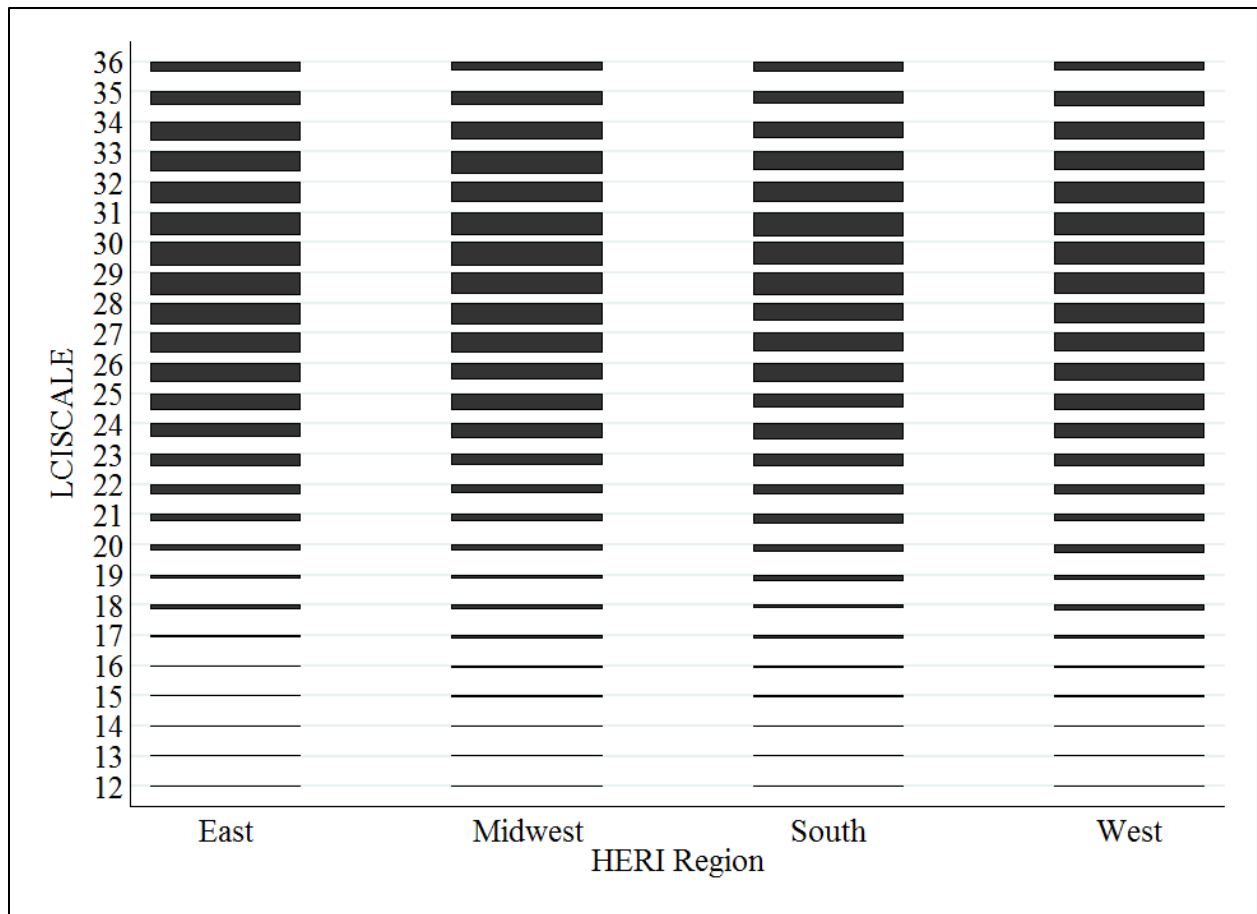


Figure 11: LCISCALE and HERI region, use by percentage

### Regression Analysis Results

As discussed in Chapter 3, the data from the HERI Faculty Survey were analyzed via restricted and unrestricted multiple linear regression models.

#### Multiple Linear Regression Analysis

For the multiple linear regression analysis, the first model included faculty members' individual demographic characteristics. The next model included work experience characteristics, while the final, unrestricted model added institutional characteristics, including variables obtained from IPEDS. These restricted and unrestricted models were utilized in an effort to explain the interaction between the independent variables and their respective effect on the dependent variable.

The results of the first restricted multiple linear regression model focused on individual demographic characteristics are show in Appendix P. The results of the second restricted multiple linear regression model focused on individual demographic characteristics and work experience characteristics are show in Appendix Q. The results of the unrestricted multiple linear regression model, which included institutional characteristics, are shown in Table 3. In each of these tables, the column labeled “Coef.” Represents the coefficients or parameter estimates, while the column labeled “ $\beta$ ” represents the standardized beta coefficients.

Table 3

*Faculty Use of LCI Methods, Unrestricted Multiple Linear Regression Model (Model 3)*

	<b>Coef.</b>	<b>Std. Err.</b>	<b>t value</b>	<b><math>\beta</math></b>	
LCISCALE					
AGE	0.017	0.003	5.380	0.038	***
SEX (FEMALE)	0.918	0.063	14.540	0.091	***
AFR AMER/BLACK	0.650	0.212	3.060	0.018	**
AMER IND/AK NAT	0.505	0.315	1.600	0.010	
ASIAN AMER/ASIAN	0.529	0.158	3.350	0.020	***
NATIVE HI/PAC ISL	0.809	0.633	1.280	0.008	
MEX AMER/CHICANO	0.553	0.298	1.860	0.011	
PUERTO RICAN	0.434	0.478	0.910	0.005	
OTHER LATINO	0.233	0.235	0.990	0.006	
OTHER RACE	0.352	0.171	2.060	0.013	*
YRAPPOINT	0.025	0.003	7.290	0.054	***
ASSOC PROF	-0.034	0.080	-0.420	-0.003	
AST PROF	-0.235	0.124	-1.890	-0.019	
LECTURER	-0.075	0.167	-0.450	-0.003	
INSTRUCTOR	-0.135	0.150	-0.900	-0.008	
ADJUNCT	-0.073	0.105	-0.690	-0.005	
TENURED	-0.156	0.107	-1.460	-0.015	
DOCTORATE	-0.003	0.092	-0.030	0.000	
FULLSTAT	-0.184	0.126	-1.460	-0.013	
BIOSCI	-0.776	0.343	-2.260	-0.040	*
BUSIN	-0.576	0.349	-1.650	-0.027	
EDUC	1.413	0.348	4.060	0.069	***
ENGIN	-1.602	0.385	-4.160	-0.047	***
ENGL	1.589	0.347	4.580	0.079	***

HEALTH	-0.876	0.353	-2.480	-0.045	*
HIST/POLI SCI	-0.837	0.347	-2.420	-0.041	*
HUMAN	-0.225	0.344	-0.650	-0.012	
FINARTS	0.343	0.343	1.000	0.020	
MATH/STATS	-4.009	0.365	-10.990	-0.159	***
PHYSSCI	-1.748	0.349	-5.010	-0.100	***
SOCSCI	-0.529	0.335	-1.580	-0.036	
OTHERECH	-1.648	0.379	-4.340	-0.052	***
OTHNONTECH	0.170	0.341	0.500	0.010	
STEM	0.145	0.109	1.340	0.013	
FT UNDERGRD FAC	-0.439	0.092	-4.760	-0.040	***
PRIN ACT: TEACH	0.263	0.086	3.070	0.021	**
HPWPREP1TO4	-0.011	0.158	-0.070	-0.001	
HPWPREP5TO8	0.571	0.153	3.740	0.048	***
HPWPREP9TO12	0.721	0.155	4.650	0.059	***
HPWPREP13TO16	0.808	0.163	4.940	0.056	***
HPWPREP17TO20	0.845	0.172	4.920	0.050	***
HPWPREPOVER21	1.086	0.173	6.270	0.063	***
HPWRES1TO4	0.606	0.086	7.020	0.057	***
HPWRES5TO8	0.801	0.104	7.720	0.060	***
HPWRES9TO12	0.879	0.124	7.080	0.051	***
HPWRES13TO16	0.922	0.157	5.870	0.039	***
HPWRES17TO20	0.561	0.173	3.240	0.021	**
HPWRESOVER21	0.834	0.155	5.380	0.039	***
PUB1TO2	0.239	0.100	2.390	0.019	*
PUB3TO4	0.190	0.114	1.660	0.013	
PUB5TO10	-0.006	0.112	-0.050	0.000	
PUB11TO20	-0.135	0.124	-1.090	-0.009	
PUB21TO50	-0.209	0.136	-1.540	-0.012	
PUBOVER51	-0.306	0.167	-1.840	-0.014	*
DVLP: WRKSHPS	0.547	0.074	7.360	0.046	***
DVLP: NEW CRS	0.801	0.079	10.190	0.066	***
DVLP: TECH	0.494	0.074	6.720	0.044	***
TEACH AWARD	0.500	0.062	8.030	0.049	***
ACT: PEDAGOGY	1.511	0.067	22.580	0.144	***
OPN: STUD SUCCESS	-0.599	0.093	-6.440	-0.039	***
OPN: LEARN BEST	-0.751	0.061	-12.330	-0.074	***
OPN: PREP STUDNTS	0.595	0.064	9.270	0.057	***
OPN: TCH VALUE	-0.184	0.095	-1.940	-0.012	
STRESS: LOW	-0.353	0.077	-4.580	-0.031	***
STRESS: HIGH	0.423	0.072	5.910	0.038	***

MIDWEST	0.033	0.087	0.380	0.003	
SOUTH	-0.231	0.124	-1.860	-0.014	
WEST	0.046	0.094	0.490	0.004	
HBCU	0.886	0.383	2.310	0.014	*
CONTROL (PRIVATE)	0.489	0.111	4.400	0.047	***
RELIGAFIL	-0.443	0.086	-5.120	-0.043	***
PCT INSRCT STAFF	-0.024	0.008	-3.200	-0.026	**
PCT FT: UG	0.015	0.003	6.020	0.045	***
PCT FT: GRAD	-0.004	0.001	-3.190	-0.024	**
ENRTOT	0.000	0.000	-0.250	-0.004	
TUITION/FEES	0.000	0.000	-1.360	-0.019	
TOTL EXPEND	0.000	0.000	-0.840	-0.009	
PCT EXP INSTRCT	0.012	0.006	2.010	0.016	*
_cons	-33.932	6.961	-4.870		***

*Notes:*

Reference categories: WHITE/CAUCASIAN, PROFESSOR, AG/FORESTRY, NOPUB, HPWPREP0, HPWRES0, STRESS: AVG, EAST

Significance levels: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Residual standard error: 498003.641 on 24,748 degrees of freedom

R-squared: 0.1780, Adjusted R-squared: 0.1753

$F(78, 23748) = 65.92$

When comparing the three models, the third, or unrestricted, model has greater explanatory value, as is evident when comparing the adjusted R-squared values, 0.0293, 0.169, and 0.1753, respectively. The coefficient of determination,  $R^2$ , indicates the amount of total variation in the dependent variables explained by the regression model (Gujarati, 2003). The coefficient of determination indicated that approximately 18% of variation in the use of LCI methods is explained by the unrestricted model. While the  $R^2$  was relatively low in the multiple linear regression models, the statistical significance of the coefficients suggests some important conclusions in how the dependent variable is impacted by changes to the independent variables. In this multiple linear regression, these regression coefficients represent the mean change in  $Y$  for one unit of change for the independent, or  $X$ , variables, holding constant for all other variables included in the model. Essentially, these coefficients indicate the amount of increase or decrease

in the LCISCALE for each unit increase in a variable representing an individual demographic characteristic, work experience characteristic, or institutional characteristic, holding all other variables constant.

For the sake of comparison, the combined results of the three models are shown in Table 4. This table displays the coefficients, or parameter estimates, along with the relative statistical significance.

Table 4

*Faculty Use of LCI Methods, Multiple Linear Regression Model Comparison*

	<b>Model 1</b>	<b>Model 2</b>	<b>Model 3</b>
LCISCALE			
AGE	0.00417 (1.50)	0.0152*** (5.01)	0.0166*** (5.38)
SEX (FEMALE)	1.663*** (26.03)	0.926*** (14.84)	0.918*** (14.54)
AFR AMER/BLACK	1.147*** (5.10)	0.754*** (3.60)	0.650** (3.06)
AMER IND/AK NAT	0.415 (1.26)	0.355 (1.16)	0.505 (1.60)
ASIAN AMER/ASIAN	0.0555 (0.33)	0.525*** (3.34)	0.529*** (3.35)
NATIVE HI/PAC ISL	0.950 (1.44)	0.954 (1.56)	0.809 (1.28)
MEX AMER/CHICANO	0.725* (2.25)	0.503 (1.69)	0.553 (1.86)
PUERTO RICAN	0.684 (1.34)	0.529 (1.11)	0.434 (0.91)
OTHER LATINO	0.280 (1.11)	0.228 (0.98)	0.233 (0.99)
OTHER RACE	0.940*** (5.60)	0.442** (2.72)	0.352* (2.06)
YRAPPOINT		0.0224*** (6.72)	0.0248*** (7.29)
ASSOC PROF		-0.0106 (-0.13)	-0.0339 (-0.42)
AST PROF		-0.237 (-1.96)	-0.235 (-1.89)

LECTURER	-0.220 (-1.36)	-0.0749 (-0.45)
INSTRUCTOR	-0.163 (-1.12)	-0.135 (-0.90)
ADJUNCT	0.0310 (0.30)	-0.0729 (-0.69)
TENURED	-0.208* (-2.03)	-0.156 (-1.46)
DOCTORATE	0.0278 (0.31)	-0.00308 (-0.03)
FULLSTAT	-0.273* (-2.21)	-0.184 (-1.46)
BIOSCI	-0.449 (-1.34)	-0.776* (-2.26)
BUSIN	-0.220 (-0.65)	-0.576 (-1.65)
EDUC	1.689*** (4.97)	1.413*** (4.06)
ENGIN	-1.250*** (-3.31)	-1.602*** (-4.16)
ENGL	1.908*** (5.64)	1.589*** (4.58)
HEALTH	-0.608 (-1.77)	-0.876* (-2.48)
HIST/POLI SCI	-0.518 (-1.53)	-0.837* (-2.42)
HUMAN	0.166 (0.50)	-0.225 (-0.65)
FINARTS	0.687* (2.05)	0.343 (1.00)
MATH/STATS	-3.615*** (-10.14)	-4.009*** (-10.99)
PHYSSCI	-1.330*** (-3.91)	-1.748*** (-5.01)
SOCSCI	-0.164 (-0.50)	-0.529 (-1.58)
OTHERECH	-1.288*** (-3.46)	-1.648*** (-4.34)
OTHNONTECH	0.487 (1.46)	0.170 (0.50)
STEM	0.132	0.145

	(1.22)	(1.34)
FT UNDERGRD FAC	-0.320***	-0.439***
	(-3.57)	(-4.76)
PRIN ACT: TEACH	0.356***	0.263**
	(4.35)	(3.07)
HPWPREP1TO4	-0.0179	-0.0112
	(-0.11)	(-0.07)
HPWPREP5TO8	0.564***	0.571***
	(3.73)	(3.74)
HPWPREP9TO12	0.716***	0.721***
	(4.65)	(4.65)
HPWPREP13TO16	0.823***	0.808***
	(5.08)	(4.94)
HPWPREP17TO20	0.875***	0.845***
	(5.14)	(4.92)
HPWPREPOVER21	1.079***	1.086***
	(6.28)	(6.27)
HPWRES1TO4	0.608***	0.606***
	(7.13)	(7.02)
HPWRES5TO8	0.778***	0.801***
	(7.59)	(7.72)
HPWRES9TO12	0.827***	0.879***
	(6.76)	(7.08)
HPWRES13TO16	0.866***	0.922***
	(5.57)	(5.87)
HPWRES17TO20	0.516**	0.561**
	(3.02)	(3.24)
HPWRESOVER21	0.798***	0.834***
	(5.23)	(5.38)
PUB1TO2	0.252*	0.239*
	(2.55)	(2.39)
PUB3TO4	0.218	0.190
	(1.94)	(1.66)
PUB5TO10	0.0225	-0.00571
	(0.20)	(-0.05)
PUB11TO20	-0.137	-0.135
	(-1.13)	(-1.09)
PUB21TO50	-0.204	-0.209
	(-1.53)	(-1.54)
PUBOVER51	-0.373*	-0.306
	(-2.28)	(-1.84)

DVLP: WRKSHPS	0.542*** (7.37)	0.547*** (7.36)
DVLP: NEW CRS	0.828*** (10.65)	0.801*** (10.19)
DVLP: TECH	0.476*** (6.55)	0.494*** (6.72)
TEACH AWARD	0.464*** (7.52)	0.500*** (8.03)
ACT: PEDAGOGY	1.537*** (23.27)	1.511*** (22.58)
OPN: STUD SUCCESS	-0.620*** (-6.74)	-0.599*** (-6.44)
OPN: LEARN BEST	-0.771*** (-12.79)	-0.751*** (-12.33)
OPN: PREP STUDNTS	0.628*** (10.09)	0.595*** (9.27)
OPN: TCH VALUE	-0.184 (-1.96)	-0.184 (-1.94)
STRESS: LOW	-0.356*** (-4.68)	-0.353*** (-4.58)
STRESS: HIGH	0.427*** (6.01)	0.423*** (5.91)
MIDWEST		0.0329 (0.38)
SOUTH		-0.231 (-1.86)
WEST		0.0462 (0.49)
HBCU		0.886* (2.31)
CONTROL (PRIVATE)		0.489*** (4.40)
RELIGAFIL		-0.443*** (-5.12)
PCT INSRCT STAFF		-0.0242** (-3.20)
PCT FT: UG		0.0153*** (6.02)
PCT FT: GRAD		-0.00411** (-3.19)
ENRTOT		-0.00000142

			(-0.25)
TUITION/FEES			-4.83e-10
			(-1.36)
TOTL EXPEND			-3.86e-11
			(-0.84)
PCT EXP INSTRCT			0.0116*
			(2.01)
_cons	20.02***	-28.51***	-33.93***
	(20.63)	(-4.19)	(-4.87)
N	24462	24462	23827
Adj. R-squared	0.0293	0.169	0.1753

*Notes:*

Reference categories: WHITE/CAUCASIAN, PROFESSOR, AG/FORESTRY, NOPUB, HPWPREP0, HPWRES0, STRESS: AVG, EAST

t statistics in parentheses

Significance levels: \* p<0.05, \*\*p<0.01, \*\*\* p<0.001

The unrestricted model suggested that the use of learner-centered instructional methods, as indicated by the composite LCISCALE, increased as age increased, holding all other variables constant. This effect (0.017) was statistically significant at the .001 level. Being female also had a positive effect (.0918) significant at the .001 level. The racial category White was omitted to serve as the reference variable. Unstandardized coefficients indicated identifying as African American/Black had a positive effect on the utilization of learner-centered instructional methods (0.650) significant at the .01 level, holding all other variables constant. Additionally, identifying as Asian/Asian American demonstrated a positive effect (0.529) significant at the .001 level. Identifying as race other than those listed suggested a positive effect (0.352) on the use of LCI methods, statistically significant at the .05 level. Year of appointment demonstrated a positive effect (0.025) significant at the .001 level. This suggests that more recently appointed faculty members demonstrate a higher usage of learner-centered instructional practices.

The aggregated department of Agriculture or Forestry was omitted as a reference variable. Teaching in a Biological Sciences department demonstrated a negative effect of -0.776m significant at the .05 level. Teaching in an Education department demonstrated a positive effect (1.413) statistically significant at the .001 level, while teaching in an Engineering department demonstrated a negative effect (-1.602) significant at the .001 level. Teaching in an English department demonstrated a positive effect of 1.589 significant at the .001, holding all other variables constant. Teaching in several other departments demonstrated negative effects. These included Mathematics or Statistics (-4.009), Physical Sciences (-1.748), and Other Technical (-1.648), all significant at the .001 level. Additionally, teaching in a Health-related or History or Political Science department demonstrated negative effects of -0.876 and -0.837, respectively. These effects were both significant at the .05 level.

Serving as a full-time undergraduate faculty member demonstrated a negative effect (-0.439), statistically significant at the .001 level. However, indication that one's principal activity at the institution was teaching demonstrated a positive effect of 0.263, significant at the .01 level. The number of hours per week spent preparing for teaching suggested a positive effect on the use of LCI teaching methods. Faculty members who spent five to eight hours per week preparing for teaching had an effect of 0.571, while faculty members who spent nine to twelve hours per week preparing for teaching had an effect of 0.721. Faculty members who spent thirteen to sixteen hours per week preparing for teaching had an effect of 0.808, while faculty members who spent seventeen to twenty hours per week preparing for teaching had an effect of 0.845. Faculty members who spent over twenty-one hours per week preparing for teaching had an effect of 1.086. Each of these effects was significant at the .001 level.

The number of hours per week spent engaged in research also suggested a positive effect on the use of LCI teaching methods. Faculty members who spent one to four hours per week engaged in research had an effect of 0.606, while faculty members who spent five to eight hours per week engaged in research had an effect of 0.801. Faculty members who spent nine to twelve hours per week engaged in research had an effect of 0.879, while faculty members who spent thirteen to sixteen hours per week engaged in research had an effect of 0.922. Faculty members who spent seventeen to twenty hours per week engaged in research had an effect of 0.521, while faculty members who spent over twenty-one hours per week engaged in research had an effect of 0.834. Each of these effects was significant at the .001 level.

Faculty productivity, in the form of publication, had mixed results. Publication included artifacts such as articles in academic or professional journals, chapters in edited volumes, books, manuals, monographs, or other artifacts including patents or computer software products. Publication of one to two artifacts demonstrated a positive effect (0.239), while publication of over fifty-one artifacts demonstrated a negative effect (-0.306). Both of these effects were statistically significant at the .05 level. Other varying levels of publication productivity did not suggest statistically significant results.

As may be expected, participation in faculty development activities demonstrated a positive effect on the use of learner-centered instructional methods. Participation in paid workshops outside the institution focused on teaching suggested a positive effect of 0.547, while participation in professional development including incentives to develop new courses demonstrated an effect of 0.801. Participation in professional development including incentives to integrate new technology into the classroom had a positive effect (0.494), while participation in organized activities around enhancing pedagogy had a positive effect of 0.500, significant at

the .001 level, holding all other variables constant. These findings are not surprising, through opportunities to engage in conversations around teaching and pedagogy, there are opportunities for faculty members to learn (Reder, 2007). Additionally, receiving an award for outstanding teaching also demonstrated a positive effect (0.500). These effects were all statistically significant at the .001 level.

Opinions about teaching also demonstrated effects on the use of LCI methods. Indicating agreement that it is up to individual students whether or not they succeed in the faculty member's course demonstrated a negative effect (-0.599), significant at the .001 level. Indicating agreement that most students learn best when they do their assignments on their own demonstrated a negative effect of (-0.751), statistically significant at the .001 level. Indication of agreement that most students at the institution are well-prepared academically demonstrated a positive effect (0.595), significant at the .001 level.

Faculty members' stress levels appeared to demonstrate an effect on the use of LCI methods in classroom teaching. Responding with a low score indicating career related stress suggested a negative effect of -0.353, while responding with a high score indicating career related stress suggested a positive effect of 0.423. These effects were both statistically significant at the .001 level.

Institutional characteristics also demonstrate effects on faculty teaching practices. Teaching at a historically Black college or university (HBCU) appeared to demonstrate a positive effect (0.886) on faculty members' use of learner-centered instructional practices, significant at the .05 level. Working at a private institution appeared to demonstrate a positive effect (0.489), significant at the .001 level. Employment at a religiously affiliated institution demonstrated a negative effect of -0.443, statistically significant at the .001 level. Interestingly,

as the percentage of instructional staff at the institution increased, the effect appeared to be negative (-0.024), significant at the .01 level. An increase in the percentage of full-time undergraduate students at the institution appeared to demonstrate a positive effect of 0.015, holding all other variables constant. Conversely, as the percentage of full-time graduate students at the institution increased, there was a negative effect of -0.004, statistically significant at the .01 level. Finally, the percent of institutional expenditure devoted to instruction demonstrated a positive effect (0.012) significant at the .005 level.

## CHAPTER 5

### DISCUSSION

In this chapter, I present a discussion of the results from the statistical analysis of the data obtained from the Higher Education Research Institute (HERI) Faculty Survey and the Integrated Postsecondary Education Data System (IPEDS). Second, I discuss the implications of the study. Next, I present the limitations of this dissertation study and provide directions for future research. Finally, I provide my summative conclusions.

#### **Discussion of the Statistical Analysis**

The results of the statistical analysis were presented in the preceding chapter. These results address the study's research questions and suggest that a number of individual demographic characteristics, work experience characteristics, and institutional characteristics influence the use of learner-centered instructional methods. Additionally, the results suggest that some demographic, work experience and institutional characteristics do not appear to influence faculty members' use of these pedagogical practices.

#### **Faculty Member's Use of Learner-Centered Pedagogical Practices**

The discussion about, and emphasis on, learner-centered instructional practices appears to have had an effect on the teaching practices of American postsecondary faculty. In general, faculty members seem to have embraced these pedagogical practices represented by the LCISCALE to some degree. As demonstrated by the descriptive statistics of the composite LCISCALE variable constructed from twelve individual learner-centered instructional techniques, the bulk of faculty members scored between 23 and 35 points, indicating that these

practices are used occasionally, with some faculty using them frequently. Most of the faculty in this group indicated a mix of occasional and frequent use of these various methods.

Individual learner-centered instructional techniques showed a degree of variation in terms of frequency of use. For example, asking students to provide and/or receive feedback to classmates about a draft or work in progress (CRSSASSIGN10) was more evenly distributed across “Not at All,” “Occasionally,” and “Frequently” than was the case for other methods such as asking students to engage deeply with a significant challenge or question within a faculty member’s discipline (CRSASSIGN01), having students work with classmates outside of class (CRSASSIGN08), or assigning students to lead a discussion, activity, or lab (CRSASSIGN09), all of which skewed toward frequent use. Asking students to submit multiple drafts of written work (METHOD07) and assigning reflective writing or journaling (METHOD09) also indicated relatively even distribution of use across “Not at All,” “Occasionally,” and “Frequently.” However, for class discussions (METHOD01), nearly 85% of responding faculty indicated frequent use of this method. In the case of this particular learner-centered instructional method, the high rate of use may be due to faculty members being comfortable facilitating class discussions, whereas some of the other learner-centered instructional methods may not be as familiar or comfortable.

While it is difficult to pinpoint the specific reason for the adoption and use of these pedagogical practices, whether it be due to institutional faculty development efforts, socialization to the academic profession while in graduate school, or through individual faculty members’ personal motivation, it is clear that learner-centered instructional methods are being employed to various degrees in postsecondary classrooms. However, there are still disparities across faculty members, especially when accounting for individual demographic, work experience, and

institutional characteristics. These differences will be discussed and highlighted in the subsequent sections.

### **Influence of Individual Demographic Characteristics on the Use of Learner-Centered Pedagogical Practices**

Guided by the work of Bowen and Schuster (1986), Blackburn and Lawrence (1995), and Lattuca and Stark (2009), this study explored the influence of demographic characteristics on faculty teaching practices. Several demographic or individual characteristics of faculty members demonstrate an effect on the use of learner-centered instructional methods in the classroom. Age appeared to demonstrate a positive relationship with the use of learner-centered instructional methods. This relationship was statistically significant at the .001 level in the multiple linear regression model utilizing the LCISCALE as the dependent variable. This finding supports Jones' (2008) suggestion that new faculty members, who are likely younger, have had less exposure to the theory and practice of teaching and may consequently be less inclined to use new or innovative teaching methods. Additionally, faculty members may give more attention to teaching, and pedagogical techniques, as they grow older (Stark, Lowther, Bentley, Ryan, Martens, Genthon, Wren, & Shaw, 1990). However, this is counter to previous findings reported by Bowen and Schuster (1986) who suggested that older faculty members were more traditional in their academic work than younger peers. The older faculty members represented by the data in this dissertation study may have had more, or longer, exposure to the national conversation about enhancing pedagogy and learner-centered instruction than their younger peers.

Age was not the only personal demographic characteristic to influence the use of LCI methods. Not only did faculty who identify as female report greater use of learner-centered instructional practices, as demonstrated in crosstabulation, this was consistent in the regression

analysis. Sex demonstrated a strong positive relationship significant at the .001 level in the multiple linear regression model utilizing the LCISCALE as the dependent variable. Faculty members who identify as female tend to be more prone to utilizing these pedagogical methods. This finding supports previous research suggesting that male faculty members rely most heavily on lecture as a pedagogical practice (Lammers & Murphy, 2002) and female faculty utilize learner-centered practices more frequently (Hurtado, Eagan, Pryor, Whang, & Tran, 2012; Webber, 2012). Additionally, female faculty members have reported greater time spent on teaching than have their male peers (Blackburn, Lawrence, Bieber, & Trautvetter, 1991; Finkelstein, Conley, & Schuster, 2016), which may lead to seeking out teaching practices, such as LCI, that facilitate more robust learning for students. It has been posited that female faculty members may be more nurturing as part of their teaching practice (Stark, Lowther, Bentley, Ryan, Martens, Genthon, Wren, & Shaw, 1990), a trait that may align with, and lead to, the constructivist foundation upon which many LCI methods are based.

Race also appeared to demonstrate an effect on the use of LCI pedagogical strategies. The unrestricted multiple linear regression model suggested that there is a positive relationship with utilizing these teaching methods for those faculty members who identify as African American or Black, Asian American or Asian, or another race. Interestingly, this conflicts with the findings of Nelson Laird, Garver, and Niskode-Dossett (2011), who found that Asian and Pacific Islander faculty spent a greater proportion of their time lecturing than did their White peers. This finding is important; previous literature has suggested that faculty members from minority groups face hurdles that may negatively influence their instruction (e.g. Blackburn & Lawrence, 1995; Curtin, Malley, & Steward, 2016; Reid, 2010). However, the findings of this

study suggest that despite these challenges, faculty from some underrepresented populations are more prone to utilize learner-centered instructional techniques in the classroom.

### **Influence of Work Experience Characteristics on the Use of Learner-Centered Pedagogical Practices**

Drawing on the work of Bowen and Schuster (1986), Blackburn and Lawrence (1995), and Lattuca and Stark (2009), the conceptual framework for this study included an emphasis on characteristics of faculty members' work experience, including year of appointment, tenure status, rank, and discipline. The year of appointment at a faculty member's current institution also appears to demonstrate an effect on the use of LCI methods. Appointments that are more recent suggested a positive effect, significant at the .001 level, in the multiple linear regression model. This appears to be somewhat at odds with the previous findings related to age. One might posit that there would be correlation between younger faculty members and a more recent appointment at an institution. However, chronological age and the year of appointment at the recent institution appear to have different effects on the use of learner-centered instruction.

Tenure status, rank, and discipline exert different influences on faculty members' use of learner-centered instructional practices. Tenure status appears to have only a slight effect on faculty members' use of these pedagogical methods. The multiple linear regression models indicated that tenured faculty members had a negative, but not statistically significant association with the use of LCI methods. However, this finding aligns with previous findings that tenured faculty report lower levels of use than their tenure-track peers do (Webber, 2012). It is possible that as faculty members earn tenure, they have become comfortable in their respective teaching practices and consequently do not seek out new methods to foster student learning or are perhaps less comfortable with new technologies. Additionally, the tenure process does not evaluate and

assess teaching in terms of student learning; instead it focuses on measures such as preparation for courses and student evaluations (Shapiro, 2006). Consequently, the use of learner-centered instructional methods are not incentivized in the tenure evaluation process. Finally, upon earning tenure, faculty members' attention may be focused elsewhere, such as research or other areas that might ensure their successful promotion.

Academic rank appears to exert little influence on faculty members' use of learner-centered instructional methods in their classroom teaching practice. Crosstabulation indicated that assistant and associate professors reported slightly more frequent use of these pedagogical techniques than instructors and lecturers. While not statistically significant, the unrestricted multiple linear regression results indicated a negative relationship among the various ranks and the use of these methods compared to full professors. This finding is inconsistent with Webber's (2012) finding that full professors reported less frequent use of learner-centered instructional methods, relative to peers of other ranks.

These findings suggest that while there may exist slight variation in the strength of effect on the use of learner-centered instructional practices among various ranks, it is minor and not statistically significant. In order to advance in academic rank, faculty members typically have to demonstrate competence and achievement in teaching, research, and service; however, use of these methods may not be an area of focus when highlighting teaching efficacy. Additionally, faculty members who have advanced in rank and been promoted to full professor may feel greater freedom to utilize learner-centered instructional methods in their teaching practice.

Lattuca and Stark (2009) suggested that teaching styles are connected with, and informed by, the disciplines of faculty members. The findings of this study support this assertion. The academic department in which faculty members teach appeared to demonstrate considerable

influence on the use of learner-centered instructional practice, with aggregated academic departments showing interesting differences. When examining the crosstabulation results, there were no faculty members in Education, English, or Agriculture or Forestry departments who indicated never using any of the twelve LCI teaching methods. Additionally, faculty members in Education and English departments indicated some of the highest use of these pedagogical practices. This was further illuminated by the results of the unrestricted multiple linear regression model which indicated a positive and statistically significant relationship at the .001 level for faculty members in Education and English departments. These findings are consistent with Goubeaud and Yan's (2004) findings that faculty in teacher education departments use these practices more than faculty in other departments.

While still statistically significant at the .001 level, teaching in an Engineering, Math or Statistics, Physical Sciences, or other technical department demonstrated a negative relationship with the use of these methods. These findings suggest that faculty who teach in fields associated with math or the hard sciences use these practices far less frequently. This is in conflict with previous findings of Walczyk and Ramsey (2003), whose analysis indicated no differences in the use of LCI methods among disciplines. However, the finding of the present study appear to be consistent with those previous studies suggesting soft fields report greater use of deep learning approaches than hard fields (Nelson Laird, Shoup, Kuh, & Schwarz, 2008; Webber & Tschepikow, 2012). As such, institutional leaders may wish to specific target faculty in hard fields, if they wish to increase the use of learner-centered instruction in those disciplines.

Some may posit that learner-centered instructional practices may be better suited for, or more easily implemented in, specific disciplines. However, proponents of LCI techniques suggest that these techniques are transdisciplinary and are suitable in multiple settings (e.g.

Morrison, 2014; Poole, 2007; Rule, 2006). Additionally, some learner-centered instructional practices, such as problem-based learning (PBL), have been used in medical and professional school settings for decades (Wood, 2004). This highlights the continued need to assess the use of LCI practices within disciplines and departments in order to understand how to reward and add value to their implementation (McKinney, 2007).

Faculty members who are full-time appear to be less inclined to use learner-centered instructional methods than those who are part-time, as indicated by crosstabulation. The unrestricted multiple linear regression model also suggested a negative effect on the use of these methods; however, this relationship was not statistically significant. This finding is in contrast to previous findings that full-time faculty use active learning techniques more than part-time faculty (Umbach, 2008; Webber, 2012). Serving as an adjunct faculty member did not demonstrate a statistically significant relationship with the use of learner-centered instructional methods, although the results of the unrestricted regression model indicated this effect was negative. While not statistically significant, this finding aligns with previous research suggesting adjunct faculty members are more likely to rely on traditional teaching methods, such as lecture, than their full-time peers are (Caruth & Caruth, 2013).

The ways in which faculty members use their time also appear to have a relationship with the use of these teaching practices. Increased hours per week devoted to preparing for teaching (HPWPREP5TO8, HPWPREP9TO12, HPWPREP13TO16, HPWPREP17TO20, and HPWPREPOVER21) demonstrated increased positive effects on the use of LCI methods, all significant at the .001 level. The use of time devoted to research also had a positive relationship with the use of learner-centered instructional methods, although the greatest effect was for thirteen to sixteen hours per week (HPWRES13TO16) spent on research. This might dispel some

of the criticism of faculty suggesting that time devoted to research detracts from teaching. This finding supports previous findings that faculty highly involved in research were the most likely to report using these practices (Myers & Myers, 2015) and that quality teaching does not occur at the expense of scholarship (Figlio & Schapiro, 2017).

Publication practices, however, do not appear to demonstrate a strong relationship with teaching practices. The publication of one to two artifacts had a positive relationship statistically significant at the .05 level. Publication of over fifty-one artifacts had a negative relationship statistically significant at the .05 level. This conflicts with Myers and Myers' (2015) previous findings that faculty who published more peer-reviewed research were more inclined to utilize LCI practices. While there appears to be a connection between research activity and the implementation of learner-centered instructional practices, the publication that may result from research does not appear to be connected with teaching techniques. It may be that disciplinary orientation and the time devoted to research may exert stronger influences than the volume of resulting published material.

Unsurprisingly, faculty members who take advantage of professional development opportunities related to teaching and learning appear to be more inclined to utilize LCI methods. These opportunities include attending paid workshops outside the institution focused on teaching (DVLP: WRKSHPS), utilizing incentives to develop new courses (DVLP: NEW CRS), and utilizing incentives to integrate new technology into the classroom (DVLP: TECH). Faculty development initiatives have been identified as an important component of faculty members improving their pedagogical practice and utilizing learner-centered instructional approaches (Blumberg, 2015). Participation in organized activities around enhancing pedagogy (ACT: PEDAGOGY) suggested a positive relationship with the use of learner-centered instructional

methods, as did having received an award for outstanding teaching (TEACH AWARD).

Intuitively, this finding makes sense. Faculty members who are willing to engage in faculty development related to enhancing their teaching practice would likely be willing to try new and different pedagogical approaches and thus might receive awards for doing so.

Faculty members' opinions also demonstrate an influence on faculty members' use of learner-centered pedagogical practices. Agreement that most students at the institution are well prepared academically (OPN: PREP STUDENTS) demonstrated a positive relationship with the use of learner-centered instructional methods. Conversely, increased belief that it is primarily up to individual students whether they succeed in faculty courses (OPN: STUD SUCCESS) and most students learning best when they do their assignments on their own (OPN: LEARN BEST) demonstrated a negative relationship with the use of these pedagogical practices. Each of these effects was statistically significant at the .001. Again, these findings make sense. The latter two opinions reflect a belief that student learning is an individual process, which is in conflict with the constructivist approach upon which many learner-centered instructional techniques are based.

Finally, faculty members' stress also appear to influence faculty members' use of learner-centered pedagogy. Indication of a low amount of career-related stress suggested a negative, statistically significant effect on these use of these methods, while indication of a high amount of career-related stress suggested a positive, statistically significant effect on the use of learner-centered instructional practices. These findings are especially interesting. It may be possible that faculty members that are more concerned about their professional success, resulting in career-related stress, are also concerned with utilizing more learner-centered instructional methods as a means to contribute to their success.

## **Influence of Institutional Characteristics on the Use of Learner-Centered Pedagogical Practices**

The conceptual framework for this study draws upon Blackburn and Lawrence's (1995) description of faculty work, which included an emphasis on institutional type. Faculty at HBCUs reported more frequent use of these pedagogical practices, as demonstrated by the descriptive statistics of the composite LCISCALE variable. Faculty members who teach at historically black colleges and universities (HBCU) appear to be more likely to employ LCI methods in their classroom teaching practice than peers at non-HBCUs. Not only do faculty members employed at HBCUs report higher rates of use at 29, 30, and 31 points on the LCISCALE than their non-HBCU peers, but there was a statistically significant positive effect associated with employment at historically Black colleges and universities, as demonstrated by the linear regression results. This aligns with Rovai, Gallien, and Wighting's (2005) assertion that faculty members at HBCUs may be more likely to utilize learner-centered instructional practices, which may serve as a better match of learning style for Black students. Additionally, Blackburn and Lawrence (1995) suggested that faculty members at HBCUs significant value on their roles as teachers, which may imply a willingness to learn about, and employ, pedagogical practices, such as learner-centered instructional methods, that foster and promote deep learning for their students.

Institutional control appears to demonstrate an effect on faculty members' use of learner-centered instruction, with faculty members at private not-for-profit institutions reporting more frequent use of these pedagogical practices, as demonstrated by the descriptive statistics of the composite LCISCALE variable. This relationship similarly appeared to be positive and statistically significant in the unrestricted linear regression model. This aligns with previous

findings that faculty members at private institutions were more likely to utilize learner-centered instructional techniques in the classroom (Umbach & Wawrzynski, 2005).

The institutions that make up the private not-for-profit group in this study may explain these results. Blau (1994) found that faculty members at private colleges and universities tend to be more loyal to their institution and faculty members who are more loyal to the institution emphasize the importance of teaching. It is possible that liberal arts colleges, which often fall into the private not-for-profit sector, hire faculty with a passion for, and interest in teaching, which ultimately leads to faculty who are more welcoming of suggestions for teaching innovation. Additionally, as suggested by Tagg (2003) institutions focused on learning tend to align all of their activities around that particular goal. This may be an easier feat at private institutions, which may experience fewer external demands and competing priorities than do public institutions. There may be a greater emphasis on teaching at private schools and leaders at these institutions may align resources to promote additional workshops on teaching and pedagogy.

The geographic region in which the institution is situated did not appear to demonstrate a statistically significant effect on the employment of learner-centered instructional methods; however, student enrollment patterns at institutions appear to influence faculty members' use of these methods. As the percent of full-time graduate students at the institution (PCT FT: GRAD) increased, there was a statistically significant negative relationship with the use of LCI methods in the multiple linear regression model. However, the opposite was true as the percent of full-time undergraduate students at the institution (PCT FT: UG) increased. Again, this positive effect was statistically significant in the multiple linear regression model utilizing the LCISCALE.

Finally, the percentage of institutional expenses dedicated to instruction (PCT EXP INSTRCT) appears to demonstrate a positive effect on the use of learner-centered instructional practices by American postsecondary faculty. This positive effect was statistically significant. Instructional expenditure includes “general academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and regular, special, and extension sessions. Also includes expenses for both credit and non-credit activities” (National Center for Education Statistics, 2016d). This finding makes intuitive sense; institutions that allocate a larger portion of their expenditure on instruction-related expenses may have a culture that fosters and promotes the use of learner-centered instruction. This aligns with previous research on institutional expenditure suggesting that institutional expenditure on instruction has positive outcomes related to student achievement (Powell, Gilleland, & Pearson, 2012). Institutions that value high quality teaching leading to positive outcomes in student learning choose to allocate resources that help faculty members become better teachers (Mayhew, Selznick, Rockenbach, Bowman, Seifert, & Wolniak, 2017). This may be through the faculty that such institutions attract and retain, or through faculty development efforts focused on teaching practices.

### **Implications**

As discussed previously, a body of literature has been dedicated to faculty teaching practices, including studies on techniques that promote deep and significant learning, as well as thought pieces encouraging faculty members to adopt learner-centered approaches to their classroom practices. Additionally, as discussed by Menges (2000), there is a gap in the literature regarding what factors influence contemporary faculty members to teach the way they do. By acknowledging and attending to this gap, it may be possible to address the questions and

criticism surrounding postsecondary education, particularly as they relate to student learning and achievement. The most important first step to improving teaching and learning in American postsecondary education is to understand and change the culture to reflect the importance to teaching (Jones, 2008).

One of the primary implications of this dissertation study is to assist faculty members and administrators in understanding those characteristics associated with the use of learner-centered instructional techniques in the classroom. The findings of this study are important for two of the three primary groups necessary to develop and institutionalize innovative pedagogy, which include administrators, faculty members, and students (Hainline, Gaines, Feather, Padilla, & Terry, 2010). Administrators and faculty members can use this evidence to address the criticism of higher education and improve postsecondary teaching. This information is essential if institutions wish to “move the needle” and promote greater learning for students. However, continuing to encourage the use of learner-centered instruction requires more than data. Previous studies have demonstrated the efficacy of these methods in promoting student learning, yet somehow this evidence has not been convincing enough to make significant, sustainable changes to teaching practice (Weimer, 2017).

Understanding the factors and characteristics that contribute to the use of learner-centered instructional practices can allow higher education administrators to increase the use of these practices on their respective campuses, by appropriately targeting areas for improvement. Furthermore, while the ongoing conversation about learner-centered instruction in American postsecondary higher education has taken place for over two decades, much of that conversation has centered on thought pieces and outcomes of specific techniques, as opposed to pragmatic

ways through which to change behavior. The results of this research help to illuminate some ways through which to prompt such change.

The findings of this research suggest that age, race, and sex influence faculty members' use of learner-centered instructional practices in the classroom. This information should prove beneficial for academic leaders as they consider the composition of the faculty within their respective institutions and departments. However, not only can institutional decision-makers seek out individual faculty members who may be more inclined to utilize these methods, they can also devise strategies to encourage the use of these methods from faculty members belonging to demographic groups less inclined to utilize learner-centered instruction.

Similarly, institutional leadership can work to provide faculty development opportunities for those departments in which faculty are less likely to engage in these teaching practices, with specific attention to departments such as Engineering, Math or Statistics, Physical Sciences, or other technical departments. Effective teaching does not occur naturally; faculty members need the opportunity to learn from literature, one another, and best practices (Reder, 2007). As faculty members who engage in professional development around teaching and learning or enhancing pedagogy are more likely to utilize learner-centered instructional methods in the classroom, academic leadership can provide these opportunities to departments less inclined to utilize these techniques in order to modify faculty members' teaching practices. This aligns with Stark's (2000) assertion that disciplinary orientations are an important factor to consider when working to facilitate teaching improvement. Attention to specific departments may also allow for the exploration and explanation of how specific learner-centered practices might align with, and be best utilized in, various disciplines. This may further encourage the use of these teaching techniques within departments less inclined to employ them.

The findings of this research also call into question assertions that faculty members who are focused on research do so at the expense of their teaching efficacy (e.g. Altbach, Spitzberg, Johnstone, & Slaughter, 1985; Chen, 2015; Ishiyama, Miles, & Balazero, 2010; Kerr, 1995). This dissertation study suggests that time spent engaging in research has a positive effect on the utilization of LCI methods in the classroom. This aligns with Reder's (2007) assertion that an emphasis on teaching and learning does not require faculty to make a choice between scholarship and teaching. Not only does this help to dispel a common narrative, but it also has implications for how institutions think about faculty workload and use of time. Institutions outside of those considered research-oriented or research-intensive may wish to encourage some time spent on research or other scholarly efforts, as they may support faculty engagement with learner-centered practices. Additionally, time spent with continued knowledge acquisition within the discipline may promote new and divergent thought of how to present material to students.

Instructional expenditure is another important consideration in light of the findings of this research study. The results indicate the percentage of institutional expenses dedicated to instruction has positive effect on the use of learner-centered instructional practices by American postsecondary faculty. Higher education administrators with a strong commitment to enhancing student learning are advised to consider the amount of institutional expenditure dedicated to instruction. Regional accrediting organizations are attentive to this issue, including criterion for accreditation focused on institutional resource allocation. The Higher Learning Commission's (2017) Criteria for Accreditation serve as an example, including multiple criteria related to resources for instructors to remain current in teaching roles and the resources necessary to support effective teaching. Not only does expenditure on instruction demonstrate an effect on the use of sound pedagogical practices, but also as increased attention is given to postsecondary

education's financial practices, expenditure in this area demonstrates a commitment to the teaching and learning function of institutions.

The results of this study also have implications for socialization to the academic profession through graduate school preparation. As the results of this study suggest that workshops focused on teaching, participation in organized activities around enhancing pedagogy, and incentives to integrate new technology into the classroom all contribute to increased odds of using learner-centered instructional practices, graduate programs may wish to consider the addition, or even requirement, of courses focused on teaching as part of the curriculum. The criticism that faculty are trained as researchers in a specific discipline, and not as teachers, is both common and longstanding. New faculty members will need the knowledge and competence to facilitate learning through multiple pedagogical methods (Austin, 2002), including learner-centered instructional practices. The curricula in graduate preparation programs primarily focus on disciplinary knowledge and research, but should also include an emphasis on pedagogical practice (Robinson & Hope, 2013). A change of this nature would not only address this criticism, but also encourage the study of pedagogical techniques within a disciplinary context, allowing for both a nuanced and pragmatic approach to the use of learner-centered instructional techniques.

### **Limitations**

Despite careful planning and implementation, no research study is without imperfections. Indeed, any study is bound by limitations. What follows is a set of limitation pertaining to this dissertation research.

## **HERI Faculty Survey Instrument**

One limitation of this study relates to the sample of American postsecondary faculty members who participate in the HERI Faculty Survey. From the universe of higher education institutions that employ faculty, only a subset elects to pay the fee to participate in the survey during each iteration of its administration. Of those institutions that do choose to participate in the survey, participation in the survey is still voluntary, which further limits the sample. Finally, of those faculty members who do choose to complete the survey, not all of them respond to each question or prompt on the survey, resulting in missing information. However, despite these hurdles the findings from research that utilize HERI Faculty Survey data are generalizable.

Additionally, the data obtained from the HERI Faculty Survey are unweighted. Nonetheless, the number of valid observations and the distributions shown in descriptive statistics show that these data reasonably represent the population. However, these data are merely a representation and do not mirror all faculty at all postsecondary institutions in the United States.

## **Self-report Bias**

One limitation of this dissertation research is one that is common among any study that utilizes self-reported survey data, namely, self-report bias. In self-reporting situations, respondents often wish to respond in a manner that makes them look favorable (Donaldson & Grant-Vallone, 2002; van de Mortel, 2008). This may occur consciously or unconsciously, wherein respondents over-estimate favorable behavior and under-estimate less desirable behavior in their responses (Arnold & Feldman, 1981; Krosnick, 1999). In the present study, self-report bias may be present if faculty members indicated on the HERI Faculty Survey that they use specific practices aligned with learner-centered instruction more frequently than they actually do

because they believed it would present a more favorable image of themselves. Other areas in which self-report bias may have been present would be in questions related to faculty members' opinions or use of time. Consequently, this may result in inaccurate findings in the data analysis.

### **Hot Deck Imputation**

Missing data is an issue that can plague survey-based research, especially as it can cause problems with statistical power and bias estimates (Roth, 1994). As discussed in Chapter 3, there is no perfect means through which to address missing data. While hot deck imputation is a more robust means of addressing missing data than other methods such as listwise deletion or mean substitution, like any form of imputation, it carries with it intrinsic limitations. Hot deck imputation requires similar observations from other units in order to fill in missing values. Additionally, as with any imputation method, the values provided by hot deck imputation are a "best guess" for missing observations in the dataset.

### **Creation of the Composite Scale**

A further limitation of this study pertains to the use of the composite scale to measure American postsecondary faculty members' implementation of learner-centered instructional practices in their classroom teaching. Because the scale was created from variables derived from responses to the HERI Faculty Survey, the composite score cannot measure the magnitude or degree of orientation to implement the practices. Instead, the composite score measures the frequency of use of twelve specific learner-centered instructional practices. From this, one might surmise a faculty members' orientation to implement these practices in the classroom. However, this is only an inference. Additionally, while this scale provides a reasonable proxy for the use of learner-centered instructional practices, it is not representative of all pedagogical practices that

might fall into this group. Nevertheless, the use of this scale provides meaningful insight into American postsecondary faculty members' use of LCI practices in classroom instruction.

### **Directions for Future Research**

While providing new insight into individual demographic, work experience, and institutional characteristics that influence contemporary American faculty members to employ learner-centered instructional techniques in their pedagogical practice, this study additionally provides possibilities for a future research agenda with the potential for continued discovery and understanding. This continued research agenda may continue to contribute to the scholarship advocated for by Huber and Hutchings (2005) in an effort to extend beyond individual classrooms, programs, and institutions, and to provide a large-scale awareness and understanding of the uses of learner-centered practices by postsecondary faculty.

### **National Exploration of Individual Methods**

As articulated previously, the bulk of the existing research has focused on individual learner-centered instructional techniques and commonly within particular institutional or course-specific contexts. To this end, it is recommended that continued and future research should explore individual learner-centered instructional methods from a national perspective. Doing this will provide greater understanding of factors and characteristics that influence the use of specific instructional practices, either aggregated, such as a grouping collaborative, cooperative, and team-oriented learning techniques, or individually, such as engaging students with a significant question within a specific discipline. Research of this nature would allow for more attention to the nuances of various individual learner-centered instructional methods, as well as those faculty and institutional characteristics that contribute to their use.

## **Gender and Age**

The findings of this research bring to light information about the effects of gender and age on the use of learner-centered instructional methods. Future research may explore these phenomena more deeply, especially as these two demographic characteristics interact with one another, or with other variables. Academic rank and discipline may be other variables worth exploring in relationship with gender and age. Similarly, it may be worth exploring the interaction with race, as well. Additional insight into gender and chronological age variables may provide helpful information as institutional leaders consider the composition of faculty and ways to incentivize greater uses of learner-centered instruction on campus.

## **In-Depth Analysis of Faculty Development Activities**

While this research highlights that faculty members who engage in faculty development activities related to teaching and learning activities are more likely to utilize learner-centered instructional methods, questions still exist regarding what specific types of faculty development activities are most beneficial. Due to the nature of the HERI Faculty Survey, and the broad scope of questions contained within, it is not possible to tease out more information regarding these practices. For example, continued research may explore if there is a difference between faculty development activities hosted by an institution's center for teaching and learning as opposed to activities hosted by a professional organization. Additionally, research might investigate if there is a difference between multi-day or single-day development activities. Furthermore, there may be utility in understanding if differences exist between discipline-specific development opportunities and cross- or inter-disciplinary faculty development opportunities related to teaching and learning. While many colleges and universities have centers dedicated to improving teaching and learning through faculty development, to date, there is limited evidence to the

extent of their impact on faculty culture (Dunwoody, Westcott, Drews, & Hosler, 2012). Further investigation into these activities and faculty teaching practices might provide such evidence.

### **Disciplinary Context**

The current study looked at American postsecondary faculty holistically, with some exploration into differences among disciplines as represented by aggregated academic departments. Becher and Trowler (2001) conceptualized disciplines as academic tribes that are governed by their own sets of values and norms. As such, future studies may wish to treat disciplines as the specific unit of analysis in order to understand the use of learner-centered instructional practices within disciplines. For example, continued research may explore if there are specific learner-centered instructional techniques that are utilized more frequently in certain disciplines. This continued research may also uncover challenges to implementing certain pedagogical practices within a disciplinary context.

### **Faculty Motivation**

This study provided insight into faculty members' opinions and dispositions as they relate to the use of learner-centered instructional practices in classroom teaching. Future research may wish to explore more fully faculty members' motivation as it relates to the use of these pedagogical techniques. It may be beneficial to understand what drives faculty members to learn about and utilize these methods in their classroom instruction. Are faculty members who utilize LCI methods motivated by an intrinsic desire to be better teachers? Perhaps they have chosen to use these methods as a means to obtain better course evaluations. It is possible that an institution has incentivized the use of these teaching strategies. Greater understanding of faculty members' motivation to engage in the use of these practices would allow for institutional leaders to further

support the use of these methods on individual campuses. This insight may also expose hurdles that prevent other faculty members from embracing and utilizing these methods.

### **Summative Conclusions**

As articulated by Boyer (1990), the process of teaching and learning is an act of scholarship. Arguably, this form of scholarship is at the heart of the American postsecondary educational enterprise. In addition to other roles and responsibilities on their respective campuses, faculty members are charged with facilitating learning experiences for students. However, this important role is in many ways nebulous. It is difficult to understand faculty teaching activities, due to the lack of tangible products from which to measure and evaluate teaching, as well as the varying opinions about what comprises and represents quality teaching (Blackburn & Lawrence, 1995). As such, faculty members' reports of their teaching styles and practices can serve as a reasonable proxy.

While often cast as a foil to lecture, learner-centered instructional methods are not meant to eradicate lecture from the classroom. However, because of their benefits for students and the deep learning to which they can contribute, the argument could be made that these various teaching methods should supplant lecture as the primary form of providing instruction. When compared to other pedagogical practices, lecture is less inspirational than other methods and often leads to less study overall (Gibbs, 2013). As articulated previously, a robust body of literature suggests that learner-centered instructional methods are a best practice in pedagogy to facilitate student learning.

The research and findings contained within this dissertation shed some light on contemporary faculty teaching activities, as they relate to the use of learner-centered instruction. The emphasis on learner-centered instructional practices over the past two decades appears to

have had an effect on the teaching practices of American postsecondary faculty. The majority of faculty appear to utilize these methods to some degree, with variance across a number of demographic characteristics. Not only do the characteristics of individual faculty members appear to demonstrate an effect on the use of learner-centered instructional methods, but also so too does the way in which faculty members are organized at their institutions, in the form of the departments in which they teach. Furthermore, participation in faculty development activities related to enhancing teaching and learning practices appears to exert a strong influence on the use of these pedagogical practices. Additionally, while institutional characteristics, in terms of student body composition, appear to affect faculty members' use of LCI methods, institutional control appears to be more important, with faculty at private, not-for-profit institutions more likely to incorporate these instructional practices in their teaching.

Taken together, these findings provide important information about factors that influence the methods faculty members use when teaching. While faculty members should continue to enjoy academic freedom, including their pedagogical choices, perhaps these findings can provide institutional leaders with actionable information to foster and promote continued commitment to the use of these practices to facilitate greater learning for students. By finding new ways to support and encourage the use of learner-centered instruction, higher education leaders can address the questions and criticism surrounding American postsecondary education, principally as they relate to student learning and achievement. Moreover, as mentioned in the first chapter, not only can these methods improve student learning, they can, and arguably should, be more fun for both faculty and students.

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APPENDIX A  
HERI DATA ACCESS VARIABLE LIST

<b>1. Name of principal investigator:</b>		Caleb J. Keith	
<b>2. Which survey and which year(s)</b>		<b>Yes / No</b>	<b>Year (s)</b>
The Freshman Survey (TFS)		No	
Your First College Year (YFCY)		No	
College Senior Survey (CSS)		No	
The Faculty Survey (FAC)		Yes	2013-2014
<b>3. Please describe the population/subset in your study:</b> (i.e., first-time full-time freshman only, women only, graduating seniors, STEM majors only, responded to freshman survey and senior survey, etc.)		Faculty members at American institutions of higher education.	
<b>4. Please list all variables included in your study:</b>	<b>Dependent Variable?</b> (Yes/No)	Please use variable names based on your type of request. If requesting data for one year only, use the variable names from the annual codebook. If requesting data for two or more years, use the variable names from the trends file codebook. If requesting longitudinal data (TFS/YFCY or TFS/CSS), use only variables from the YFCY or CSS codebooks. YFCY and CSS codebooks contain matching TFS responses and variables (eg., ACT01_TFS) found at the end the codebooks. <b>HERI codebooks:</b> <a href="http://www.heri.ucla.edu/researchersToolsCodebooks.php">http://www.heri.ucla.edu/researchersToolsCodebooks.php</a>	
		<b>Variable Name</b> (i.e., COLACT01, SATIS15)	<b>Variable Description</b>
1	No	ACE	College I.D.
2	No	YR1STAPPOINT	Year of 1st Appointment: Year you received your first academic appointment
3	No	YRAPPOINT	Year Appointed: Year of academic appointment at present institution
4	No	ACADRANK	What is your present academic rank?
5	No	ADJUNCT	Are you an adjunct faculty member at this institution?
6	No	TENURE	What is your tenure status at this institution?
7	No	YRTENURE	Please enter the four-digit year you received tenure (e.g., 1974, 2001)
8	No	SEX	Your sex:
9	No	FULLSTAT	Are you considered a full-time employee of your institution for at least nine months of the current academic year?

10	No	PTCHOICE	If given the choice, I would prefer to work full-time at this institution
11	No	PTWORKFT	Have you ever sought a full-time teaching position at this or another institution?
12	No	PTTSEEK	How long ago did you pursue a full-time position
13	No	PRINACT	What is your principal activity in your current position at this institution? (Mark one)
14	No	IMPTRTS1	Personally, how important to you is: Importance: Research
15	No	IMPTRTS2	Personally, how important to you is: Importance: Teaching
16	No	IMPTRTS3	Personally, how important to you is: Importance: Service
17	No	COURSENUM	How many courses are you teaching this term (include all institutions at which you teach) (e.g., 0,1,2,3)?
18	No	CRSTYPES01	Course Type: General education courses
19	No	CRSTYPES02	Course Type: Course required for an undergraduate major
20	No	CRSTYPES03	Course Type: Other undergraduate credit course
21	No	CRSTYPES04	Course Type: Developmental/remedial course (not for credit)
22	No	CRSTYPES05	Course Type: Non-credit course (other than above)
23	No	CRSTYPES06	Course Type: Graduate courses
24	No	PRIMARYTEACH	What types of courses do you primarily teach? (Mark one)
25	No	GRADCOURSE	In the past two years, have you taught a graduate course?
26	No	ACT01	Activity: Advised student groups involved in service/volunteer work
27	No	ACT02	Activity: Collaborated with the local community in research/teaching
28	No	ACT07	Activity: Engaged undergraduates on your research project
29	No	ACT08	Activity: Worked with undergraduates on a research project

30	No	ACT10	Activity: Supervised an undergraduate thesis
31	No	TCHACT01	Teaching Activity: Taught an honors course
32	No	TCHACT02	Teaching Activity: Taught an Interdisciplinary Course
33	No	TCHACT03	Teaching Activity: Taught an area studies course (e.g., women's studies, ethnic studies, LGBTQ studies)
34	No	TCHACT04	Teaching Activity: Taught a service learning course
35	No	TCHACT05	Teaching Activity: Taught an exclusively web-based course at this institution
36	No	TCHACT06	Teaching Activity: Participated in organized activities around enhancing pedagogy and student learning
37	No	TCHACT07	Teaching Activity: Taught a seminar for first-year students
38	No	TCHACT08	Teaching Activity: Taught a capstone course
39	No	TCHACT09	Teaching Activity: Taught in a learning community (e.g. FIG, linked courses)
40	No	TCHACT10	Teaching Activity: Taught a course that meets general education requirements
41	No	UGPRESENT	Present: Presented with undergraduate students at conferences
42	No	UGPUBLISH	Publish: Published with undergraduates
43	No	DEVELOP01	Prof Develop: Paid workshops outside the institution focused on teaching
44	No	DEVELOP06	Prof Develop: Incentives to develop new courses
45	No	DEVELOP07	Prof Develop: Incentives to integrate new technology into your classroom
46	No	PUBLISH01	Publish: Articles in academic or professional journals
47	No	PUBLISH02	Publish: Chapters in edited volumes
48	No	PUBLISH03	Publish: Books, manuals, or monographs
49	No	PUBLISH04	Publish: Other, such as patents, or computer software products

50	No	HPW01	Hours per Week: Scheduled teaching (give actual, not credit hours)
51	No	HPW02	Hours per Week: Preparing for teaching (including reading student papers and grading)
52	No	HPW03	Hours per Week: Advising and counseling of students
53	No	HPW04	Hours per Week: Committee work and meetings
54	No	HPW05	Hours per Week: Other administration
55	No	HPW06	Hours per Week: Research and scholarly writing
56	No	HPW07	Hours per Week: Other creative products/performances
57	No	HPW08	Hours per Week: Community or public service
58	No	HPW09	Hours per Week: Outside consulting/freelance work
59	No	MNDHAB01	Habits of Mind: Ask questions in class
60	No	MNDHAB03	Habits of Mind: Seek solutions to problems and explain them to other
61	No	MNDHAB04	Habits of Mind: Revise their papers to improve their writing
62	No	MNDHAB09	Habits of Mind: Explore topics on their own, even though it was not required for a class
63	No	MNDHAB11	Habits of Mind: Seek feedback on their academic work
64	No	MNDHAB12	Habits of Mind: Work with other students on group projects
65	No	CONSACT01	Activity: Use different points of view to make an argument
66	Yes	CRASSIGN01	Assignment: Engage deeply with a significant challenge or question within your discipline
67	Yes	CRASSIGN04	Assignment: Apply learning from both academic and field settings
68	Yes	CRASSIGN08	Assignment: Work with classmates outside of class
69	Yes	CRASSIGN09	Assignment: Lead a discussion, activity or lab
70	Yes	CRASSIGN10	Assignment: Provide and/or receive feedback to classmates about a draft or work still in progress

71	Yes	METHOD01	Method: Class discussions
72	Yes	METHOD02	Method: Cooperative learning (small groups)
73	Yes	METHOD03	Method: Experiential learning/Field studies
74	Yes	METHOD05	Method: Group projects
75	Yes	METHOD06	Method: Extensive lecturing
76	Yes	METHOD07	Method: Multiple drafts of written work
77	Yes	METHOD08	Method: Student-selected topics for course content
78	Yes	METHOD09	Method: Reflective writing/journaling
79	Yes	METHOD10	Method: Community service as part of coursework
80	Yes	METHOD11	Method: Electronic quizzes with immediate feedback in class
81	Yes	METHOD12	Method: Using real-life problems
82	Yes	METHOD13	Method: Using student inquiry to drive learning
83	Yes	METHOD14	Method: "Learn before lecture" through multimedia tools (e.g., flipping the classroom)
84	Yes	METHOD15	Method: Readings on racial and ethnic issues
85	Yes	METHOD18	Method: Techniques to create an inclusive classroom environment for diverse students
86	Yes	METHOD20	Method: Student presentations
87	Yes	METHOD21	Method: Student evaluations of each others' work
88	Yes	METHOD22	Method: Grading on a curve
89	Yes	METHOD24	Method: Rubric-based assessment
90	Yes	CRSASSESS01	Assessment: Provide instructions clearly delineating what students are to do to complete the assignment
91	Yes	CRSASSESS02	Assessment: Explain what you want students to gain from the assignment
92	Yes	CRSASSESS03	Assessment: Provide feedback on drafts or work still in progress

93	Yes	CRSASSESS04	Assessment: Provide in advance the criteria for evaluating the assignment
94	Yes	CRSASSESS05	Assessment: Explicitly link the assignment with course goals or learning objectives
95	Yes	CRSTECH01	Course Technology: YouTube or other video
96	Yes	CRSTECH02	Course Technology: Classroom enhancement technology (e.g., Elmo, tablet PCs)
97	Yes	CRSTECH03	Course Technology: Simulations/animation
98	No	TCHOPN01	Opinion: It is primarily up to individual students whether they succeed in my courses
99	No	TCHOPN09	Opinion: Most students learn best when they do their assignments on their own
100	No	INSTOPN03	Inst Opinion: Most students are well-prepared academically
101	No	INSTOPN07	Inst Opinion: Faculty here are strongly interested in the academic problems of undergraduates
102	No	INSTOPN09	Inst Opinion: My research is valued by faculty in my department
103	No	INSTOPN10	Inst Opinion: My teaching is valued by faculty in my department
104	No	INSTOPN11	Inst Opinion: My service is valued by faculty in my department
105	No	INSTDESCR04	Inst Description: Faculty are rewarded for being good teacher
106	No	AFFACT01	Affect: Feel that the training you received in graduate school prepared you well for your role as a faculty member
107	No	AFFACT07	Affect: Structure your courses so that students master a conceptual understanding of course content
108	No	AFFACT08	Affect: Structure your courses so that students develop study skills that prepare them for college-level work
109	No	SATIS01	Satisfaction: Salary

110	No	SATIS04	Satisfaction: Opportunity for scholarly pursuits
111	No	SATIS05	Satisfaction: Teaching load
112	No	SATIS06	Satisfaction: Quality of students
113	No	SATIS11	Satisfaction: Job security
114	No	SATIS13	Satisfaction: Course assignments
115	No	SATIS14	Satisfaction: Freedom to determine course content
116	No	SATIS16	Satisfaction: Prospects for career advancement
117	No	SATIS18	Satisfaction: Overall job satisfaction
118	No	STRESS13	Stress: Teaching load
119	No	GENACT01	Act: Are you a member of a faculty union?
120	No	GENACT02	Act: Are you a U.S. citizen?
121	No	GENACT03	Act: Do you plan to retire within the next three years?
122	No	GENACT07	Act: Have you ever received an award for outstanding teaching?
123	No	SALARY	Please enter your base institutional salary (e.g., for \$56,000, please enter 56000)
124	No	SALARYBASE	Your base institutional salary reported above is based on (Mark one)
125	No	PTSALARY	Please enter your total salary from teaching at this institution for this academic year (e.g., for \$30,000, please enter 30000). (
126	No	PTPAY	How much are you paid per course at this institution
127	No	DEGEARN	Highest Degree Earned
128	No	RACE1	White/Caucasian
129	No	RACE2	African American/Black
130	No	RACE3	American Indian/Alaska Native
131	No	RACE4	Asian American/Asian
132	No	RACE5	Native Hawaiian/Pacific Islander
133	No	RACE6	Mexican American/Chicano
134	No	RACE7	Puerto Rican
135	No	RACE8	Other Latino
136	No	RACE9	Other

137	No	NATENGSP	Is English your native language?
138	No	MARITAL	Are you currently:
139	No	NCHILD1	Child: Under 18 years old
140	No	NCHILD2	Child: 18 years or older
141	No	YRBIRTH	Please enter the four-digit year of your birth (e.g., 1944, 1988).
142	No	SALARY09	Aggregated - Salary based on 9/10 months (full-time employees only)
143	No	SALARY12	Aggregated - Salary based on 11/12 months (full-time employees only)
144	No	AGE	Aggregated Age
145	No	YR1STAPPOINTA	Aggregated - Year of 1st academic appointment
146	No	YRAPPOINTA	Aggregated - Year of appointment at present institution
147	No	YRTENUREA	Aggregated - If tenured, year tenure was awarded
148	No	MAJORA	Aggregated Major
149	No	DEPTA	Aggregated Department
150	No	STEM	Faculty works in STEM department
151	No	RESTYPE1	Full-time Undergraduate Faculty
152	No	RESTYPE2	Part-time Undergraduate Faculty
153	No	RESTYPE3	Full-time Administrator
154	No	RESTYPE4	Graduate-only faculty
155	No	RESTYPE5	Other Staff
156	No	FACWGT	Faculty weight
157	No	STRAT	CIRP Stratification Cell
158	No	STATE	Institution State
159	No	HERIREG	HERI Region
160	No	OBereg	OBE Region
161	No	HBCU	HBCU Flag
162	No	SELECTIVTY	Institution Selectivity
163	No	INSTTYPE	Institution Type
164	No	INSTCONT	Institution Control
165	No	SATIS_WORKPLACE	Workplace Satisfaction
166	No	STRESS	Career Related Stress

167	No	SATIS_WORKPLACE_GRP	Workplace Satisfaction Group
168	No	STRESS_GRP	Career Related Stress Group

APPENDIX B  
REQUESTED IPEDS DATA LIST

<b><u>Num.</u></b>	<b><u>IPEDS Variable</u></b>	<b><u>Year</u></b>
1	Control	Fall 2013
2	Level of Institution	Fall 2013
3	Sector of Institution	Fall 2013
4	Control of Institution	Fall 2013
5	Institution Size Category	Fall 2013
6	Religious Affiliation	Fall 2013
7	Degree of urbanization (Urban-centric locale) (Fall 2013)	Fall 2013
8	Percent Admitted - total (Fall 2013)	Fall 2013
9	Admission Yield - total (Fall 2013)	Fall 2013
10	Total Enrollment (Fall 2013)	Fall 2013
11	Number Enrolled Full-Time (Fall 2013)	Fall 2013
12	Number Enrolled Part-Time (Fall 2013)	Fall 2013
13	Full-Time Undergraduates Enrolled (Fall 2013)	Fall 2013
14	Full-Time Graduate Students Enrolled (Fall 2013)	Fall 2013
15	Part-Time Undergraduates Enrolled (Fall 2013)	Fall 2013
16	Part-Time Graduate Students Enrolled (Fall 2013)	Fall 2013
17	All Staff (Fall 2013)	Fall 2013
18	Instructional Staff (Fall 2013)	Fall 2013
19	Research Staff (Fall 2013)	Fall 2013
20	Full-time instructional staff by academic rank, faculty and tenure status, race/ethnicity and gender - All Instructional Staff - Grand Total (Fall 2013)	Fall 2013
21	Full-time instructional staff by academic rank, faculty and tenure status, race/ethnicity and gender - All Instructional Staff - Grand Total Men (Fall 2013)	Fall 2013
22	Full-time instructional staff by academic rank, faculty and tenure status, race/ethnicity and gender - All Instructional Staff - Grand Total Women (Fall 2013)	Fall 2013
23	Public Institutions GASB 34/35 - Tuition and fees, after deducting discounts and allowances (Fiscal Year 2014)	Fiscal Year 2014
24	Public Institutions GASB 34/35 - Total Operating Revenues (Fiscal Year 2014)	Fiscal Year 2014

25	Public Institutions GASB 34/35 - Total All Revenues and other additions (Fiscal Year 2014)	Fiscal Year 2014
26	Public Institutions GASB 34/35 Total Expenses - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
27	Public Institutions GASB 34/35 Instruction - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
28	Public Institutions GASB 34/35 Research - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
29	Public Institutions GASB 34/35 Public Service - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
30	Public Institutions GASB 34/35 Academic Support - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
31	Public Institutions GASB 34/35 Student Services - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
32	Public Institutions GASB 34/35 Institutional Support - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
33	Public Institutions GASB 34/35 Scholarships and fellowships expenses - Current Year Total (Fiscal Year 2014)	Fiscal Year 2014
34	Public Institutions GASB 34/35 Value of endowment assets at the end of the fiscal year (Fiscal Year 2014)	Fiscal Year 2014
35	Private not-for-profit institutions or public institutions using FASB Tuition and Fees (Fiscal Year 2014)	Fiscal Year 2014
36	Private not-for-profit institutions or public institutions using Net total revenues, after assets released from restriction - Total (Fiscal Year 2014)	Fiscal Year 2014
37	Private not-for-profit institutions or public institutions using FASB Total Expenses - Total Amount (Fiscal Year 2014)	Fiscal Year 2014
38	Private not-for-profit institutions or public institutions using FASB Instruction - Total Amount (Fiscal Year 2014)	Fiscal Year 2014
39	Private not-for-profit institutions or public institutions using FASB Research - Total Amount (Fiscal Year 2014)	Fiscal Year 2014
40	Private not-for-profit institutions or public institutions using FASB Public Service - Total Amount (Fiscal Year 2014)	Fiscal Year 2014
41	Private not-for-profit institutions or public institutions using FASB Academic Support - Total Amount (Fiscal Year 2014)	Fiscal Year 2014
42	Private not-for-profit institutions or public institutions using FASB Student Services - Total Amount (Fiscal Year 2014)	Fiscal Year 2014

43	Private not-for-profit institutions or public institutions using FASB Institutional Support - Total Amount (Fiscal Year 2014)	Fiscal Year 2014
44	Private not-for-profit institutions or public institutions using FASB Net Grant Aid to Students - Total Amount (Fiscal Year 2014)	Fiscal Year 2014
45	Private not-for-profit institutions or public institutions using FASB Value of endowment assets at the end of the fiscal year (Fiscal Year 2014)	Fiscal Year 2014

APPENDIX C  
ORIGINAL DATASET DESCRIPTIVE STATISTICS

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**SUBJID** (unlabeled)

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Type: numeric (double)  
 Range: [600003,625001]  
 Unique values: 24,999      Missing: 0/24,999  
 Mean: 612502  
 Std. Dev.: 7216.73  
 Percentiles:      10%              25%              50%              75%              90%  
                          602502              606252              612502              618752              622502

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**YR1STAPPOINT** Year of 1st Appointment: Year you received your first academic appointment

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Type: numeric (double)  
 Range: [0,2014]  
 Unique values: 70      Missing: 1,212/24,999  
 Mean: 1996.95  
 Std. Dev.: 38.5875  
 Percentiles:      10%              25%              50%              75%              90%  
                          1980              1990              2000              2007              2011

---

**YRAPPOINT** Year Appointed: Year of academic appointment at present institution

---

Type: numeric (double)  
 Range: [0,2014]  
 Unique values: 118      Missing: 1,220/24,999  
 Mean: 1959.25  
 Std. Dev.: 290.792  
 Percentiles:      10%              25%              50%              75%              90%  
                          1985              1996              2005              2012              2014

---

**ACADRANK** What is your present academic rank?

---

Type: numeric (double)  
 Range: [1,5]  
 Unique values: 5      Missing: 4,222/24,999  
 Tabulation:      Freq.              Numeric Label:  
                          6,591              1 Professor  
                          5,552              2 Associate Professor  
                          4,928              3 Assistant Professor  
                          1,384              4 Lecturer  
                          2,322              5 Instructor  
                          4,222              .

---

**ADJUNCT** Are you an adjunct faculty member at this institution?

---

Type: numeric (double)  
 Range: [0,1]  
 Unique values: 2      Missing: 10,733/24,999  
 Tabulation:      Freq.              Numeric Label:  
                          12,068              0 No  
                          2,198              1 Yes  
                          10,733              .

---

<b>TENURE</b>	What is your tenure status at this institution?					
Type: numeric (double)						
Range: [1,4]						
Unique values: 4	Missing: 3,875/24,999					
Tabulation:	Freq.	Numeric Label:				
	10,610	1 Tenured				
	3,605	2 On tenure track, but not tenured				
	5,987	3 Not on tenure track, but institution has tenure system				
	922	4 Institution has no tenure system				
	3,875	.				
<b>YRTENURE</b>	Please enter the four-digit year you received tenure (e.g., 1974, 2001).					
Type: numeric (double)						
Range: [0,2014]	Units: .0001					
Unique values: 56	Missing: 17,894/24,999					
Mean: 2000.5						
Std. Dev.: 35.0463						
Percentiles:	10%	25%	50%	75%	90%	
	1986	1995	2004	2009	2012	
<b>SEX</b>	Your sex:					
Type: numeric (double)						
Range: [0,1]						
Unique values: 2	Missing: 1,449/24,999					
Tabulation:	Freq.	Numeric Label:				
	12,157	0 Male				
	11,393	1 Female				
	1,449	.				
<b>FULLSTAT</b>	Are you considered a full-time employee of your institution for at least nine months?					
Type: numeric (double)						
Range: [0,1]						
Unique values: 2	Missing: 1,319/24,999					
Tabulation:	Freq.	Numeric Label:				
	3,208	0 No				
	20,472	1 Yes				
	1,319	.				
<b>PTCHOICE</b>	If given the choice, I would prefer to work full-time at this institution.					
Type: numeric (double)						
Range: [0,1]						
Unique values: 2	Missing: 21,799/24,999					
Tabulation:	Freq.	Numeric Label:				
	1,327	0 No				
	1,873	1 Yes				
	21,799	.				
<b>PTWORKFT</b>	Have you ever sought a full-time teaching position at this or another institution?					

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 21,791/24,999

Tabulation:	Freq.	Numeric	Label:
	1,534	0	No
	1,674	1	Yes
	21,791	.	

---

**PTTSEEK**      How long ago did you pursue a full-time position?

---

Type: numeric (double)

Range: [1,5]

Unique values: 5      Missing: 23,360/24,999

Tabulation:	Freq.	Numeric	Label:
	426	1	Currently seeking a position
	260	2	Within the last year
	189	3	1 to 2 years ago
	218	4	3 to 5 years ago
	546	5	More than 5 years ago
	23,360	.	

---

**PRINACT**      What is your principal activity in your current position at this institution?

---

Type: numeric (double)

Range: [1,5]

Unique values: 5      Missing: 1,507/24,999

Tabulation:	Freq.	Numeric	Label:
	1,976	1	Administration
	18,649	2	Teaching
	2,141	3	Research
	307	4	Services to clients and patients
	419	5	Other
	1,507	.	

---

**IMPTRSCH**      Importance: Research

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 1,571/24,999

Tabulation:	Freq.	Numeric	Label:
	1,514	1	Not important
	5,235	2	Somewhat important
	7,659	3	Very important
	9,020	4	Essential
	1,571	.	

---

**IMPTTCH**      Importance: Teaching

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 1,499/24,999

Tabulation:	Freq.	Numeric	Label:
	85	1	Not important

618	2 Somewhat important
5,220	3 Very important
17,577	4 Essential
1,499	.

---

**IMPTSRV** Importance: Service

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 1,743/24,999

Tabulation:	Freq.	Numeric Label:
	902	1 Not important
	6,783	2 Somewhat important
	10,542	3 Very important
	5,029	4 Essential
	1,743	.

---

**COURSENUM** How many courses are you teaching this term (include all institutions at which you teach)?

---

Type: numeric (double)

Range: [0,20] Units: .01

Unique values: 28 Missing: 1,587/24,999

Mean: 2.50553

Std. Dev.: 1.55732

Percentiles:	10%	25%	50%	75%	90%
	1	1	2	3	4

---

**CRSTYPES01** Course Type: General education courses

---

Type: numeric (double)

Range: [0,12] Units: .01

Unique values: 14 Missing: 5,317/24,999

Mean: .611997

Std. Dev.: 1.05654

Percentiles:	10%	25%	50%	75%	90%
	0	0	0	1	2

---

**CRSTYPES02** Course Type: Course required for an undergraduate major

---

Type: numeric (double)

Range: [0,140] Units: .01

Unique values: 24 Missing: 4,622/24,999

Mean: 1.55216

Std. Dev.: 1.72961

Percentiles:	10%	25%	50%	75%	90%
	0	0	1	2	3

---

**CRSTYPES03** Course Type: Other undergraduate credit course

---

Type: numeric (double)

Range: [0,99] Units: .1

Unique values: 19 Missing: 5,455/24,999

Mean: .498695

Std. Dev.: 1.15316

Percentiles:	10%	25%	50%	75%	90%
	0	0	0	1	2

**CRSTYPES04** Course Type: Developmental/remedial course (not for credit)

Type: numeric (double)  
 Range: [0,6] Units: .1  
 Unique values: 8 Missing: 6,071/24,999  
 Tabulation:

Freq.	Value
18,652	0
1	.4
154	1
69	2
32	3
16	4
2	5
2	6
6,071	.

**CRSTYPES05** Course Type: Non-credit course (other than above)

Type: numeric (double)  
 Range: [0,11]  
 Unique values: 7 Missing: 6,056/24,999  
 Tabulation:

Freq.	Value
18,493	0
350	1
70	2
16	3
11	4
2	6
1	11
6,056	.

**CRSTYPES06** Course Type: Graduate courses

Type: numeric (double)  
 Range: [0,20] Units: .1  
 Unique values: 19 Missing: 5,218/24,999  
 Mean: .478909  
 Std. Dev.: .951938  
 Percentiles:

10%	25%	50%	75%	90%
0	0	0	1	2

**PRIMARYTEACH** What Types of courses do you primarily teach?

Type: numeric (double)  
 Range: [1,4]  
 Unique values: 4 Missing: 22,821/24,999  
 Tabulation:

Freq.	Numeric Label:
1,200	1 Undergraduate credit courses
391	2 Graduate credit courses
98	3 Non-credit courses

489            4 I do not teach  
22,821        .

---

**GRADCOURSE**      In the past two years, have you taught a graduate course?

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 1,585/24,999

Tabulation:            Freq.            Numeric Label:  
                         14,193            0 No  
                         9,221             1 Yes  
                         1,585             .

---

**ACT01**              Activity: Advised student groups involved in service/volunteer work

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,446/24,999

Tabulation:            Freq.            Numeric Label:  
                         11,221            0 Not Marked  
                         11,332            1 Marked  
                         2,446             .

---

**ACT02**              Activity: Collaborated with the local community in research/teaching

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,602/24,999

Tabulation:            Freq.            Numeric Label:  
                         11,571            0 Not Marked  
                         10,826            1 Marked  
                         2,602             .

---

**ACT07**              Activity: Engaged undergraduates on your research project

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,631/24,999

Tabulation:            Freq.            Numeric Label:  
                         11,944            0 Not Marked  
                         10,424            1 Marked  
                         2,631             .

---

**ACT08**              Activity: Worked with undergraduates on a research project

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,588/24,999

Tabulation:            Freq.            Numeric Label:  
                         8,990             0 Not Marked  
                         13,421            1 Marked  
                         2,588             .

---

**ACT10**              Activity: Supervised an undergraduate thesis

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,821/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          14,547          0 Not Marked  
                          7,631          1 Marked  
                          2,821          .

**TCHACT01**          Teaching Activity: Taught an honors course

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,794/24,999

Tabulation:          Freq.          Numeric Label:  
                          18,837          0 No  
                          3,368          1 Yes  
                          2,794          .

**TCHACT02**          Teaching Activity: Taught an interdisciplinary course

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,801/24,999

Tabulation:          Freq.          Numeric Label:  
                          13,529          0 No  
                          8,669          1 Yes  
                          2,801          .

**TCHACT03**          Teaching Activity: Taught an area studies course (e.g., women's studies, ethnic studies, LGBTQ studies)

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,922/24,999

Tabulation:          Freq.          Numeric Label:  
                          18,848          0 No  
                          3,229          1 Yes  
                          2,922          .

**TCHACT04**          Teaching Activity: Taught a service learning course

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,921/24,999

Tabulation:          Freq.          Numeric Label:  
                          18,392          0 No  
                          3,686          1 Yes  
                          2,921          .

**TCHACT05**          Teaching Activity: Taught an exclusively web-based course at this institution

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 2,993/24,999

Tabulation:          Freq.          Numeric Label:

18,502	0 No
3,504	1 Yes
2,993	.

---

**TCHACT06** Teaching Activity: Participated in organized activities around enhancing pedagogy

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 2,745/24,999

Tabulation:	Freq.	Numeric Label:
	8,093	0 No
	14,161	1 Yes
	2,745	.

---

**TCHACT07** Teaching Activity: Taught a seminar for first-year students

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 2,853/24,999

Tabulation:	Freq.	Numeric Label:
	17,318	0 No
	4,828	1 Yes
	2,853	.

---

**TCHACT08** Teaching Activity: Taught a capstone course

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 2,905/24,999

Tabulation:	Freq.	Numeric Label:
	14,507	0 No
	7,587	1 Yes
	2,905	.

---

**TCHACT09** Teaching Activity: Taught in a learning community (e.g. FIG, linked courses)

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 3,029/24,999

Tabulation:	Freq.	Numeric Label:
	20,585	0 No
	1,385	1 Yes
	3,029	.

---

**TCHACT10** Teaching Activity: Taught a course that meets general education requirements

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 2,758/24,999

Tabulation:	Freq.	Numeric Label:
	10,286	0 No
	11,955	1 Yes

2,758 .

---

**UGPRESENT** Present: Presented with undergraduate students at conferences

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,203/24,999

Tabulation:	Freq.	Numeric Label:
	15,843	1 Not at All
	4,408	2 To Some Extent
	1,545	3 To a Great Extent
	3,203	.

---

**UGPUBLISH** Publish: Published with undergraduates

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,327/24,999

Tabulation:	Freq.	Numeric Label:
	17,656	1 Not at All
	3,145	2 To Some Extent
	871	3 To a Great Extent
	3,327	.

---

**DEVELOP01** Prof Develop: Paid workshops outside the institution focused on teaching

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 2,549/24,999

Tabulation:	Freq.	Numeric Label;
	3,125	1 Not Available
	1,419	2 Not Eligible
	12,647	3 No
	5,259	4 Yes
	2,549	.

---

**DEVELOP06** Prof Develop: Incentives to develop new courses

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 2,597/24,999

Tabulation:	Freq.	Numeric Label:
	3,245	1 Not Available
	1,370	2 Not Eligible
	12,919	3 No
	4,868	4 Yes
	2,597	.

---

**DEVELOP07** Prof Develop: Incentives to integrate new technology into your classroom

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 2,590/24,999

Tabulation:	Freq.	Numeric Label:
	2,818	1 Not Available

1,025	2 Not Eligible
12,427	3 No
6,139	4 Yes
2,590	.

---

**PUBLISH01** Publish: Articles in academic or professional journals

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 2,800/24,999

Tabulation:	Freq.	Numeric	Label:
	5,372	1	None
	4,386	2	1-2
	2,878	3	3-4
	3,685	4	5-10
	2,573	5	11-20
	2,075	6	21-50
	1,230	7	51+
	2,800	.	

---

**PUBLISH02** Publish: Chapters in edited volumes

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 3,210/24,999

Tabulation:	Freq.	Numeric	Label:
	11,308	1	None
	5,448	2	1-2
	2,374	3	3-4
	1,679	4	5-10
	652	5	11-20
	278	6	21-50
	50	7	51+
	3,210	.	

---

**PUBLISH03** Publish: Books, manuals, or monographs

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 3,356/24,999

Tabulation:	Freq.	Numeric	Label:
	14,631	1	None
	4,694	2	1-2
	1,277	3	3-4
	753	4	5-10
	206	5	11-20
	55	6	21-50
	27	7	51+
	3,356	.	

---

**PUBLISH04** Publish: Other, such as patents, or computer software products

---

Type: numeric (double)

Range: [1,7]

Unique values: 7

Tabulation:

Missing: 4,151/24,999

Freq. Numeric Label:

18,199 1 None

1,473 2 1-2

540 3 3-4

351 4 5-10

140 5 11-20

87 6 21-50

58 7 51+

4,151 .

---

**HPW01**

Hours per Week: Scheduled teaching (give actual, not credit hours)

---

Type: numeric (double)

Range: [1,7]

Unique values: 7

Tabulation:

Missing: 2,920/24,999

Freq. Numeric Label:

1,754 1 None

4,161 2 1-4

6,389 3 5-8

6,341 4 9-12

2,132 5 13-16

761 6 17-20

541 7 21+

2,920 .

---

**HPW02**

and grading)

Hours per Week: Preparing for teaching (including reading student papers

---

Type: numeric (double)

Range: [1,7]

Unique values: 7

Tabulation:

Missing: 2,922/24,999

Freq. Numeric Label:

1,493 1 None

3,333 2 1-4

5,269 3 5-8

4,741 4 9-12

3,045 5 13-16

2,146 6 17-20

2,050 7 21+

2,922 .

---

**HPW03**

Hours per Week: Advising and counseling of students

---

Type: numeric (double)

Range: [1,7]

Unique values: 7

Tabulation:

Missing: 2,944/24,999

Freq. Numeric Label:

1,899 1 None

12,491 2 1-4

5,347 3 5-8

1,499	4 9-12
454	5 13-16
175	6 17-20
190	7 21+
2,944	.

---

**HPW04** Hours per Week: Committee work and meetings

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 2,973/24,999

Tabulation:	Freq.	Numeric	Label:
	3,265	1	None
	11,566	2	1-4
	4,792	3	5-8
	1,490	4	9-12
	529	5	13-16
	206	6	17-20
	178	7	21+
	2,973	.	

---

**HPW05** Hours per Week: Other administration

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 3,333/24,999

Tabulation:	Freq.	Numeric	Label:
	7,165	1	None
	8,147	2	1-4
	2,730	3	5-8
	1,406	4	9-12
	766	5	13-16
	588	6	17-20
	864	7	21+
	3,333	.	

---

**HPW06** Hours per Week: Research and scholarly writing

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 3,059/24,999

Tabulation:	Freq.	Numeric	Label:
	5,213	1	None
	7,609	2	1-4
	3,819	3	5-8
	2,055	4	9-12
	1,055	5	13-16
	838	6	17-20
	1,351	7	21+
	3,059	.	

---

**HPW07** Hours per Week: Other creative products/performances

---

Type: numeric (double)

Range: [1,7]

Unique values: 7      Missing: 3,493/24,999

Tabulation:	Freq.	Numeric	Label:
	15,615	1	None
	3,644	2	1-4
	1,191	3	5-8
	495	4	9-12
	204	5	13-16
	153	6	17-20
	204	7	21+
	3,493	.	

---

**HPW08**                      Hours per Week: Community or public service

---

Type: numeric (double)

Range: [1,7]

Unique values: 7      Missing: 3,238/24,999

Tabulation:	Freq.	Numeric	Label:
	9,080	1	None
	9,668	2	1-4
	2,033	3	5-8
	589	4	9-12
	188	5	13-16
	95	6	17-20
	108	7	21+
	3,238	.	

---

**HPW09**                      Hours per Week: Outside consulting/freelance work

---

Type: numeric (double)

Range: [1,7]

Unique values: 7      Missing: 3,390/24,999

Tabulation:	Freq.	Numeric	Label:
	15,908	1	None
	4,011	2	1-4
	997	3	5-8
	371	4	9-12
	122	5	13-16
	80	6	17-20
	120	7	21+
	3,390	.	

---

**MNDHAB01**                      Habits of Mind: Ask questions in class

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 3,637/24,999

Tabulation:	Freq.	Numeric	Label:
	1,013	1	Not at All
	1,173	2	Occasionally
	19,176	3	Frequently

3,637 .

---

**MNDHAB03** Habits of Mind: Seek solutions to problems and explain them to others

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,770/24,999

Tabulation:	Freq.	Numeric	Label:
	1,562	1	Not at All
	5,648	2	Occasionally
	14,019	3	Frequently
	3,770	.	

---

**MNDHAB04** Habits of Mind: Revise their papers to improve their writing

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,727/24,999

Tabulation:	Freq.	Numeric	Label:
	3,406	1	Not at All
	6,797	2	Occasionally
	11,069	3	Frequently
	3,727	.	

---

**MNDHAB09** Habits of Mind: Explore topics on their own, even though it was not required for class

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,763/24,999

Tabulation:	Freq.	Numeric	Label:
	2,154	1	Not at All
	10,159	2	Occasionally
	8,923	3	Frequently
	3,763	.	

---

**MNDHAB11** Habits of Mind: Seek feedback on their academic work

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,813/24,999

Tabulation:	Freq.	Numeric	Label:
	1,615	1	Not at All
	6,078	2	Occasionally
	13,493	3	Frequently
	3,813	.	

---

**MNDHAB12** Habits of Mind: Work with other students on group projects

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,812/24,999

Tabulation:	Freq.	Numeric	Label:
	2,844	1	Not at All

6,604	2 Occasionally
11,739	3 Frequently
3,812	.

---

**CONSACT01** Activity: Use different points of view to make an argument

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,397/24,999

Tabulation:	Freq.	Numeric Label:
	1,841	1 Not at All
	7,418	2 Occasionally
	12,343	3 Frequently
	3,397	.

---

**CRSASSIGN01** Assignment: Engage deeply with a significant challenge or question within your discipline

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,040/24,999

Tabulation:	Freq.	Numeric Label:
	1,982	1 Not at All
	7,335	2 Occasionally
	11,642	3 Frequently
	4,040	.

---

**CRSASSIGN04** Assignment: Apply learning from both academic and field settings

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,078/24,999

Tabulation:	Freq.	Numeric Label:
	3,946	1 Not at All
	6,606	2 Occasionally
	10,369	3 Frequently
	4,078	.

---

**CRSASSIGN08** Assignment: Work with classmates outside of class

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,079/24,999

Tabulation:	Freq.	Numeric Label:
	2,817	1 Not at All
	7,675	2 Occasionally
	10,428	3 Frequently
	4,079	.

---

**CRSASSIGN09** Assignment: Lead a discussion, activity or lab

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,070/24,999

Tabulation:	Freq.	Numeric Label:
-------------	-------	----------------

3,586	1 Not at All
7,431	2 Occasionally
9,912	3 Frequently
4,070	.

---

**CRSASSIGN10** Assignment: Provide and/or receive feedback to classmates about a draft or work

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,047/24,999

Tabulation:	Freq.	Numeric Label:
	5,462	1 Not at All
	7,829	2 Occasionally
	7,661	3 Frequently
	4,047	.

---

**METHOD01** Method: Class discussions

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,361/24,999

Tabulation:	Freq.	Numeric Label:
	680	1 None
	2,535	2 Some
	3,644	3 Most
	13,779	4 All
	4,361	.

---

**METHOD02** Method: Cooperative learning (small groups)

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,418/24,999

Tabulation:	Freq.	Numeric Label:
	2,168	1 None
	5,632	2 Some
	5,311	3 Most
	7,470	4 All
	4,418	.

---

**METHOD03** Method: Experiential learning/Field studies

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,484/24,999

Tabulation:	Freq.	Numeric Label:
	7,548	1 None
	6,381	2 Some
	3,448	3 Most
	3,138	4 All
	4,484	.

---

**METHOD05** Method: Group projects

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,385/24,999

Tabulation:	Freq.	Numeric	Label
	3,519	1	None
	6,957	2	Some
	5,043	3	Most
	5,095	4	All
	4,385	.	

---

**METHOD06**      Method: Extensive lecturing

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,420/24,999

Tabulation:	Freq.	Numeric	Label:
	3,898	1	None
	7,126	2	Some
	5,574	3	Most
	3,981	4	All
	4,420	.	

---

**METHOD07**      Method: Multiple drafts of written work

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,427/24,999

Tabulation:	Freq.	Numeric	Label:
	4,944	1	None
	8,064	2	Some
	4,196	3	Most
	3,368	4	All
	4,427	.	

---

**METHOD08**      Method: Student-selected topics for course content

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,423/24,999

Tabulation:	Freq.	Numeric	Label:
	5,747	1	None
	8,785	2	Some
	3,317	3	Most
	2,727	4	All
	4,423	.	

---

**METHOD09**      Method: Reflective writing/journaling

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,432/24,999

Tabulation:	Freq.	Numeric	Label:
	7,552	1	None

6,617	2	Some
3,195	3	Most
3,203	4	All
4,432	.	

---

**METHOD10** Method: Community service as part of coursework

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,462/24,999

Tabulation:	Freq.	Numeric	Label:
	13,046	1	None
	5,262	2	Some
	1,370	3	Most
	859	4	All
	4,462	.	

---

**METHOD11** Method: Electronic quizzes with immediate feedback in class

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,463/24,999

Tabulation:	Freq.	Numeric	Label:
	14,307	1	None
	3,267	2	Some
	1,590	3	Most
	1,372	4	All
	4,463	.	

---

**METHOD12** Method: Using real-life problems

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,350/24,999

Tabulation:	Freq.	Numeric	Label:
	1,198	1	None
	3,543	2	Some
	4,924	3	Most
	10,984	4	All
	4,350	.	

---

**METHOD13** Method: Using student inquiry to drive learning

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,431/24,999

Tabulation:	Freq.	Numeric	Label:
	1,437	1	None
	6,074	2	Some
	6,017	3	Most
	7,040	4	All
	4,431	.	

---

**METHOD14** Method: “Learn before lecture” through multimedia tools (e.g., flipping the classroom)

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,916/24,999

Tabulation:	Freq.	Numeric	Label:
	8,637	1	None
	6,829	2	Some
	2,627	3	Most
	1,990	4	All
	4,916	.	

---

**METHOD15** Method: Readings on racial and ethnic issues

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,871/24,999

Tabulation:	Freq.	Numeric	Label:
	9,018	1	None
	5,569	2	Some
	2,770	3	Most
	2,771	4	All
	4,871	.	

---

**METHOD18** Method: Techniques to create an inclusive classroom environment for diverse students

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,844/24,999

Tabulation:	Freq.	Numeric	Label:
	3,161	1	None
	4,756	2	Some
	5,041	3	Most
	7,197	4	All
	4,844	.	

---

**METHOD20** Method: Student presentations

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 4,787/24,999

Tabulation:	Freq.	Numeric	Label:
	2,194	1	None
	6,333	2	Some
	5,516	3	Most
	6,169	4	All
	4,787	.	

---

**METHOD21** Method: Student evaluations of each others’ work

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,782/24,999  
 Tabulation:            Freq.            Numeric Label:  
                           6,165            1 None  
                           7,725            2 Some  
                           3,477            3 Most  
                           2,850            4 All  
                           4,782            .

**METHOD22**      Method: Grading on a curve

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,841/24,999

Tabulation:            Freq.            Numeric Label:  
                           12,122           1 None  
                           4,283            2 Some  
                           1,988            3 Most  
                           1,765            4 All  
                           4,841            .

**METHOD23**      Method: Rubric-based assessment

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 4,930/24,999

Tabulation:            Freq.            Numeric Label:  
                           3,744            1 None  
                           5,018            2 Some  
                           4,937            3 Most  
                           6,370            4 All  
                           4,930            .

**CRSASSESS01**      Assessment: Provide instructions clearly delineating what students are to do to complete

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 4,647/24,999

Tabulation:            Freq.            Numeric Label:  
                           291              1 Not at All  
                           1,588            2 Occasionally  
                           18,473          3 Frequently  
                           4,647            .

**CRSASSESS02**      Assessment: Explain what you want students to gain from the assignment

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 4,704/24,999

Tabulation:            Freq.            Numeric Label:  
                           430              1 Not at All  
                           3,958            2 Occasionally  
                           15,907          3 Frequently

4,704 .

---

**CRSASSESS03** Assessment: Provide feedback on drafts or work still in progress

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,707/24,999

Tabulation:	Freq.	Numeric Label:
	1,760	1 Not at All
	8,088	2 Occasionally
	10,444	3 Frequently
	4,707	.

---

**CRSASSESS04** Assessment: Provide in advance the criteria for evaluating the assignment

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,709/24,999

Tabulation:	Freq.	Numeric Label:
	772	1 Not at All
	4,219	2 Occasionally
	15,299	3 Frequently
	4,709	.

---

**CRSASSESS05** Assessment: Explicitly link the assignment with course goals or learning objectives

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,693/24,999

Tabulation:	Freq.	Numeric Label:
	1,014	1 Not at All
	5,393	2 Occasionally
	13,899	3 Frequently
	4,693	.

---

**CRSTECH01** Course Technology: YouTube or other videos

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,852/24,999

Tabulation:	Freq.	Numeric Label:
	2,745	1 Not at All
	9,743	2 Occasionally
	7,659	3 Frequently
	4,852	.

---

**CRSTECH02** Course Technology: Classroom enhancement technology (e.g., Elmo, tablet PCs)

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,940/24,999

Tabulation:	Freq.	Numeric Label:
-------------	-------	----------------

9,380	1 Not at All
6,000	2 Occasionally
4,679	3 Frequently
4,940	.

---

**CRSTECH03** Course Technology: Simulations/animations

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 4,908/24,999

Tabulation:	Freq.	Numeric Label:
	9,169	1 Not at All
	7,585	2 Occasionally
	3,337	3 Frequently
	4,908	.

---

**TCHOPN01** Opinion: It is primarily up to individual students whether they succeed in my courses

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 5,286/24,999

Tabulation:	Freq.	Numeric Label:
	348	1 Disagree Strongly
	2,052	2 Disagree Somewhat
	10,159	3 Agree Somewhat
	7,154	4 Agree Strongly
	5,286	.

---

**TCHOPN09** Opinion: Most students learn best when they do their assignments on their own

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 5,422/24,999

Tabulation:	Freq.	Numeric Label:
	1,140	1 Disagree Strongly
	7,937	2 Disagree Somewhat
	7,846	3 Agree Somewhat
	2,654	4 Agree Strongly
	5,422	.

---

**INSTOPN03** Inst Opinion: Most students are well-prepared academically

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 5,490/24,999

Tabulation:	Freq.	Numeric Label:
	1,460	1 Disagree Strongly
	5,721	2 Disagree Somewhat
	8,949	3 Agree Somewhat
	3,379	4 Agree Strongly
	5,490	.

---

**INSTOPN07** Inst Opinion: Faculty here are strongly interested in the academic problems of undergraduates

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 5,718/24,999

Tabulation:	Freq.	Numeric Label:
	283	1 Disagree Strongly
	1,815	2 Disagree Somewhat
	7,798	3 Agree Somewhat
	9,385	4 Agree Strongly
	5,718	.

---

**INSTOPN09** Inst Opinion: My research is valued by faculty in my department

---

Type: numeric (double)

label: INSTOPN09

Range: [1,4]

Unique values: 4 Missing: 6,332/24,999

Tabulation:	Freq.	Numeric Label:
	1,362	1 Disagree Strongly
	2,965	2 Disagree Somewhat
	8,031	3 Agree Somewhat
	6,309	4 Agree Strongly
	6,332	.

---

**INSTOPN10** Inst Opinion: My teaching is valued by faculty in my department

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 5,707/24,999

Tabulation:	Freq.	Numeric Label:
	693	1 Disagree Strongly
	1,563	2 Disagree Somewhat
	6,594	3 Agree Somewhat
	10,442	4 Agree Strongly
	5,707	.

---

**INSTOPN11** Inst Opinion: My service is valued by faculty in my department

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 5,752/24,999

Tabulation:	Freq.	Numeric Label:
	1,089	1 Disagree Strongly
	2,254	2 Disagree Somewhat
	7,327	3 Agree Somewhat
	8,577	4 Agree Strongly
	5,752	.

---

**RwrdrTCHInst** Description: Faculty are rewarded for being good teachers

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 6,370/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          4,774          1 Not Descriptive  
                          8,907          2 Somewhat Descriptive  
                          4,948          3 Very Descriptive  
                          6,370          .

**AFFACT01**          Affect: Feel that the training you received in graduate school prepared you well

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 6,154/24,999

Tabulation:          Freq.          Numeric Label:  
                          1,612          1 Not at All  
                          9,018          2 To Some Extent  
                          8,215          3 To a Great Extent  
                          6,154          .

**AFFACT07**          Affect: Structure your courses so that students master a conceptual understanding

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 6,296/24,999

Tabulation:          Freq.          Numeric Label:  
                          188            1 Not at All  
                          3,464          2 To Some Extent  
                          15,051        3 To a Great Extent  
                          6,296          .

**AFFACT08**          Affect: Structure your courses so that students develop study skills that prepare them for college-level work

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 6,441/24,999

Tabulation:          Freq.          Numeric Label:  
                          1,451          1 Not at All  
                          7,600          2 To Some Extent  
                          9,507          3 To a Great Extent  
                          6,441          .

**SATIS01**          Satisfaction: Salary

Type: numeric (double)

Range: [1,5]

Unique values: 5      Missing: 6,012/24,999

Tabulation:          Freq.          Numeric Label:  
                          65            1 Not Applicable  
                          4,485        2 Not Satisfied  
                          5,180        3 Marginally Satisfied  
                          7,121        4 Satisfied

2,136 5 Very Satisfied  
6,012 .

---

**SATIS04** Satisfaction: Opportunity for scholarly pursuits

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,116/24,999

Tabulation:	Freq.	Numeric Label:
	1,200	1 Not Applicable
	3,602	2 Not Satisfied
	4,865	3 Marginally Satisfied
	6,630	4 Satisfied
	2,586	5 Very Satisfied
	6,116	.

---

**SATIS05** Satisfaction: Teaching load

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,072/24,999

Tabulation:	Freq.	Numeric Label:
	389	1 Not Applicable
	3,421	2 Not Satisfied
	4,265	3 Marginally Satisfied
	8,012	4 Satisfied
	2,840	5 Very Satisfied
	6,072	.

---

**SATIS06** Satisfaction: Quality of students

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,054/24,999

Tabulation:	Freq.	Numeric Label:
	87	1 Not Applicable
	1,879	2 Not Satisfied
	4,635	3 Marginally Satisfied
	8,585	4 Satisfied
	3,759	5 Very Satisfied
	6,054	.

---

**SATIS11** Satisfaction: Job security

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,186/24,999

Tabulation:	Freq.	Numeric Label:
	348	1 Not Applicable
	2,175	2 Not Satisfied
	2,512	3 Marginally Satisfied
	6,418	4 Satisfied
	7,360	5 Very Satisfied

6,186 .

---

**SATIS13** Satisfaction: Course assignments

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,254/24,999

Tabulation:	Freq.	Numeric Label:
	380	1 Not Applicable
	694	2 Not Satisfied
	2,233	3 Marginally Satisfied
	8,795	4 Satisfied
	6,643	5 Very Satisfied
	6,254	.

---

**SATIS14** Satisfaction: Freedom to determine course content

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,254/24,999

Tabulation:	Freq.	Numeric Label:
	367	1 Not Applicable
	487	2 Not Satisfied
	1,107	3 Marginally Satisfied
	5,793	4 Satisfied
	10,991	5 Very Satisfied
	6,254	.

---

**SATIS16** Satisfaction: Prospects for career advancement

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,314/24,999

Tabulation:	Freq.	Numeric Label:
	1,874	1 Not Applicable
	3,457	2 Not Satisfied
	4,378	3 Marginally Satisfied
	6,622	4 Satisfied
	2,354	5 Very Satisfied
	6,314	.

---

**SATIS18** Satisfaction: Overall job satisfaction

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,245/24,999

Tabulation:	Freq.	Numeric Label:
	27	1 Not Applicable
	1,050	2 Not Satisfied
	3,377	3 Marginally Satisfied
	9,211	4 Satisfied
	5,089	5 Very Satisfied
	6,245	.

<b>STRESS13</b>	Stress: Teaching load	
Type: numeric (double)		
Range: [1,4]		
Unique values: 4	Missing: 6,273/24,999	
Tabulation:	Freq.	Numeric Label:
	492	1 Not Applicable
	7,270	2 Not at All
	7,937	3 Somewhat
	3,027	4 Extensive
	6,273	.
<b>FacUnion</b>	Act: Are you a member of a faculty union?	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,197/24,999	
Tabulation:	Freq.	Numeric Label:
	16,575	1 No
	2,227	1 Yes
	6,197	.
<b>USCTZN</b>	Act: Are you a U.S. citizen?	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,184/24,999	
Tabulation:	Freq.	Numeric Label:
	1,157	1 No
	17,658	1 Yes
	6,184	.
<b>RtrIn3</b>	Act: Do you plan to retire within the next three years?	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,262/24,999	
Tabulation:	Freq.	Numeric Label:
	16,547	1 No
	2,190	1 Yes
	6,262	.
<b>TCHAWRD</b>	Act: Have you ever received an award for outstanding teaching?	
Type: numeric (double)		
Range: [0,1]		
Tabulation:	Freq.	Numeric Label:
	11,376	1 No
	7,460	1 Yes
	6,163	.
<b>SALARY</b>	Please enter your base institutional salary (e.g., for \$56,000, please enter 56000)	
Type: numeric (double)		
Range: [0,1850000] Units: .1		

Unique values: 1,348 Missing: 9,127/24,999

Mean: 80330

Std. Dev.: 47547.7

Percentiles:	10%	5%	50%	75%	90%
	49000	58000	72000	93000	120000

---

**SALARYBASE** Your base institutional salary reported above is based on:

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 8,940/24,999

Tabulation:	Freq.	Numeric	Label:
	781	1	Less than 9 months
	10,598	2	9/10 months
	4,680	3	11/12 months
	8,940	.	

---

**DEGEARN** Highest Degree Earned

---

Type: numeric (double)

Range: [1,11]

Unique values: 11 Missing: 6,331/24,999

Examples:	8	Ed.D.
	9	Ph.D.
	.	

---

**WHITECAUC** White/Caucasian

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 6,656/24,999

Tabulation:	Freq.	Numeric	Label:
	2,308	0	Not Marked
	16,035	1	Marked
	6,656	.	

---

**AFAMBLACK** African American/Black

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 6,656/24,999

Tabulation:	Freq.	Numeric	Label:
	17,823	0	Not Marked
	520	1	Marked
	6,656	.	

---

**AMINALSNAT** American Indian/Alaska Native

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 6,656/24,999

Tabulation:	Freq.	Numeric	Label:
	18,105	0	Not Marked
	238	1	Marked

	6,656	.
<b>ASNAMASN</b>	Asian American/Asian	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,656/24,999	
Tabulation:	Freq.	Numeric Label:
	17,372	0 Not Marked
	971	1 Marked
	6,656	.
<b>NATHAWPACIS</b>	Native Hawaiian/Pacific Islander	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,656/24,999	
Tabulation:	Freq.	Numeric Label:
	18,284	0 Not Marked
	59	1 Marked
	6,656	.
<b>MEXAMCHIC</b>	Mexican American/Chicano	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,656/24,999	
Tabulation:	Freq.	Numeric Label:
	18,100	0 Not Marked
	243	1 Marked
	6,656	.
<b>PUERTRIC</b>	Puerto Rican	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,656/24,999	
Tabulation:	Freq.	Numeric Label:
	18,247	0 Not Marked
	96	1 Marked
	6,656	.
<b>OTHERLTNO</b>	Other Latino	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,656/24,999	
Tabulation:	Freq.	Numeric Label:
	17,938	0 Not Marked
	405	1 Marked
	6,656	.
<b>OTHERRACE</b>	Other	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 6,656/24,999	

Tabulation:	Freq.	Numeric Label:
	17,818	0 Not Marked
	525	1 Marked
	6,656	.

---

**NATENGSP** Is English your native language?

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 6,420/24,999

Tabulation:	Freq.	Numeric Label:
	1,931	1 No
	16,648	1 Yes
	6,420	.

---

**MARITAL** Are you currently: (Mark one)

---

Type: numeric (double)

Range: [1,8]

Unique values: 8 Missing: 6,519/24,999

Tabulation:	Freq.	Numeric Label:
	2,060	1 Single
	44	2 In a civil union
	384	3 In a domestic partnership
	14,220	4 Married
	438	5 Unmarried, living with partner
	172	6 Separated
	942	7 Divorced
	220	8 Widowed
	6,519	.

---

**NCHILD1** Child: Under 18 years old

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 7,613/24,999

Tabulation:	Freq.	Numeric Label:
	10,289	1 0
	2,832	2 1
	2,962	3 2
	861	4 3
	442	5 4+
	7,613	.

---

**NCHILD2** Child: 18 years or older

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 7,372/24,999

Tabulation:	Freq.	Numeric Label:
	9,764	1 0
	2,117	2 1
	3,357	3 2

1,409      4 3  
 980        5 4+  
 7,372      .

---

**YRBIRTH**      Please enter the four-digit year of your birth (e.g., 1944, 1988).

---

Type: numeric (double)  
 Range: [0,1181976]  
 Unique values: 85    Missing: 7,023/24,999  
 Mean: 2030.02  
 Std. Dev.: 8802.71  
 Percentiles:      10%            25%            50%            75%            90%  
                          1948            1954            1962            1972            1978

---

**SALARY09**      Aggregated - Salary based on 9/10 months (full-time employees only)

---

Type: numeric (double)  
 Range: [1,12]  
 Unique values: 12    Missing: 14,695/24,999

---

**SALARY12**      Aggregated - Salary based on 11/12 months (full-time employees only)

---

Type: numeric (double)  
 Range: [1,12]  
 Unique values: 12    Missing: 20,480/24,999

---

**AGE**              Aggregated Age

---

Type: numeric (double)  
 Range: [1,10]  
 Unique values: 10    Missing: 7,070/24,999  
 Examples:            4    1966 - 1970  
                          6    1956 - 1960  
                          8    1946 - 1950

---

**YR1STAPPOINTA**    Aggregated - Year of first academic appointment

---

Type: numeric (double)  
 Range: [1,9]  
 Unique values: 9      Missing: 3,172/24,999  
 Tabulation:            Freq.            Numeric Label:  
                          1,498            1 1973 or less  
                          1,332            2 1974 - 1978  
                          1,657            3 1979 - 1983  
                          2,314            4 1984 - 1988  
                          2,653            5 1989 - 1993  
                          3,576            6 1994 - 1998  
                          3,988            7 1999 - 2003  
                          4,454            8 2004 - 2008  
                          355              9 2009 or more  
                          3,172            .

---

**YRAPPOINTA**      Aggregated - Year of appointment at present institution

---

Type: numeric (double)  
 Range: [1,9]

Unique values: 9      Missing: 6,939/24,999  
 Tabulation:      Freq.      Numeric Label:  
                     532            1 1973 or less  
                     652            2 1974 - 1978  
                     962            3 1979 - 1983  
                     1,615        4 1984 - 1988  
                     1,828        5 1989 - 1993  
                     2,979        6 1994 - 1998  
                     3,698        7 1999 - 2003  
                     4,976        8 2004 - 2008  
                     818            9 2009 or more  
                     6,939            .

**YRTENUREA**      Aggregated - If tenured, year tenure was awarded

Type: numeric (double)

Range: [1,9]

Unique values: 9      Missing: 18,489/24,999

Tabulation:      Freq.      Numeric Label:  
                     152            1 1973 or less  
                     201            2 1974 - 1978  
                     394            3 1979 - 1983  
                     527            4 1984 - 1988  
                     813            5 1989 - 1993  
                     1,036        6 1994 - 1998  
                     1,322        7 1999 - 2003  
                     1,635        8 2004 - 2008  
                     430            9 2009 or more  
                     18,489        .

**MAJORA**      Aggregated Major

Type: numeric (double)

Range: [1,15]

Unique values: 15      Missing: 6,450/24,999

Examples:      5    Engineering (General Area=11)  
                     9    Humanities (General Area=14,24)  
                     13   Social Sciences (General Area=3,26,27 and Specific Discipline  
                     .

**DEPTA**      Aggregated Department

Type: numeric (double)

Range: [1,15]

Unique values: 15      Missing: 6,574/24,999

Examples:      6    English (General Area=12)  
                     9    Humanities (General Area=14,24)  
                     13   Social Sciences (General Area=3,26,27 and Specific Discipline

**STEM**      Faculty works in STEM department

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 10,890/24,999  
 Tabulation:          Freq.          Value  
                          10,879          0 No  
                          3,230          1 Yes  
                          10,890          .

**FTUGFAC**                  Full-time Undergraduate Faculty

Type: numeric (double)  
 Label:: RESTYPE1  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          7,854          0 No  
                          17,145        1 Yes

**PTUGFac**                  Part-time Undergraduate Faculty

Type: numeric (double)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          21,936        0 No  
                          3,063          1 Yes

**FTADMIN**                Full-time Administrator

Type: numeric (double)  
 Label:: RESTYPE3  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          19,730        0 No  
                          5,269          1 Yes

**GRADONLYFAC**        Graduate-only Faculty

Type: numeric (double)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          22,168        0 No  
                          2,831          1 Yes

**OTHERSTAFF**            Other Staff

Type: numeric (double)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          22,820        0 No  
                          2,179          1 Yes

**FACWGT**                Faculty Weight

Type: numeric (double)  
 Range: [2.0609695,1591.9112]      .000e-09

Unique values: 2,061 Missing: 8,887/24,999

Mean: 27.2225

Std. Dev.: 48.2382

Percentiles:	10%	25%	50%	75%	90%
	5.04691	8.58416	15.6225	1.0783	47.3227

---

**STRAT** CIRP Stratification Cell

---

Type: numeric (double)

Range: [1,41]

Unique values: 28 Missing: 78/24,999

Examples:

4	Private Universities - medium
7	Public 4yr Colleges - low
13	Private/Nonsectarian 4yr Colleges - high
21	Other Religious 4yr Colleges - low

---

**STATE** Institution's state

---

Type: string (str2)

Unique values: 44 Missing "": 0/24,999

Examples:

"GA"
"MI"
"OH"
"SC"

---

**HERIREG** HERI Region

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 985/24,999

Tabulation:

Freq.	Numeric Label:
6,632	1 East
7,257	2 Midwest
2,372	3 South
7,753	4 West
985	.

---

**OBEREG** OBE Region

---

Type: numeric (double)

Range: [1,8]

Unique values: 8 Missing: 968/24,999

Tabulation:

Freq.	Numeric Label:
1,857	1 New England - CT ME MA NH RI VT
4,792	2 Mid East - DE DC MD NJ NY PA
5,459	3 Great Lakes - IL IN MI OH WI
1,798	4 Plains - IA KS MN MO NE ND SD
2,372	5 Southeast - AL AR FL GA KY LA MS NC SC TN VA WV
1,712	6 Southwest - AZ NM OK TX
2,445	7 Rocky Mountains - CO ID MT UT WY
3,596	8 Far West - AK CA HI NV OR WA
968	.

---

**SATIS\_WORKPLACE** Workplace Satisfaction

---

Type: numeric (double)

Range: [13.41,64.73] Units: .01

Unique values: 1,067 Missing: 5,955/24,999

Mean: 50.0005

Std. Dev.: 8.94763

Percentiles:	10%	25%	50%	75%	90%
	38.18	44.3	48.97	57.2	64.73

---

**STRESS** Career Related Stress

---

Type: numeric (double)

Range: [11.21,75.77] Units: .01

Unique values: 2,618 Missing: 6,081/24,999

Mean: 50.0004

Std. Dev.: 8.77066

Percentiles:	10%	25%	50%	75%	90%
	38.65	44.52	50.65	55.61	60.82

---

**SATIS\_WORKPLACE\_GRP** Workplace Satisfaction Group

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 5,955/24,999

Tabulation:	Freq.	Numeric Label:
	5,270	1 Low Score
	7,943	2 Average Score
	5,831	3 High Score
	5,955	.

---

**STRESS\_GRP** Career Related Stress Group

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 6,081/24,999

Tabulation:	Freq.	Numeric Label:
	5,046	1 Low Score
	8,399	2 Average Score
	5,473	3 High Score
	6,081	.

---

**ACERECODE** Recoded College I.D.

---

Type: numeric (double)

Range: [3,3155]

Unique values: 293 Missing: 45/24,999

Mean: 1598.34

Std. Dev.: 993.543

Percentiles:	10%	25%	50%	75%	90%
	364	747	1353	2696	2890

---

**HBCU** Historically Black College or University

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 743/24,999  
 Tabulation:          Freq.          Numeric Label:  
                          156                1 Yes  
                          24,100          2 No  
                          743                .

**CONTROLA**            (unlabeled)

Type: string (str7)

Unique values: 3      Missing "": 0/24,999

Tabulation:          Freq.          Value  
                          743                ""  
                          14,903          "PRIVATE"  
                          9,353             "PUBLIC"

**CCBASIC**            Carnegie Classification 2010: Basic

Type: numeric (double)

Range: [2,26]

Unique values: 12      Missing: 743/24,999

Examples:            16    Research Universities (high research activity)  
                          18    Master's Colleges and Universities (larger programs)  
                          21    Baccalaureate Colleges--Arts & Sciences

**SELECTIVITY**      (unlabeled)

Type: numeric (double)

Range: [0,1525]

Unique values: 126      Missing: 799/24,999

Mean: 1129.77

Std. Dev.: 208.336

Percentiles:	10%	25%	50%	75%	90%
	965	1042	1150	1260	1334

**TUITANDFEESPrv** Tuition and fees - Total (F1314\_F2\_RV)

Type: numeric (double)

Range: [5175,1.162e+09]

Unique values: 201      Missing: 9,924/24,999

Mean: 1.2e+08

Std. Dev.: 1.6e+08

Percentiles:	10%	25%	50%	75%	90%
	2.5e+07	3.7e+07	6.3e+07	1.8e+08	2.3e+08

**NetTotRevPrv**      Net total revenues after assets released from restriction - Total  
 (F1314\_F2\_RV)

Type: numeric (double)

Range: [4410386,4.767e+09]

Unique values: 201      Missing: 9,924/24,999

Mean: 3.5e+08

Std. Dev.: 5.0e+08

Percentiles:	10%	25%	50%	75%	90%
	4.6e+07	8.2e+07	1.5e+08	3.2e+08	1.1e+09

<b>ExpInstrtPrv</b>	Instruction-Total amount (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[1809898,1.636e+09]				
Unique values:	201 Missing: 9,924/24,999				
Mean:	1.0e+08				
Std. Dev.:	1.6e+08				
Percentiles:	10%	25%	50%	75%	90%
	1.4e+07	2.4e+07	4.2e+07	1.1e+08	3.6e+08
<b>ExpResrchPrv</b>	Research-Total amount (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[0,3.465e+08]				
Unique values:	103 Missing: 9,924/24,999				
Mean:	1.5e+07				
Std. Dev.:	3.9e+07				
Percentiles:	10%	25%	50%	75%	90%
	0	0	854019	4.8e+06	4.4e+07
<b>ExpPubSrvPrv</b>	Public service-Total amount (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[0,64647000]				
Unique values:	99 Missing: 9,924/24,999				
Mean:	5.3e+06				
Std. Dev.:	1.2e+07				
Percentiles:	10%	25%	50%	75%	90%
	0	0	503343	2.7e+06	1.5e+07
<b>ExpAcSupPrv</b>	Academic support-Total amount (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[354135,5.355e+08]				
Unique values:	201 Missing: 9,924/24,999				
Mean:	3.2e+07				
Std. Dev.:	7.2e+07				
Percentiles:	10%	25%	50%	75%	90%
	3.0e+06	5.0e+06	9.6e+06	3.0e+07	6.1e+07
<b>ExpStdSrvPrv</b>	Student service-Total amount (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[7987,2.744e+08]				
Unique values:	201 Missing: 9,924/24,999				
Mean:	2.4e+07				
Std. Dev.:	2.6e+07				
Percentiles:	10%	25%	50%	75%	90%
	7.1e+06	9.9e+06	1.5e+07	3.0e+07	4.7e+07
<b>ExpInstSupPrv</b>	Institutional support-Total amount (F1314_F2_RV)				

Type: numeric (double)  
Range: [653479,4.434e+08]

Unique values: 201 Missing: 9,924/24,999

Mean: 3.4e+07

Std. Dev.: 4.0e+07

Percentiles:	10%	25%	50%	75%	90%
	7.4e+06	1.1e+07	1.7e+07	4.1e+07	9.5e+07

---

**ExpTotPrv** Total expenses-Total amount (F1314\_F2\_RV)

---

Type: numeric (double)

Range: [3026387,3.683e+09]

Unique values: 201 Missing: 9,924/24,999

Mean: 2.6e+08

Std. Dev.: 3.9e+08

Percentiles:	10%	25%	50%	75%	90%
	4.0e+07	6.6e+07	1.1e+08	2.4e+08	9.3e+08

---

**NetGrntAidPrv** Net grant aid to students-Total amount (F1314\_F2\_RV)

---

Type: numeric (double)

Range: [0,14964873]

Unique values: 24 Missing: 9,924/24,999

Mean: 593297

Std. Dev.: 2.2e+06

Percentiles:	10%	25%	0%	75%	90%
	0	0	0	0	1.6e+06

---

**EndowValuPrv** Value of endowment assets at the end of the fiscal year (F1314\_F2\_RV)

---

Type: numeric (double)

Range: [692412,6.539e+09]

Unique values: 196 Missing: 10,290/24,999

Mean: 4.3e+08

Std. Dev.: 5.9e+08

Percentiles:	10%	25%	50%	75%	90%
	1.8e+07	5.8e+07	1.7e+08	6.6e+08	1.5e+09

---

**TUITANDFEESPub** Tuition and fees after deducting discounts and allowances (F1314\_F1A\_RV)

---

Type: numeric (double)

Range: [4051000,7.762e+08]

Unique values: 88 Missing: 15,683/24,999

Mean: 2.4e+08

Std. Dev.: 2.3e+08

Percentiles:	10%	25%	50%	75%	90%
	3.1e+07	6.8e+07	1.5e+08	3.0e+08	6.5e+08

---

**TotAllRevPub** Total all revenues and other additions (F1314\_F1A\_RV)

---

Type: numeric (double)

Range: [18561000,6.121e+09]

Unique values: 88 Missing: 15,683/24,999

Mean: 1.2e+09

Std. Dev.: 1.9e+09

Percentiles:	10%	25%	50%	75%	90%
	1.1e+08	1.9e+08	4.1e+08	9.1e+08	6.1e+09

---

**TotOpRevPub** Total operating revenues (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [9118000,4.930e+09]  
Unique values: 88 Missing: 15,683/24,999  
Mean: 8.8e+08  
Std. Dev.: 1.5e+09

Percentiles:	10%	25%	50%	75%	90%
	5.6e+07	1.0e+08	2.3e+08	6.0e+08	4.9e+09

---

**ExpInstructPub** Instruction - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [7561000,1.680e+09]  
Unique values: 88 Missing: 15,683/24,999  
Mean: 3.5e+08  
Std. Dev.: 5.0e+08

Percentiles:	10%	25%	50%	75%	90%
	4.7e+07	8.4e+07	1.3e+08	2.8e+08	1.7e+09

---

**ExpResrchPub** Research - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [0,7.954e+08]  
Unique values: 87 Missing: 15,683/24,999  
Mean: 1.5e+08  
Std. Dev.: 2.5e+08

Percentiles:	10%	25%	50%	75%	90%
	256613	981144	9.7e+06	1.6e+08	8.0e+08

---

**ExpPubSrvPub** Public service - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [0,2.426e+08]  
Unique values: 86 Missing: 15,683/24,999  
Mean: 4.5e+07  
Std. Dev.: 6.4e+07

Percentiles:	10%	25%	50%	75%	90%
	928323	2.4e+06	1.4e+07	6.4e+07	1.2e+08

---

**ExpAcSupPub** Academic support - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [2216000,6.070e+08]  
Unique values: 88 Missing: 15,683/24,999  
Mean: 1.1e+08  
Std. Dev.: 1.8e+08

Percentiles:	10%	25%	50%	75%	90%
	1.1e+07	1.6e+07	3.7e+07	9.2e+07	6.1e+08

---

**ExpStdSrvPub** Student services - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [3012607,1.452e+08]

Unique values: 88    Missing: 15,683/24,999  
 Mean: 4.1e+07  
 Std. Dev.: 4.0e+07  
 Percentiles:        10%            25%            50%            75%            90%  
                          9.6e+06        1.6e+07        2.9e+07        4.2e+07        1.5e+08

---

**ExpInstSupPub**        Institutional support - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
 Range: [2514000,2.985e+08]  
 Unique values: 88    Missing: 15,683/24,999  
 Mean: 6.0e+07  
 Std. Dev.: 6.7e+07  
 Percentiles:        10%            25%            50%            75%            90%  
                          1.1e+07        2.2e+07        3.7e+07        4.5e+07        2.2e+08

---

**ExpSchFshpPub**        Scholarships and fellowships expenses -- Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
 Range: [155336,1.041e+08]  
 Unique values: 88    Missing: 15,683/24,999  
 Mean: 2.4e+07  
 Std. Dev.: 1.8e+07  
 Percentiles:        10%            25%            50%            75%            90%  
                          6.3e+06        1.1e+07        2.1e+07        3.0e+07        4.0e+07

---

**ExpTotPub**            Total expenses deductions - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
 Range: [20380000,5.859e+09]  
 Unique values: 88    Missing: 15,683/24,999  
 Mean: 1.1e+09  
 Std. Dev.: 1.8e+09  
 Percentiles:        10%            25%            50%            75%            90%  
                          1.0e+08        1.8e+08        3.7e+08        8.7e+08        5.9e+09

---

**EndowValuPub**        Value of endowment assets at the end of the fiscal year (F1314\_F1A\_RV)

---

Type: numeric (double)  
 Range: [339445,3.595e+09]  
 Unique values: 87    Missing: 15,746/24,999  
 Mean: 6.0e+08  
 Std. Dev.: 7.9e+08  
 Percentiles:        10%            25%            50%            75%            90%  
                          1.5e+07        3.2e+07        1.1e+08        9.7e+08        1.6e+09

---

**RELAFFIL**            Religious affiliation (IC2013)

---

Type: numeric (double)  
 Label: RELAFFIL  
 Range: [-2,103]  
 Unique values: 30    Missing: 608/24,999  
 Examples:            -2    Not applicable  
                          30    Roman Catholic

61 Christian Church (Disciples of Christ)

---

**HRTOTLT** Grand total (S2013\_IS\_RV All instructional staff)

---

Type: numeric (double)  
 Range: [12,3499]  
 Unique values: 227 Missing: 652/24,999  
 Mean: 635.735  
 Std. Dev.: 749.198  
 Percentiles:      10%            25%            50%            75%            90%  
                          106            174            331            843            1236

---

**HRTOTLM** Grand total men (S2013\_IS\_RV All instructional staff)

---

Type: numeric (double)  
 Range: [6,2196]  
 Unique values: 184 Missing: 652/24,999  
 Mean: 389.871  
 Std. Dev.: 492.227  
 Percentiles:      10%            25%            50%            75%            90%  
                          54            92            71            478            983

---

**HRTOTLW** Grand total women (S2013\_IS\_RV All instructional staff)

---

Type: numeric (double)  
 Range: [2,1303]  
 Unique values: 181 Missing: 652/24,999  
 Mean: 245.864  
 Std. Dev.: 265.296  
 Percentiles:      10%            25%            50%            75%            90%  
                          50            84            162            261            508

---

**CONTROL** Control of institution (HD2013)

---

Type: numeric (double)  
 Range: [0,1]  
 Unique values: 2 Missing: 608/24,999  
 Tabulation:      Freq.            Numeric Label:  
                          9,316            1 Public  
                          15,075          2 Private not-for-profit  
                          608            .

---

**ICLEVEL** Level of institution (HD2013)

---

Type: numeric (double)  
 Range: [1,1]  
 Unique values: 1 Missing: 608/24,999  
 Tabulation:      Freq.            Numeric Label:  
                          24,391          1 Four or more years  
                          608            .

---

**LOCALE** Degree of urbanization (Urban-centric locale) (HD2013)

---

Type: numeric (double)  
 Range: [11,42]  
 Unique values: 11 Missing: 608/24,999  
 Examples:      11 City: Large

- 13 City: Small
- 21 Suburb: Large
- 31 Town: Fringe

---

**INSTSIZE** Institution size category (HD2013)

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 608/24,999

Tabulation:	Freq.	Numeric	Label
	265	1	Under 1,000
	9,764	2	1,000 - 4,999
	4,478	3	5,000 - 9,999
	3,449	4	10,000 - 19,999
	6,435	5	20,000 and above
	608	.	

---

**DVIC01** Percent admitted - total (DRVIC2013\_RV)

---

Type: numeric (double)

Range: [9,97]

Unique values: 69 Missing: 1,484/24,999

Mean: 60.0794

Std. Dev.: 19.0495

Percentiles:	10%	25%	50%	75%	90%
	32	49	64	75	83

---

**DVIC04** Admissions yield - total (DRVIC2013\_RV)

---

Type: numeric (double)

Range: [8,85]

Unique values: 52 Missing: 1,484/24,999

Mean: 32.6737

Std. Dev.: 14.4967

Percentiles:	10%	25%	50%	75%	90%
	18	23	31	37	47

---

**EFUGFT** Full-time undergraduate enrollment (DRVEF2013\_RV)

---

Type: numeric (double)

Range: [0,40020]

Unique values: 282 Missing: 608/24,999

Mean: 8689.57

Std. Dev.: 8951.19

Percentiles:	10%	25%	50%	75%	90%
	1515	2181	5068	13204	25084

---

**EFGRADFT** Full-time graduate enrollment (DRVEF2013\_RV)

---

Type: numeric (double)

Range: [0,18166]

Unique values: 209 Missing: 608/24,999

Mean: 1699.85

Std. Dev.: 2817.72

Percentiles:	10%	25%	50%	75%	90%
	0	66	515	2030	4753

---

**EFUGPT** Part-time undergraduate enrollment (DRVEF2013\_RV)

---

Type: numeric (double)

Range: [0,20883]

Unique values: 244 Missing: 608/24,999

Mean: 1317.19

Std. Dev.: 2394.88

Percentiles:	10%	25%	50%	75%	90%
	22	76	436	1684	3147

---

**EFGRADPT** Part-time graduate enrollment (DRVEF2013\_RV)

---

Type: numeric (double)

Range: [0,5132]

Unique values: 218 Missing: 608/24,999

Mean: 913.064

Std. Dev.: 981.599

Percentiles:	10%	25%	50%	75%	90%
	0	76	499	1459	2145

---

**ENRTOT** Total enrollment (DRVEF2013\_RV)

---

Type: numeric (double)

Range: [344,57466]

Unique values: 282 Missing: 608/24,999

Mean: 12619.7

Std. Dev.: 12783

Percentiles:	10%	25%	50%	75%	90%
	2022	2912	7260	20053	31123

---

**EnrFt** Full-time enrollment (DRVEF2013\_RV)

---

Type: numeric (double)

Range: [281,50012]

Unique values: 280 Missing: 608/24,999

Mean: 10389.4

Std. Dev.: 11245.4

Percentiles:	10%	25%	50%	75%	90%
	1588	2410	5452	15755	27114

---

**EnrPt** Part-time enrollment (DRVEF2013\_RV)

---

Type: numeric (double)

Range: [0,20883]

Unique values: 265 Missing: 608/24,999

Mean: 2230.26

Std. Dev.: 2822.63

Percentiles:	10%	25%	50%	75%	90%
	44	253	1166	2975	6041

---

**SFTETOTL** Total FTE staff (DRVHR2013\_RV)

---

Type: numeric (double)

Range: [27,26749]

Unique values: 260 Missing: 608/24,999

Mean: 2613.25

Std. Dev.: 3977.93

Percentiles:	10%	25%	50%	75%	90%
	368	579	1135	2559	5433

---

**SFTEINST** Instructional FTE (DRVHR2013\_RV)

---

Type: numeric (double)

Range: [22,4012]

Unique values: 234 Missing: 608/24,999

Mean: 733.436

Std. Dev.: 818.518

Percentiles:	10%	25%	50%	75%	90%
	149	213	424	922	1402

---

**SFTERSRC** Research FTE (DRVHR2013\_RV)

---

Type: numeric (double)

Range: [0,1339]

Unique values: 46 Missing: 608/24,999

Mean: 83.397

Std. Dev.: 244.911

Percentiles:	10%	25%	50%	75%	90%
	0	0	0	32	322

APPENDIX D

CORRECTED AND IMPUTED DESCRIPTIVE STATISTICS

<b>SUBJID</b>	(unlabeled)					
Type:	numeric (double)					
Range:	[600003,625001]					
Unique values:	24,999	Missing: 0/24,462				
Mean:	612502					
Std. Dev.:	7216.73					
Percentiles:	10%	25%	50%	75%	90%	
	602502	606252	612502	618752	622502	
<b>YR1STAPPOINT</b>	Year of 1st Appointment: Year you received your first academic appointment					
Type:	numeric (double)					
Range:	[1947,2014]					
Unique values:	62	Missing: 0/24,462				
Mean:	1996.93					
Std. Dev.:	12.2051					
Percentiles:	10%	25%	50%	75%	90%	
	1979	1989	1999	2007	2	011
<b>YRAPPOINT</b>	Year Appointed: Year of academic appointment at present institution					
Type:	numeric (double)					
Range:	[1920,2014]					
Unique values:	61	Missing: 0/24,462				
Mean:	2002.08					
Std. Dev.:	11.0761					
Percentiles:	10%	25%	50%	75%	90%	
	1986	1996	2005	2011	2014	
<b>ACADRANK</b>	What is your present academic rank?					
Type:	numeric (double)					
Range:	[1,5]					
Unique values:	5	Missing: 0/24,462				
Tabulation:	Freq.	Numeric Label:				
	2,266	1 Instructor				
	1,368	2 Lecturer				
	4,967	3 Assistant Professor				
	6,430	4 Associate Professor				
	9,431	5 Professor				
<b>ADJUNCT</b>	Are you an adjunct faculty member at this institution?					
Type:	numeric (double)					
Range:	[0,1]					
Unique values:	2	Missing: 0/24,462				
Tabulation:	Freq.	Numeric Label:				
	21,292	0 No				
	3,170	1 Yes				
<b>TENURE</b>	What is your tenure status at this institution?					
Type:	numeric (double)					
Range:	[1,4]					

Unique values: 4      Missing: 0/24,462  
 Tabulation:      Freq.      Numeric Label:  
                     900            1 Institution has no tenure system  
                     5,765        2 Not on tenure track, but institution has tenure system  
                     3,569        3 On tenure track, but not tenured  
                     14,228      4 Tenured

**YRTENURE**      Please enter the four-digit year you received tenure (e.g., 1974, 2001).

Type: numeric (double)

Range: [1960,2014]

Unique values: 53      Missing: 0/24,462

Mean: 1996.26

Std. Dev.: 11.3985

Percentiles:	10%	25%	50%	75%	90%
	1980	1988	1997	2006	2010

**SEX**              Your sex:

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	12,647	0 Male
	11,815	1 Female
	537	.

**FULLSTAT**      Are you considered a full-time employee of your institution for at least nine months?

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	3,932	0 No
	20,530	1 Yes

**PTCHOICE**      If given the choice, I would prefer to work full-time at this institution.

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 21,304/24,462

Tabulation:	Freq.	Numeric Label:
	1,302	0 No
	1,856	1 Yes
	21,304	.

**PTWORKFT**      Have you ever sought a full-time teaching position at this or another institution?

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	1,512	0 No

22,950 1 Yes

---

**PTTSEEK** How long ago did you pursue a full-time position?

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	420	1 Currently seeking a position
	3,033	2 Within the last year
	896	3 1 to 2 years ago
	1,560	4 3 to 5 years ago
	18,553	5 More than 5 years ago

---

**PRINACT** What is your principal activity in your current position at this institution?

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	2,181	1 Administration
	19,650	2 Teaching
	2,046	3 Research
	249	4 Services to clients and patients
	336	5 Other

---

**IMPTRSCH** Importance: Research

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	1,599	1 Not important
	5,485	2 Somewhat important
	8,007	3 Very important
	9,371	4 Essential

---

**IMPTTCH** Importance: Teaching

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	35	1 Not important
	529	2 Somewhat important
	5,376	3 Very important
	18,522	4 Essential

---

**IMPTRSRV** Importance: Service

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	945	1 Not important

7,185	2 Somewhat important
11,146	3 Very important
5,186	4 Essential

---

**COURSENUM** How many courses are you teaching this term (include all institutions at which you teach)?

---

Type: numeric (double)

Range: [0,20] Units: .01

Unique values: 28 Missing: 0/24,462

Mean: 2.49033

Std. Dev.: 1.54073

Percentiles:	10%	25%	50%	75%	90%
	1	1	2	3	4

---

**CRSTYPES01** Course Type: General education courses

---

Type: numeric (double)

Range: [0,12] Units: .01

Unique values: 14 Missing: 0/24,462

Mean: .591461

Std. Dev.: 1.01807

Percentiles:	10%	25%	50%	75%	90%
	0	0	0	1	2

---

**CRSTYPES02** Course Type: Course required for an undergraduate major

---

Type: numeric (double)

Range: [0,140] Units: .01

Unique values: 24 Missing: 0/24,462

Mean: 1.41842

Std. Dev.: 1.6681

Percentiles:	10%	25%	50%	75%	90%
	0	0	1	2	3

---

**CRSTYPES03** Course Type: Other undergraduate credit course

---

Type: numeric (double)

Range: [0,99] Units: .1

Unique values: 19 Missing: 4,954/24,462

Mean: .498693

Std. Dev.: 1.1538

Percentiles:	10%	25%	50%	75%	90%
	0	0	0	1	2

---

**CRSTYPES04** Course Type: Developmental/remedial course (not for credit)

---

Type: numeric (double)

Range: [0,6] Units: .1

Unique values: 8 Missing: 0/24,462

Tabulation:	Freq.	Value
	24,186	0
	1	.4
	154	1
	69	2

32	3
16	4
2	5
2	6

---

**CRSTYPES05** Course Type: Non-credit course (other than above)

---

Type: numeric (double)

Range: [0,11]

Unique values: 7 Missing: 0/24,462

Tabulation:

Freq.	Value
24,014	0
348	1
70	2
16	3
11	4
2	6
1	11

---

**CRSTYPES06** Course Type: Graduate courses

---

Type: numeric (double)

Range: [0,20] Units: .1

Unique values: 19 Missing: 0/24,462

Mean: .424916

Std. Dev.: .91178

Percentiles:

10%	25%	50%	75%	90%
0	0	0	1	2

---

**PRIMARYTEACH** What Types of courses do you primarily teach?

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:

Freq.	Numeric Label:
98	1 Non-credit courses
18,247	2 Undergraduate credit courses
6,117	3 Graduate credit courses

---

**GRADCOURSE** In the past two years, have you taught a graduate course?

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:

Freq.	Numeric Label:
14,697	0 No
9,765	1 Yes

---

**ACT01** Activity: Advised student groups involved in service/volunteer work

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: /24,462

Tabulation:

Freq.	Numeric Label:
12,114	0 Not Marked

	12,348	1 Marked
<b>ACT02</b>	Activity: Collaborated with the local community in research/teaching	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	12,667	0 Not Marked
	11,795	1 Marked
<b>ACT07</b>	Activity: Engaged undergraduates on your research project	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	13,056	0 Not Marked
	11,406	1 Marked
<b>ACT08</b>	Activity: Worked with undergraduates on a research project	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 2,537/24,462	
Tabulation:	Freq.	Numeric Label:
	8,749	0 Not Marked
	13,176	1 Marked
	2,537	.
<b>ACT10</b>	Activity: Supervised an undergraduate thesis	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	15,899	0 Not Marked
	8,563	1 Marked
<b>TCHACT01</b>	Teaching Activity: Taught an honors course	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	20,663	0 No
	3,799	1 Yes
<b>TCHACT02</b>	Teaching Activity: Taught an interdisciplinary course	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	14,766	0 No
	9,696	1 Yes

---

**TCHACT03** Teaching Activity: Taught an area studies course (e.g., women's studies, ethnic studies, LGBTQ studies)

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	20,793	0	No
	3,669	1	Yes

---

**TCHACT04** Teaching Activity: Taught a service learning course

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	20,338	0	No
	4,124	1	Yes

---

**TCHACT05** Teaching Activity: Taught an exclusively web-based course at this institution

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	20,503	0	No
	3,959	1	Yes

---

**TCHACT06** Teaching Activity: Participated in organized activities around enhancing pedagogy

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	8,796	0	No
	15,666	1	Yes

---

**TCHACT07** Teaching Activity: Taught a seminar for first-year students

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	19,058	0	No
	5,404	1	Yes

---

**TCHACT08** Teaching Activity: Taught a capstone course

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 2,849/24,462

Tabulation:	Freq.	Numeric	Label:
	14,050	0	No
	7,563	1	Yes

<b>TCHACT09</b>	Teaching Activity: Taught in a learning community (e.g. FIG, linked courses)	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	22,911	0 No
	1,551	1 Yes
<b>TCHACT10</b>	Teaching Activity: Taught a course that meets general education requirements	
Type: numeric (double)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	11,048	0 No
	13,414	1 Yes
<b>UGPRESENT</b>	Present: Presented with undergraduate students at conferences	
Type: numeric (double)		
Range: [1,3]		
Unique values: 3	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	17,773	1 Not at All
	4,915	2 To Some Extent
	1,774	3 To a Great Extent
<b>UGPUBLISH</b>	Publish: Published with undergraduates	
Type: numeric (double)		
Range: [1,3]		
Unique values: 3	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	19,929	1 Not at All
	3,538	2 To Some Extent
	995	3 To a Great Extent
<b>DEVELOP01</b>	Prof Develop: Paid workshops outside the institution focused on teaching	
Type: numeric (double)		
Range: [0,1]		
Unique values: 4	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:
	18,733	0 No, Not Available, or Not Eligible
	5,729	1 Yes
<b>DEVELOP06</b>	Prof Develop: Incentives to develop new courses	
Type: numeric (double)		
Range: [0,1]		
Unique values: 4	Missing: 0/24,462	
Tabulation:	Freq.	Numeric Label:

19,057      0 No, Not Available, or Not Eligible  
 5,405      1 Yes

---

**DEVELOP07**      Prof Develop: Incentives to integrate new technology into your classroom

---

Type: numeric (double)

Range: [0,1]

Unique values: 4      Missing: 0/24,462

Tabulation:      Freq.      Numeric Label:  
 17,645      0 No, Not Available, or Not Eligible  
 6,814      1 Yes

---

**PUBLISH01**      Publish: Articles in academic or professional journals

---

Type: numeric (double)

Range: [1,7]

Unique values: 7      Missing: 0/24,462

Tabulation:      Freq.      Numeric Label:  
 5,936      1 None  
 4,797      2 1-2  
 3,197      3 3-4  
 4,085      4 5-10  
 2,847      5 11-20  
 2,270      6 21-50  
 1,330      7 51+

---

**PUBLISH02**      Publish: Chapters in edited volumes

---

Type: numeric (double)

Range: [1,7]

Unique values: 7      Missing: 0/24,462

Tabulation:      Freq.      Numeric Label:  
 12,734      1 None  
 6,107      2 1-2  
 2,655      3 3-4  
 1,869      4 5-10  
 739      5 11-20  
 306      6 21-50  
 52      7 51+

---

**PUBLISH03**      Publish: Books, manuals, or monographs

---

Type: numeric (double)

Range: [1,7]

Unique values: 7      Missing: 0/24,462

Tabulation:      Freq.      Numeric Label:  
 16,557      1 None  
 5,293      2 1-2  
 1,452      3 3-4  
 842      4 5-10  
 231      5 11-20  
 61      6 21-50  
 26      7 51+

---

**PUBLISH04** Publish: Other, such as patents, or computer software products

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	21,442	1	None
	1,689	2	1-2
	618	3	3-4
	396	4	5-10
	159	5	11-20
	94	6	21-50
	64	7	51+

---

**HPW01** Hours per Week: Scheduled teaching (give actual, not credit hours)

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	1,527	1	None
	4,668	2	1-4
	7,216	3	5-8
	7,171	4	9-12
	2,404	5	13-16
	863	6	17-20
	613	7	21+

---

**HPW02** Hours per Week: Preparing for teaching (including reading student papers and grading)

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	1,265	1	None
	3,718	2	1-4
	5,915	3	5-8
	5,365	4	9-12
	3,438	5	13-16
	2,431	6	17-20
	2,330	7	21+

---

**HPW03** Hours per Week: Advising and counseling of students

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	1,907	1	None
	13,980	2	1-4
	6,000	3	5-8

1,678	4 9-12
504	5 13-16
193	6 17-20
200	7 21+

---

**HPW04** Hours per Week: Committee work and meetings

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	3,598	1 None
	12,960	2 1-4
	5,333	3 5-8
	1,617	4 9-12
	561	5 13-16
	211	6 17-20
	182	7 21+

---

**HPW05** Hours per Week: Other administration

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	8,122	1 None
	9,307	2 1-4
	3,120	3 5-8
	1,576	4 9-12
	851	5 13-16
	615	6 17-20
	871	7 21+

---

**HPW06** Hours per Week: Research and scholarly writing

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	5,785	1 None
	8,531	2 1-4
	4,281	3 5-8
	2,334	4 9-12
	1,179	5 13-16
	937	6 17-20
	1,415	7 21+

---

**HPW07** Hours per Week: Other creative products/performances

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
-------------	-------	----------------

17,851	1 None
4,101	2 1-4
1,341	3 5-8
545	4 9-12
229	5 13-16
169	6 17-20
226	7 21+

---

**HPW08** Hours per Week: Community or public service

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	10,237	1	None
	10,874	2	1-4
	2,255	3	5-8
	662	4	9-12
	210	5	13-16
	108	6	17-20
	116	7	21+

---

**HPW09** Hours per Week: Outside consulting/freelance work

---

Type: numeric (double)

Range: [1,7]

Unique values: 7 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	18,009	1	None
	4,544	2	1-4
	1,127	3	5-8
	417	4	9-12
	145	5	13-16
	92	6	17-20
	128	7	21+

---

**MNDHAB01** Habits of Mind: Ask questions in class

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	989	1	Not at All
	1,311	2	Occasionally
	22,162	3	Frequently

---

**MNDHAB03** Habits of Mind: Seek solutions to problems and explain them to others

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	1,688	1	Not at All

6,516 2 Occasionally  
16,258 3 Frequently

---

**MNDHAB04** Habits of Mind: Revise their papers to improve their writing

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation: Freq. Numeric Label:  
3,693 1 Not at All  
7,860 2 Occasionally  
12,909 3 Frequently

---

**MNDHAB09** Habits of Mind: Explore topics on their own, even though it was not required for class

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 3,612/24,462

Tabulation: Freq. Numeric Label:  
1,996 1 Not at All  
10,029 2 Occasionally  
8,825 3 Frequently  
3,612 .

---

**MNDHAB11** Habits of Mind: Seek feedback on their academic work

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation: Freq. Numeric Label:  
1,665 1 Not at All  
7,008 2 Occasionally  
15,789 3 Frequently

---

**MNDHAB12** Habits of Mind: Work with other students on group projects

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation: Freq. Numeric Label:  
3,074 1 Not at All  
7,644 2 Occasionally  
13,744 3 Frequently

---

**CONSACT01** Activity: Use different points of view to make an argument

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation: Freq. Numeric Label:  
1,941 1 Not at All  
8,435 2 Occasionally  
14,086 3 Frequently

---

**CRSASSIGN01** Assignment: Engage deeply with a significant challenge or question within your discipline

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	2,062	1 Not at All
	8,624	2 Occasionally
	13,776	3 Frequently

---

**CRSASSIGN04** Assignment: Apply learning from both academic and field settings

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	4,386	1 Not at All
	7,776	2 Occasionally
	12,300	3 Frequently

---

**CRSASSIGN08** Assignment: Work with classmates outside of class

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	3,061	1 Not at All
	9,040	2 Occasionally
	12,361	3 Frequently

---

**CRSASSIGN09** Assignment: Lead a discussion, activity or lab

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	3,971	1 Not at All
	8,779	2 Occasionally
	11,712	3 Frequently

---

**CRSASSIGN10** Assignment: Provide and/or receive feedback to classmates about a draft or work

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	6,215	1 Not at All
	9,226	2 Occasionally
	9,021	3 Frequently

---

**METHOD01** Method: Class discussions

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462  
Tabulation:            Freq.            Numeric Label:  
                          620                1 None  
                          2,997              2 Some  
                          4,403              3 Most  
                          16,442             4 All

---

**METHOD02**      Method: Cooperative learning (small groups)

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                          2,382              1 None  
                          6,727              2 Some  
                          6,385              3 Most  
                          8,968              4 All

---

**METHOD03**      Method: Experiential learning/Field studies

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                          8,864              1 None  
                          7,710              2 Some  
                          4,132              3 Most  
                          3,756              4 All

---

**METHOD05**      Method: Group projects

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                          4,005              1 None  
                          8,354              2 Some  
                          6,022              3 Most  
                          6,081              4 All

---

**METHOD06**      Method: Extensive lecturing

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                          4,473              1 None  
                          8,529              2 Some  
                          6,687              3 Most  
                          4,773              4 All

---

**METHOD07**      Method: Multiple drafts of written work

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462  
Tabulation:            Freq.            Numeric Label:  
                  5,748            1 None  
                  9,723            2 Some  
                  5,024            3 Most  
                  3,967            4 All

---

**METHOD08**            Method: Student-selected topics for course content

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                  6,674            1 None  
                  10,595            2 Some  
                  3,957            3 Most  
                  3,236            4 All

---

**METHOD09**            Method: Reflective writing/journaling

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                  8,896            1 None  
                  7,943            2 Some  
                  3,807            3 Most  
                  3,816            4 All

---

**METHOD10**            Method: Community service as part of coursework

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                  15,481            1 None  
                  6,301            2 Some  
                  1,682            3 Most  
                  998            4 All

---

**METHOD11**            Method: Electronic quizzes with immediate feedback in class

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:            Freq.            Numeric Label:  
                  17,004            1 None  
                  3,929            2 Some  
                  1,891            3 Most  
                  1,638            4 All

---

**METHOD12**            Method: Using real-life problems

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462  
 Tabulation:          Freq.            Numeric Label:  
                          1,228            1 None  
                          4,230            2 Some  
                          5,871            3 Most  
                          13,133          4 All

**METHOD13**      Method: Using student inquiry to drive learning

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:          Freq.            Numeric Label:  
                          1,508            1 None  
                          7,358            2 Some  
                          7,213            3 Most  
                          8,383            4 All

**METHOD14**      Method: “Learn before lecture” through multimedia tools (e.g., flipping the classroom)

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:          Freq.            Numeric Label:  
                          10,429           1 None  
                          8,375            2 Some  
                          3,239            3 Most  
                          2,419            4 All

**METHOD15**      Method: Readings on racial and ethnic issues

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:          Freq.            Numeric Label:  
                          10,893           1 None  
                          6,824            2 Some  
                          3,340            3 Most  
                          3,405            4 All

**METHOD18**      Method: Techniques to create an inclusive classroom environment for diverse students

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:          Freq.            Numeric Label:  
                          3,637            1 None  
                          5,848            2 Some  
                          6,210            3 Most  
                          8,767            4 All

**METHOD20**      Method: Student presentations

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	2,482	1	None
	7,773	2	Some
	6,731	3	Most
	7,476	4	All

---

**METHOD21**      Method: Student evaluations of each others' work

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	7,313	1	None
	9,447	2	Some
	4,214	3	Most
	3,488	4	All

---

**METHOD22**      Method: Grading on a curve

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	14,596	1	None
	5,254	2	Some
	2,450	3	Most
	2,162	4	All

---

**METHOD23**      Method: Rubric-based assessment

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	4,370	1	None
	6,231	2	Some
	6,063	3	Most
	7,798	4	All

---

**CRSASSES01**      Assessment: Provide instructions clearly delineating what students are to do to complete

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	185	1	Not at All
	1,898	2	Occasionally
	22,379	3	Frequently

---

**CRSASSESS02**      Assessment: Explain what you want students to gain from the assignment

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	353	1 Not at All
	4,791	2 Occasionally
	19,318	3 Frequently

---

**CRSASSESS03**      Assessment: Provide feedback on drafts or work still in progress

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	1,975	1 Not at All
	9,871	2 Occasionally
	12,616	3 Frequently

---

**CRSASSESS04**      Assessment: Provide in advance the criteria for evaluating the assignment

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	750	1 Not at All
	5,143	2 Occasionally
	18,569	3 Frequently

---

**CRSASSESS05**      Assessment: Explicitly link the assignment with course goals or learning objectives

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	1,074	1 Not at All
	6,497	2 Occasionally
	16,891	3 Frequently

---

**CRSTECH01**      Course Technology: YouTube or other videos

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	3,173	1 Not at All
	11,906	2 Occasionally
	9,383	3 Frequently

---

**CRSTECH02**      Course Technology: Classroom enhancement technology (e.g., Elmo, tablet PCs)

---

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	11,324	1 Not at All
	7,348	2 Occasionally
	5,790	3 Frequently

---

**CRSTECH03** Course Technology: Simulations/animations

---

Type: numeric (double)

Range: [1,3]

Unique values: 3 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	11,012	1 Not at All
	9,281	2 Occasionally
	4,169	3 Frequently

---

**TCHOPN01** Opinion: It is primarily up to individual students whether they succeed in my courses

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	428	1 Disagree Strongly
	2,532	2 Disagree Somewhat
	12,607	3 Agree Somewhat
	8,895	4 Agree Strongly

---

**TCHOPN09** Opinion: Most students learn best when they do their assignments on their own

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	1,416	1 Disagree Strongly
	9,900	2 Disagree Somewhat
	9,821	3 Agree Somewhat
	3,325	4 Agree Strongly

---

**INSTOPN03** Inst Opinion: Most students are well-prepared academically

---

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	1,822	1 Disagree Strongly
	7,260	2 Disagree Somewhat
	11,181	3 Agree Somewhat
	4,199	4 Agree Strongly

---

**INSTOPN07** Inst Opinion: Faculty here are strongly interested in the academic problems of undergraduates

---

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462  
 Tabulation:          Freq.          Numeric Label:  
                          352            1 Disagree Strongly  
                          2,248        2 Disagree Somewhat  
                          9,905        3 Agree Somewhat  
                          11,957       4 Agree Strongly

**INSTOPN09**      Inst Opinion: My research is valued by faculty in my department

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:          Freq.          Numeric Label:  
                          1,802        1 Disagree Strongly  
                          3,821        2 Disagree Somewhat  
                          10,489       3 Agree Somewhat  
                          8,350        4 Agree Strongly

**INSTOPN10**      Inst Opinion: My teaching is valued by faculty in my department

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:          Freq.          Numeric Label:  
                          857            1 Disagree Strongly  
                          1,932        2 Disagree Somewhat  
                          8,331        3 Agree Somewhat  
                          13,342       4 Agree Strongly

**INSTOPN11**      Inst Opinion: My service is valued by faculty in my department

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462

Tabulation:          Freq.          Numeric Label:  
                          1,363        1 Disagree Strongly  
                          2,861        2 Disagree Somewhat  
                          9,308        3 Agree Somewhat  
                          10,930       4 Agree Strongly

**RwrdTCH**          Inst Description: Faculty are rewarded for being good teachers

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 6,172/24,462

Tabulation:          Freq.          Numeric Label:  
                          4,710        1 Not Descriptive  
                          8,715        2 Somewhat Descriptive  
                          4,865        3 Very Descriptive  
                          6,172        .

**AFFACT01**      Affect: Feel that the training you received in graduate school prepared you well

Type: numeric (double)

Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:            Freq.            Numeric Label:  
                           2,057            1 Not at All  
                           11,687           2 To Some Extent  
                           10,718           3 To a Great Extent

**AFFACT07**            Affect: Structure your courses so that students master a conceptual understanding

Type: numeric (double)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:            Freq.            Numeric Label:  
                           192                1 Not at All  
                           4,460             2 To Some Extent  
                           19,810            3 To a Great Extent

**AFFACT08**            Affect: Structure your courses so that students develop study skills that prepare them for college-level work

Type: numeric (double)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:            Freq.            Numeric Label:  
                           1,856             1 Not at All  
                           10,037            2 To Some Extent  
                           12,569            3 To a Great Extent

**SATIS01**            Satisfaction: Salary

Type: numeric (double)  
 Range: [1,5]  
 Unique values: 5      Missing: 0/24,462  
 Tabulation:            Freq.            Numeric Label:  
                           78                 1 Not Applicable  
                           ,812               2 Not Satisfied  
                           6,685             3 Marginally Satisfied  
                           9,205             4 Satisfied  
                           2,682             5 Very Satisfied

**SATIS04**            Satisfaction: Opportunity for scholarly pursuits

Type: numeric (double)  
 Range: [1,5]  
 Unique values: 5      Missing: 5,931/24,462  
 Tabulation:            Freq.            Numeric Label:  
                           1,183             1 Not Applicable  
                           3,570             2 Not Satisfied  
                           4,791             3 Marginally Satisfied  
                           6,465             4 Satisfied  
                           2,522             5 Very Satisfied  
                           5,931             .

---

**SATIS05** Satisfaction: Teaching load

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	279	1	Not Applicable
	4,526	2	Not Satisfied
	5,516	3	Marginally Satisfied
	10,435	4	Satisfied
	3,706	5	Very Satisfied

---

**SATIS06** Satisfaction: Quality of students

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	54	1	Not Applicable
	2,455	2	Not Satisfied
	6,026	3	Marginally Satisfied
	11,087	4	Satisfied
	4,840	5	Very Satisfied

---

**SATIS11** Satisfaction: Job security

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	421	1	Not Applicable
	2,777	2	Not Satisfied
	3,239	3	Marginally Satisfied
	8,371	4	Satisfied
	9,654	5	Very Satisfied

---

**SATIS13** Satisfaction: Course assignments

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
	235	1	Not Applicable
	906	2	Not Satisfied
	2,936	3	Marginally Satisfied
	11,603	4	Satisfied
	8,782	5	Very Satisfied

---

**SATIS14** Satisfaction: Freedom to determine course content

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric	Label:
-------------	-------	---------	--------

---

235	1 Not Applicable
645	2 Not Satisfied
1,466	3 Marginally Satisfied
7,571	4 Satisfied
14,545	5 Very Satisfied

**SATIS16** Satisfaction: Prospects for career advancement

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	2,432	1 Not Applicable
	4,518	2 Not Satisfied
	5,765	3 Marginally Satisfied
	8,638	4 Satisfied
	3,109	5 Very Satisfied

**SATIS18** Satisfaction: Overall job satisfaction

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 6,0618/24,462

Tabulation:	Freq.	Numeric Label:
	23	1 Not Applicable
	1,031	2 Not Satisfied
	3,314	3 Marginally Satisfied
	9,025	4 Satisfied
	5,008	5 Very Satisfied
	6,061	.

**STRESS13** Stress: Teaching load

Type: numeric (double)

Range: [1,4]

Unique values: 4 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	370	1 Not Applicable
	9,560	2 Not at All
	10,494	3 Somewhat
	4,038	4 Extensive

**FacUnion** Act: Are you a member of a faculty union?

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	21,547	0 No
	2,915	1 Yes

**USCTZN** Act: Are you a U.S. citizen?

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462  
 Tabulation:          Freq.            Numeric Label:  
                          1,115            0 No  
                          23,347          1 Yes

**RtrIn3**                    Act: Do you plan to retire within the next three years?

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462  
 Tabulation:          Freq.            Numeric Label:  
                          21,636          0 No  
                          2,826            1 Yes

**TCHAWRD**                Act: Have you ever received an award for outstanding teaching?

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462  
 Tabulation:          Freq.            Numeric Label:  
                          14,741          0 No  
                          9,721            1 Yes

**SALARY**                    Please enter your base institutional salary (e.g., for \$56,000, please enter 56000)

Type: numeric (double)

Range: [0,1850000]                    Units: .1  
 Unique values: 1,314                    Missing: 8,909/24,462

Mean: 80198.2

Std. Dev.: 46789.1

Percentiles:	10%	25%	50%	75%	90%
	49000	58000	72000	92000	120000

**SALARYBASE**            Your base institutional salary reported above is based on:

Type: numeric (double)

Range: [1,3]

Unique values: 3      Missing: 0/24,462  
 Tabulation:          Freq.            Numeric Label:  
                          1,208            1 Less than 9 months  
                          16,350          2 9/10 months  
                          6,904            3 11/12 months

**DEGEARN**                Highest Degree Earned

Type: numeric (double)

Range: [1,4]

Unique values: 4      Missing: 0/24,462  
 Tabulation:          Freq.            Numeric Label:  
                          882              1 None (or Other)  
                          187              2 Bachelor's Degree  
                          4,216            3 Master's Degree  
                          19,177          4 Doctorate (Ph.D., Ed.D., or Professional)

**WHITECAUC**              White/Caucasian

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	2,434	0 Not Marked
	22,028	1 Marked

---

**AFAMBLACK**                      African American/Black

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	23,958	0 Not Marked
	504	1 Marked

---

**AMINALSNAT**                      American Indian/Alaska Native

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	24,229	0 Not Marked
	233	1 Marked

---

**ASNAMASN**                      Asian American/Asian

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	23,527	0 Not Marked
	935	1 Marked

---

**NATHAWPACIS**                      Native Hawaiian/Pacific Islander

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	24,404	0 Not Marked
	58	1 Marked

---

**MEXAMCHIC**                      Mexican American/Chicano

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	24,219	0 Not Marked
	243	1 Marked

---

**PUERTRIC**                      Puerto Rican

---

Type: numeric (double)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	24,366	0 Not Marked
	96	1 Marked

---

**OTHERLTNO** Other Latino

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	24,060	0 Not Marked
	402	1 Marked

---

**OTHERRACE** Other

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	23,548	0 Not Marked
	914	1 Marked

---

**NATENGSP** Is English your native language?

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	1,871	0 No
	22,591	1 Yes

---

**MARITAL** Are you currently: (Mark one)

---

Type: numeric (double)

Range: [1,8]

Unique values: 8 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	2,992	1 Single
	41	2 In a civil union
	377	3 In a domestic partnership
	18,745	4 Married
	430	5 Unmarried, living iwth partner
	343	6 Separated
	1,132	7 Divorced
	402	8 Widowed

---

**NCHILD1** Child: Under 18 years old

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	15,494	1 0
	3,444	2 1
	4,243	3 2

845 4 3  
436 5 4+

---

**NCHILD2** Child: 18 years or older

---

Type: numeric (double)

Range: [1,5]

Unique values: 5 Missing: 537/24,462

Tabulation:	Freq.	Numeric	Label:
	13,651	1	0
	3,191	2	1
	4,622	3	2
	1,823	4	3
	1,175	5	4+
	537	.	

---

**YRBIRTH** Please enter the four-digit year of your birth (e.g., 1944, 1988).

---

Type: numeric (double)

Range: [1920,1989]

Unique values: 64 Missing: 0/24,462

Mean: 1959.96

Std. Dev.: 11.584

Percentiles:	10%	25%	50%	75%	90%
	1944	1951	1960	1968	1977

---

**AGE (Original)** Aggregated Age

---

Type: numeric (double)

Range: [1,10]

Unique values: 10 Missing: 537/24,462

Examples:		
	4	1966 - 1970
	6	1956 - 1960
	7	1951 - 1955
	9	1941 - 1945

---

**YR1STAPPOINTA** Aggregated - Year of first academic appointment

---

Type: numeric (double)

Range: [1,9]

Unique values: 9 Missing: 3,092/24,462

Tabulation:	Freq.	Numeric	Label:
	1,451	1	1973 or less
	1,306	2	1974 - 1978
	1,606	3	1979 - 1983
	2,274	4	1984 - 1988
	2,595	5	1989 - 1993
	3,508	6	1994 - 1998
	3,933	7	1999 - 2003
	4,367	8	2004 - 2008
	330	9	2009 or more
	3,092	.	

---

**YRAPPOINTA** Aggregated - Year of appointment at present institution

---

Type: numeric (double)

Range: [1,9]

Unique values: 9      Missing: 6,771/24,462

Tabulation:	Freq.	Numeric	Label:
	509	1	1973 or less
	635	2	1974 - 1978
	939	3	1979 - 1983
	1,592	4	1984 - 1988
	1,792	5	1989 - 1993
	2,916	6	1994 - 1998
	3,643	7	1999 - 2003
	4,888	8	2004 - 2008
	777	9	2009 or more
	6,771	.	

---

**YRTENUREA**      Aggregated - If tenured, year tenure was awarded

---

Type: numeric (double)

Range: [1,9]

Unique values: 9      Missing: 18,084/24,462

Tabulation:	Freq.	Numeric	Label:
	144	1	1973 or less
	191	2	1974 - 1978
	381	3	1979 - 1983
	512	4	1984 - 1988
	796	5	1989 - 1993
	1,017	6	1994 - 1998
	1,296	7	1999 - 2003
	1,619	8	2004 - 2008
	422	9	2009 or more
	18,084	.	

---

**MAJORA**      Aggregated Major

---

Type: numeric (double)

Range: [1,15]

Unique values: 15      Missing: 0/24,462

Examples:

4	Education (General Area=10 and Specific Discipline=2102)
8	History or Political Science (Specific Discipline=3007,3009)
10	Fine Arts (General Area=2,4,22)
13	Social Sciences (General Area=3,26,27 and Specific Discipline

---

**DEPTA**      Aggregated Department

---

Type: numeric (double)

Range: [1,15]

Unique values: 15      Missing: 0/24,462

Examples:

4	Education (General Area=10 and Specific Discipline=2102)
8	History or Political Science (Specific Discipline=3007,3009)
10	Fine Arts (General Area=2,4,22)
13	Social Sciences (General Area=3,26,27 and Specific Discipline

---

**STEM** Faculty works in STEM department

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	18,124	1
	6,338	2

---

**FT UNDERGRD FAC** Full-time Undergraduate Faculty

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	7,351	0 No
	17,111	1 Yes

---

**PTUGfac** Part-time Undergraduate Faculty

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	21,416	0 No
	3,046	1 Yes

---

**FTADMIN** Full-time Administrator

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	19,343	0 No
	5,119	1 Yes

---

**GRADONLYFAC** Graduate-only Faculty

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	21,637	0 No
	2,825	1 Yes

---

**OTHERSTAFF** Other Staff

---

Type: numeric (double)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Numeric Label:
	22,621	0 No
	1,841	1 Yes

---

**FACWGT** Faculty Weight

---

Type: numeric (double)

Range: [2.0609695,1591.9112] .000e-09  
 Unique values: 2,058 Missing: 8,382/24,462  
 Mean: 27.2054  
 Std. Dev.: 48.1918  
 Percentiles:           10%           25%           50%           75%           90%  
                           5.04691       8.58416       15.6225       31.0783       47.3227

**STRAT**           CIRP Stratification Cell

Type: numeric (double)  
 Range: [1,41]  
 Unique values: 28   Missing: 0/24,462  
 Examples:           4   Private Universities - medium  
                           8   Public 4yr Colleges - medium  
                          13  Private/Nonsectarian 4yr Colleges - high  
                          21  Other Religious 4yr Colleges - low

**STATE**           Institution's state

Type: string (str2)  
 Unique values: 44   Missing: 0/24,462  
 Examples:           "CT"  
                           "ME"  
                           "NY"  
                           "PA"

**HERIREG**        HERI Region

Type: numeric (double)  
 Range: [1,4]  
 Unique values: 4    Missing: 0/24,462  
 Tabulation:        Freq.        Numeric Label:  
                           6,838        1 East  
                           7,351        2 Midwest  
                           2,416        3 South  
                           7,857        4 West

**OBEREG**        OBE Region

Type: numeric (double)  
 Range: [1,8]  
 Unique values: 8    Missing: 0/24,462  
 Tabulation:        Freq.        Numeric Label:  
                           1,920        1 New England - CT ME MA NH RI VT  
                           4,928        2 Mid East - DE DC MD NJ NY PA  
                           5,511        3 Great Lakes - IL IN MI OH WI  
                           1,836        4 Plains - IA KS MN MO NE ND SD  
                           2,414        5 Southeast - AL AR FL GA KY LA MS NC SC TN VA  
   WV  
                           1,685        6 Southwest - AZ NM OK TX  
                           2,458        7 Rocky Mountains - CO ID MT UT WY  
                           3,710        8 Far West - AK CA HI NV OR WA

**SATIS\_WORKPLACE**   Workplace Satisfaction



	163	1	Yes		
<b>CONTROLA</b>	(unlabeled)				
Type:	string (str7)				
Unique values:	3	Missing: 0/24,462			
Tabulation:	Freq.	Value			
	724	""			
	14,695	"PRIVATE"			
	9,043	"PUBLIC"			
<b>CCBASIC</b>	Carnegie Classification 2010: Basic				
Type:	numeric (double)				
Range:	[2,26]				
Unique values:	12	Missing: 0/24,462			
Examples:	16	Research Universities (high research activity)			
	18	Master's Colleges and Universities (larger programs)			
	21	Baccalaureate Colleges--Arts & Sciences			
<b>SELECTIVITY</b>	(unlabeled)				
Type:	numeric (double)				
Range:	[0,1525]				
Unique values:	126	Missing: 780/24,462			
Mean:	1128.87				
Std. Dev.:	209.678				
Percentiles:	10%	25%	50%	75%	90%
	965	1042	1150	1260	1334
<b>TUITANDFEESPrv</b>	Tuition and fees - Total (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[5175,1.162e+09]				
Unique values:	201	Missing: 9,597/24,462			
Mean:	1.2e+08				
Std. Dev.:	1.6e+08				
Percentiles:	10%	25%	50%	75%	90%
	2.5e+07	3.7e+07	6.3e+07	1.8e+08	2.3e+08
<b>NetTotRevPrv</b>	Net total revenues after assets released from restriction - Total (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[4410386,4.767e+09]				
Unique values:	201	Missing: 9,597/24,462			
Mean:	3.4e+08				
Std. Dev.:	5.0e+08				
Percentiles:	10%	25%	50%	75%	90%
	4.6e+07	8.2e+07	1.5e+08	3.2e+08	1.1e+09
<b>ExpInstrectPrv</b>	Instruction-Total amount (F1314_F2_RV)				
Type:	numeric (double)				
Range:	[1809898,1.636e+09]				
Unique values:	201	Missing: 9,597/24,462			
Mean:	1.0e+08				

Std. Dev.: 1.6e+08  
 Percentiles:      10%            25%            50%            75%            90%  
                          1.4e+07      2.4e+07      4.2e+07      1.1e+08      3.6e+08

**ExpResrchPrv**      Research-Total amount (F1314\_F2\_RV)

Type: numeric (double)  
 Range: [0,3.465e+08]  
 Unique values: 103    Missing: 9,597/24,462  
 Mean: 1.5e+07  
 Std. Dev.: 3.9e+07  
 Percentiles:      10%            25%            50%            75%            90%  
                          0                0                854019      4.8e+06      4.4e+07

**ExpPubSrvPrv**      Public service-Total amount (F1314\_F2\_RV)

Type: numeric (double)  
 Range: [0,64647000]  
 Unique values: 99    Missing: 9,597/24,462  
 Mean: 5.2e+06  
 Std. Dev.: 1.2e+07  
 Percentiles:      10%            25%            50%            75%            90%  
                          0                0                503343      2.6e+06      1.4e+07

**ExpAcSupPrv**      Academic support-Total amount (F1314\_F2\_RV)

Type: numeric (double)  
 Range: [354135,5.355e+08]  
 Unique values: 201    Missing: 9,597/24,462  
 Mean: 3.2e+07  
 Std. Dev.: 7.2e+07  
 Percentiles:      10%            25%            50%            75%            90%  
                          3.0e+06      5.0e+06      9.5e+06      3.0e+07      6.1e+07

**ExpStdSrvPrv**      Student service-Total amount (F1314\_F2\_RV)

Type: numeric (double)  
 Range: [7987,2.744e+08]  
 Unique values: 201    Missing: 9,597/24,462  
 Mean: 2.4e+07  
 Std. Dev.: 2.6e+07  
 Percentiles:      10%            25%            50%            75%            90%  
                          7.1e+06      1.0e+07      1.5e+07      3.0e+07      4.7e+07

**ExpInstSupPrv**      Institutional support-Total amount (F1314\_F2\_RV)

Type: numeric (double)  
 Range: [653479,4.434e+08]  
 Unique values: 201    Missing: 9,597/24,462  
 Mean: 3.4e+07  
 Std. Dev.: 4.0e+07  
 Percentiles:      10%            25%            50%            75%            90%  
                          7.3e+06      1.1e+07      1.7e+07      4.1e+07      9.5e+07

**ExpTotPrv**      Total expenses-Total amount (F1314\_F2\_RV)

Type: numeric (double)

Range: [3026387,3.683e+09]  
 Unique values: 201 Missing: 9,597/24,462  
 Mean: 2.6e+08  
 Std. Dev.: 3.9e+08

Percentiles:	10%	25%	50%	75%	90%
	4.0e+07	6.6e+07	1.1e+08	2.4e+08	9.3e+08

**NetGrntAidPrv** Net grant aid to students-Total amount (F1314\_F2\_RV)

Type: numeric (double)  
 Range: [0,14964873]  
 Unique values: 24 Missing: 9,597/24,462  
 Mean: 589739  
 Std. Dev.: 2.2e+06

Percentiles:	10%	25%	50%	75%	90%
	0	0	0	0	1.6e+06

**EndowValuPrv** Value of endowment assets at the end of the fiscal year (F1314\_F2\_RV)

Type: numeric (double)  
 Range: [692412,6.539e+09]  
 Unique values: 196 Missing: 9,958/24,462  
 Mean: 4.3e+08  
 Std. Dev.: 5.9e+08

Percentiles:	10%	25%	50%	75%	90%
	1.8e+07	5.8e+07	1.7e+08	6.6e+08	1.5e+09

**TUITANDFEESPub** Tuition and fees after deducting discounts and allowances (F1314\_F1A\_RV)

Type: numeric (double)  
 Range: [4051000,7.762e+08]  
 Unique values: 88 Missing: 15,457/24,462  
 Mean: 2.3e+08  
 Std. Dev.: 2.3e+08

Percentiles:	10%	25%	50%	75%	90%
	3.1e+07	6.8e+07	1.5e+08	2.9e+08	6.5e+08

**TotAllRevPub** Total all revenues and other additions (F1314\_F1A\_RV)

Type: numeric (double)  
 Range: [18561000,6.121e+09]  
 Unique values: 88 Missing: 15,457/24,462  
 Mean: 1.2e+09  
 Std. Dev.: 1.9e+09

Percentiles:	10%	25%	50%	75%	90%
	1.1e+08	1.9e+08	3.9e+08	9.1e+08	6.1e+09

**TotOpRevPub** Total operating revenues (F1314\_F1A\_RV)

Type: numeric (double)  
 Range: [9118000,4.930e+09]  
 Unique values: 88 Missing: 15,457/24,462  
 Mean: 8.7e+08  
 Std. Dev.: 1.5e+09

Percentiles:	10%	25%	50%	75%	90%
	5.4e+07	8.7e+07	2.2e+08	5.5e+08	4.9e+09

---

**ExpInstrtPub** Instruction - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [7561000,1.680e+09]  
Unique values: 88 Missing: 15,457/24,462  
Mean: 3.4e+08  
Std. Dev.: 5.0e+08

Percentiles:	10%	25%	50%	75%	90%
	4.4e+07	8.4e+07	1.2e+08	2.8e+08	1.7e+09

---

**ExpResrchPub** Research - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [0,7.954e+08]  
Unique values: 87 Missing: 15,457/24,462  
Mean: 1.4e+08  
Std. Dev.: 2.5e+08

Percentiles:	10%	25%	50%	75%	90%
	256613	981144	9.7e+06	1.2e+08	8.0e+08

---

**ExpPubSrvPub** Public service - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [0,2.426e+08]  
Unique values: 86 Missing: 15,457/24,462  
Mean: 4.3e+07  
Std. Dev.: 6.2e+07

Percentiles:	10%	25%	50%	75%	90%
	372814	2.4e+06	9.7e+06	6.4e+07	1.2e+08

---

**ExpAcSupPub** Academic support - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [2216000,6.070e+08]  
Unique values: 88 Missing: 15,457/24,462  
Mean: 1.1e+08  
Std. Dev.: 1.8e+08

Percentiles:	10%	25%	50%	75%	90%
	1.1e+07	1.5e+07	3.5e+07	9.2e+07	6.1e+08

---

**ExpStdSrvPub** Student services - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [3012607,1.452e+08]  
Unique values: 88 Missing: 15,457/24,462  
Mean: 4.0e+07  
Std. Dev.: 4.0e+07

Percentiles:	10%	25%	50%	75%	90%
	9.6e+06	1.6e+07	2.9e+07	4.2e+07	1.5e+08

---

**ExpInstSupPub** Institutional support - Current year total (F1314\_F1A\_RV)

---

Type: numeric (double)  
Range: [2514000,2.985e+08]

Unique values: 88    Missing: 15,457/24,462  
 Mean: 6.0e+07  
 Std. Dev.: 6.7e+07  
 Percentiles:        10%            25%            50%            75%            90%  
                          1.1e+07        2.2e+07        3.5e+07        4.5e+07        2.2e+08

**ExpSchFshpPub**    Scholarships and fellowships expenses -- Current year total  
 (F1314\_F1A\_RV)

Type: numeric (double)  
 Range: [155336,1.041e+08]  
 Unique values: 88    Missing: 15,457/24,462  
 Mean: 2.4e+07  
 Std. Dev.: 1.8e+07  
 Percentiles:        10%            25%            50%            75%            90%  
                          6.0e+06        1.1e+07        2.0e+07        3.0e+07        4.0e+07

**ExpTotPub**        Total expenses deductions - Current year total (F1314\_F1A\_RV)

Type: numeric (double)  
 Range: [20380000,5.859e+09]  
 Unique values: 88    Missing: 15,457/24,462  
 Mean: 1.1e+09  
 Std. Dev.: 1.8e+09  
 Percentiles:        10%            25%            50%            75%            90%  
                          1.0e+08        1.8e+08        3.7e+08        8.7e+08        5.9e+09

**EndowValuPub**    Value of endowment assets at the end of the fiscal year (F1314\_F1A\_RV)

Type: numeric (double)  
 Range: [339445,3.595e+09]  
 Unique values: 87    Missing: 15,519/24,462  
 Mean: 5.8e+08  
 Std. Dev.: 7.7e+08  
 Percentiles:        10%            25%            50%            75%            90%  
                          1.5e+07        2.7e+07        1.0e+08        9.7e+08        1.6e+09

**RELAFFIL**        Religious affiliation (IC2013)

Type: numeric (double)  
 Range: [-2,103]  
 Unique values: 30    Missing: 592/24,462  
 Examples:            -2    Not applicable  
                          30    Roman Catholic  
                          66    Presbyterian Church (USA)

**HRTOTLT**        Grand total (S2013\_IS\_RV All instructional staff)

Type: numeric (double)  
 Range: [12,3499]  
 Unique values: 227    Missing: 635/24,462  
 Mean: 625.215  
 Std. Dev.: 740.714  
 Percentiles:        10%            25%            50%            75%            90%  
                          106            174            323            790            1236

---

**HRTOTLM** Grand total men (S2013\_IS\_RV All instructional staff)

---

Type: numeric (double)  
Range: [6,2196]  
Unique values: 184 Missing: 635/24,462  
Mean: 382.983  
Std. Dev.: 487.146  
Percentiles:      10%            25%            50%            75%            90%  
                         54                92                167            422            983

---

**HRTOTLW** Grand total women (S2013\_IS\_RV All instructional staff)

---

Type: numeric (double)  
Range: [2,1303]  
Unique values: 181 Missing: 635/24,462  
Mean: 242.232  
Std. Dev.: 261.867  
Percentiles:      10%            25%            50%            75%            90%  
                         50                81                144            261            508

---

**CONTROL** Control of institution (HD2013)

---

Type: numeric (double)  
Range: [0,1]  
Unique values: 2 Missing: 592/24,462  
Tabulation:      Freq.            Numeric Label:  
                         9,005            1 Public  
                         14,865          2 Private not-for-profit  
                         592                .

---

**ICLEVEL** Level of institution (HD2013)

---

Type: numeric (double)  
Range: [1,1]  
Unique values: 1 Missing: 592/24,462  
Tabulation:      Freq.            Numeric Label:  
                         23,870          1 Four or more years  
                         592                .

---

**LOCALE** Degree of urbanization (Urban-centric locale) (HD2013)

---

Type: numeric (double)  
Range: [11,42]  
Unique values: 11 Missing: 592/24,462  
Examples:        11 City: Large  
                         13 City: Small  
                         21 Suburb: Large  
                         31 Town: Fringe

---

**INSTSIZE** Institution size category (HD2013)

---

Type: numeric (double)  
Range: [1,5]  
Unique values: 5 Missing: 592/24,462  
Tabulation:      Freq.            Numeric Label:  
                         263                1 Under 1,000

---

9,651	2	1,000 - 4,999
4,419	3	5,000 - 9,999
3,384	4	10,000 - 19,999
6,153	5	20,000 and above
592	.	

---

<b>PCTADMIT</b>	Percent admitted - total (DRVIC2013_RV)				
-----------------	---	--	--	--	--

---

Type: numeric (double)  
Range: [9,97]  
Unique values: 69    Missing: 1,461/24,462  
Mean: 60.0053  
Std. Dev.: 19.0912

Percentiles:	10%	25%	50%	75%	90%
	32	49	64	75	83

---

<b>DVIC04</b>	Admissions yield - total (DRVIC2013_RV)				
---------------	---	--	--	--	--

---

Type: numeric (double)  
Range: [8,85]  
Unique values: 52    Missing: 1,461/24,462  
Mean: 32.5577  
Std. Dev.: 14.4747

Percentiles:	10%	25%	50%	75%	90%
	18	23	31	37	47

---

<b>EFUGFT</b>	Full-time undergraduate enrollment (DRVEF2013_RV)				
---------------	---	--	--	--	--

---

Type: numeric (double)  
Range: [0,40020]  
Unique values: 282    Missing: 592/24,462  
Mean: 8544.8  
Std. Dev.: 8828.3

Percentiles:	10%	25%	50%	75%	90%
	1515	2129	5068	13204	25084

---

<b>EFGRADFT</b>	Full-time graduate enrollment (DRVEF2013_RV)				
-----------------	--	--	--	--	--

---

Type: numeric (double)  
Range: [0,18166]  
Unique values: 209    Missing: 592/24,462  
Mean: 1668.89  
Std. Dev.: 2796.4

Percentiles:	10%	25%	50%	75%	90%
	0	66	502	2030	4753

---

<b>EFUGPT</b>	Part-time undergraduate enrollment (DRVEF2013_RV)				
---------------	---	--	--	--	--

---

Type: numeric (double)  
Range: [0,20883]  
Unique values: 244    Missing: 592/24,462  
Mean: 1305.23  
Std. Dev.: 2403.56

Percentiles:	10%	25%	50%	75%	90%
	22	76	416	1684	3147

---

<b>EFGRADPT</b>	Part-time graduate enrollment (DRVEF2013_RV)				
Type: numeric (double)					
Range: [0,5132]					
Unique values: 218 Missing: 592/24,462					
Mean: 898.931					
Std. Dev.: 970.549					
Percentiles:	10%	25%	50%	75%	90%
	0	75	490	1459	2145
<b>ENRTOT</b>	Total enrollment (DRVEF2013_RV)				
Type: numeric (double)					
Range: [344,57466]					
Unique values: 282 Missing: 592/24,462					
Mean: 12417.9					
Std. Dev.: 12616.4					
Percentiles:	10%	25%	50%	75%	90%
	2009	2882	7260	20053	31123
<b>EnrFt</b>	Full-time enrollment (DRVEF2013_RV)				
Type: numeric (double)					
Range: [281,50012]					
Unique values: 280 Missing: 592/24,462					
Mean: 10213.7					
Std. Dev.: 11096.8					
Percentiles:	10%	25%	50%	75%	90%
	1588	2373	5421	15755	27114
<b>EnrPt</b>	Part-time enrollment (DRVEF2013_RV)				
Type: numeric (double)					
Range: [0,20883]					
Unique values: 265 Missing: 592/24,462					
Mean: 2204.16					
Std. Dev.: 2817.43					
Percentiles:	10%	25%	50%	75%	90%
	44	253	1049	2972	6041
<b>SFTETOTL</b>	Total FTE staff (DRVHR2013_RV)				
Type: numeric (double)					
Range: [27,26749]					
Unique values: 260 Missing: 592/24,462					
Mean: 2565.66					
Std. Dev.: 3940.89					
Percentiles:	10%	25%	50%	75%	90%
	368	573	1128	2559	5433
<b>SFTEINST</b>	Instructional FTE (DRVHR2013_RV)				
Type: numeric (double)					
Range: [22,4012]					
Unique values: 234 Missing: 592/24,462					
Mean: 722.645					

Std. Dev.: 810.291  
 Percentiles:      10%            25%            50%            75%            90%  
                          149            211            404            916            1402

---

**SFTERSRC**      Research FTE (DRVHR2013\_RV)

---

Type: numeric (double)  
 Range: [0,1339]  
 Unique values: 46      Missing: 592/24,462  
 Mean: 81.3491  
 Std. Dev.: 244.107

Percentiles:      10%            25%            50%            75%            90%  
                          0            0            0            32            280

---

**NMETHOD01**      Standardized to 3-point Scale

---

Type: numeric (float)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          620      1 Not at all  
                          2,997      2 Occasionally  
                          20,845      3 Frequently

---

**NMETHOD02**      Standardized to 3-point Scale

---

Type: numeric (float)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          2,382      1 Not at all  
                          6,727      2 Occasionally  
                          15,353      3 Frequently

---

**NMETHOD05**      Standardized to 3-point Scale

---

Type: numeric (float)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          4,005      1 Not at all  
                          8,354      2 Occasionally  
                          12,103      3 Frequently

---

**NMETHOD07**      Standardized to 3-point Scale

---

Type: numeric (float)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          5,748      1 Not at all  
                          9,723      2 Occasionally  
                          8,991      3 Frequently

---

**NMETHOD09**      Standardized to 3-point Scale

---

Type: numeric (float)

Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           8,896            1 Not at all  
                           7,943            2 Occasionally  
                           7,623            3

**NMETHOD20**      Standardized to 3-point Scale

Type: numeric (float)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           2,482            1 Not at all  
                           7,773            2 Occasionally  
                           14,207           3 Frequently

**NMETHOD21**      Standardized to 3-point Scale

Type: numeric (float)  
 Range: [1,3]  
 Unique values: 3      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           7,313            1 Not at all  
                           9,447            2 Occasionally  
                           7,702            3 Frequently

**LCISCALE**      Generated Scale of Faculty Use of LCI Methods

Type: numeric (float)  
 Range: [12,36]  
 Unique values: 25      Missing: 0/24,462  
 Mean: 27.989  
 Std. Dev.: 5.04584  
 Percentiles:            10%            25%            50%            75%            90%  
                           21                25                29                32                34

**UGTOT**            Total Undergraduates

Type: numeric (float)  
 Range: [0,44201]  
 Unique values: 285      Missing: 592/24,462  
 Mean: 9850.04  
 Std. Dev.: 9978.01  
 Percentiles:            10%            25%            50%            75%            90%  
                           1710            2414            5506            5462            27765

**GRADTOT**      Total Graduate Students

Type: numeric (float)  
 Range: [0,22923]  
 Unique values: 236      Missing: 592/24,462  
 Mean: 2567.82  
 Std. Dev.: 3294.12  
 Percentiles:            10%            25%            50%            75%            90%

	0	223	1290	3358	6830
<b>PCTUGFT</b>	Percent of Enrolled Students that are Undergraduates				
Type: numeric (float)					
Range: [0,100]	.000e-06				
Unique values: 288	Missing: 0/24,462				
Mean: 85.5116					
Std. Dev.: 19.8078					
Percentiles:	10%	25%	50%	75%	90%
	67.1839	83.674	91.3317	97.5896	98.9383
<b>PCTGRADFT</b>	Percent of Enrolled Students that are Graduate Students				
Type: numeric (float)					
Range: [0,100]	.000e-07				
Unique values: 228	Missing: 0/24,462				
Mean: 43.236					
Std. Dev.: 30.2083					
Percentiles:	10%	25%	50%	75%	90%
	0	17.2249	42.5174	67.1053	83.2861
<b>SALARY09</b>	Aggregated - Salary based on 9/10 months (full-time employees only)				
Type: numeric (double)					
Range: [1,12]					
Unique values: 12	Missing: 14,215/24,462				
Examples:	7	\$70,000 - \$79,999			
	12	\$150,000 or more			
<b>SALARY12</b>	Aggregated - Salary based on 11/12 months (full-time employees only)				
Type: numeric (double)					
Range: [1,12]					
Unique values: 12	Missing: 20,181/24,462				
<b>PCTEXPINSTRCTPrv</b>	Percent of Expenditure Used for Instruction (Private Institutions)				
Type: numeric (float)					
Range: [9.234642,66.985687]	.000e-06				
Unique values: 201	Missing: 9,597/24,462				
Mean: 38.7838					
Std. Dev.: 7.15692					
Percentiles:	10%	25%	50%	75%	90%
	30.4131	34.6277	39.0499	42.9774	47.5598
<b>PCTEXPINSTRCTPub</b>	Percent of Expenditure Used for Instruction (Public Institutions)				
Type: numeric (float)					
Range: [19.801577,53.864189]	.000e-06				
Unique values: 88	Missing: 15,457/24,462				
Mean: 37.4685					
Std. Dev.: 7.13736					
Percentiles:	10%	25%	50%	75%	90%
	28.6728	32.2729	37.8925	43.3922	46.3366

---

**PCT EXP INSTRCT** Percent of Expenditure Used for Instruction (Combined – Public and Private)

---

Type: numeric (float)

Range: [9.234642,66.985687] .000e-06

Unique values: 289 Missing: 592/24,462

Mean: 38.2876

Std. Dev.: 7.17777

Percentiles:	10%	25%	50%	75%	90%
	28.8388	32.592	38.2275	43.1373	47.0979

---

**TUITANDFEES** Tuition and Fees (Combined)

---

Type: numeric (float)

Range: [5175,1.162e+09]

Unique values: 289 Missing: 592/24,462

Mean: 1.6e+08

Std. Dev.: 2.0e+08

Percentiles:	10%	25%	50%	75%	90%
	2.6e+07	4.4e+07	7.2e+07	2.0e+08	4.8e+08

---

**EXPENDTOT** Total Expenditure (Combined)

---

Type: numeric (float)

Range: [3026387,5.859e+09]

Unique values: 289 Missing: 592/24,462

Mean: 5.8e+08

Std. Dev.: 1.2e+09

Percentiles:	10%	25%	50%	75%	90%
	4.9e+07	8.5e+07	1.7e+08	4.8e+08	9.8e+08

---

**ENDOWVALUE** Total Endowment Value (Combined)

---

Type: numeric (float)

Range: [339445,6.539e+09]

Unique values: 283 Missing: 1,015/24,462

Mean: 4.8e+08

Std. Dev.: 6.7e+08

Percentiles:	10%	25%	50%	75%	90%
	1.6e+07	4.1e+07	1.5e+08	7.5e+08	1.5e+09

---

**Prof** Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	15,568	0 No
	9,431	1 Yes

---

**ASSOC PROF** Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
-------------	-------	-------

18,569      0 No  
 6,430        1 Yes

---

**AST PROF**                      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:              Freq.              Value  
                                  20,032              0 No  
                                  4,967                1 Yes

---

**LECTURER**                      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:              Freq.              Value  
                                  23,631              0 No  
                                  1,368                1 Yes

---

**INSTRUCTOR**                      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:              Freq.              Value  
                                  22,733              0 No  
                                  2,266                1 Yes

---

**EAST**                              Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:              Freq.              Value  
                                  18,161              0 No  
                                  6,838                1 Yes

---

**MIDWEST**                      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:              Freq.              Value  
                                  17,648              0 No  
                                  7,351                1 Yes

---

**SOUTH**                            Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:              Freq.              Value  
                                  22,583              0 No  
                                  2,416                1 Yes

<b>WEST</b>	Dummy Variable for Multiple Linear Regress	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	17,142	0 No
	7,857	1 Yes
<b>TENURED</b>	Dummy Variable for Multiple Linear Regress	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	10,234	0 No
	14,228	1 Yes
<b>AGorFOR</b>	Dummy Variable for Multiple Linear Regress	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	24,248	0 No
	214	1 Yes
<b>BIOSCI</b>	Dummy Variable for Multiple Linear Regress	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	22,637	0 No
	1,825	1 Yes
<b>BUSIN</b>	Dummy Variable for Multiple Linear Regress	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	22,989	0 No
	1,473	1 Yes
<b>EDUC</b>	Dummy Variable for Multiple Linear Regress	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	22,897	0 No
	1,565	1 Yes
<b>ENGIN</b>	Dummy Variable for Multiple Linear Regress	
Type: numeric (float)		

Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           23,925            0 No  
                           537                1 Yes

**ENGL**            Dummy Variable for Multiple Linear Regress

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           22,809            0 No  
                           1,653             1 Yes

**HEALTH**        Dummy Variable for Multiple Linear Regress

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           22,674            0 No  
                           1,788             1 Yes

**HIST/POLI SCI**    Dummy Variable for Multiple Linear Regress

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           22,833            0 No  
                           1,629             1 Yes

**HUMAN**         Dummy Variable for Multiple Linear Regress

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           22,460            0 No  
                           2,002             1 Yes

**FINARTS**        Dummy Variable for Multiple Linear Regress

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:            Freq.            Value  
                           22,081            0 No  
                           2,381             1 Yes

**MATH/STATS**    Dummy Variable for Multiple Linear Regress

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:            Freq.            Value

23,440      0 No  
 1,022      1 Yes

---

**PHYSSCI**      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          22,198      0 No  
                          2,264      1 Yes

---

**SOCSCI**      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          21,126      0 No  
                          3,336      1 Yes

---

**OTHERECH**      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          23,827      0 No  
                          635      1 Yes

---

**OTHNONTECH**      Dummy Variable for Multiple Linear Regress

---

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          22,324      0 No  
                          2,138      1 Yes

---

**PRIN ACT:TEACH** Is Teaching Your Principal Activity (Derived from HERI PRINACT)

---

Type: numeric (float)  
 Range: [0,1]  
 Unique values: 2      Missing: 0/24,462  
 Tabulation:      Freq.      Value  
                          4,812      0 No  
                          19,650      1 Yes

---

**AGE**      Chronological Age of Faculty Member

---

Type: numeric (float)  
 Range: [24,93]  
 Unique values: 64      Missing: 0/24,462  
 Mean: 53.0416  
 Std. Dev.: 11.584  
 Percentiles:      10%      25%      50%      75%      90%  
                          36      45      53      62      69

<b>DOCTORATE</b>	Does Faculty Member Possess a Doctorate?	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	5,285	0 No
	19,177	1 Yes
<b>HPWPREP0</b>	Hours Per Week Spent Preparing for Class = 0 (Dummy Variable)	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	23,197	0 No
	1,265	1 Yes
<b>HPWPREP1TO4</b>	Hours Per Week Spent Preparing for Class = 1-4 (Dummy Variable)	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	20,744	0 No
	3,718	1 Yes
<b>HPWPREP5TO8</b>	Hours Per Week Spent Preparing for Class = 5-8 (Dummy Variable)	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	18,547	0 No
	5,915	1 Yes
<b>HPWPREP9TO12</b>	Hours Per Week Spent Preparing for Class = 9-12 (Dummy Variable)	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	19,097	0 No
	5,365	1 Yes
<b>HPWPREP13TO16</b>	Hours Per Week Spent Preparing for Class = 13-16 (Dummy Variable)	
Type: numeric (float)		
Range: [0,1]		
Unique values: 2	Missing: 0/24,462	
Tabulation:	Freq.	Value
	21,024	0 No
	3,438	1 Yes
<b>HPWPREP17TO20</b>	Hours Per Week Spent Preparing for Class = 17-20 (Dummy Variable)	
Type: numeric (float)		

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	22,031	0 No
	2,431	1 Yes

---

**HPWPREPOVER21** Hours Per Week Spent Preparing for Class = 21+ (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	22,132	0 No
	2,330	1 Yes

---

**HPWRES0** Hours Per Week Spent Engaged in Research = 0 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	18,677	0 No
	5,785	1 Yes

---

**HPWRES1TO4** Hours Per Week Spent Engaged in Research = 1-4 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	15,931	0 No
	8,531	1 Yes

---

**HPWRES5TO8** Hours Per Week Spent Engaged in Research = 5-8 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	20,181	0 No
	4,281	1 Yes

---

**HPWRES9TO12** Hours Per Week Spent Engaged in Research = 9-12 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	22,128	0 No
	2,334	1 Yes

---

**HPWRES13TO16** Hours Per Week Spent Engaged in Research = 13-16 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
-------------	-------	-------

23,283      0 No  
1,179        1 Yes

---

**HPWRES17TO20**    Hours Per Week Spent Engaged in Research = 17-20 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2    Missing: 0/24,462

Tabulation:            Freq.            Value  
23,525                0 No  
935                     1 Yes

---

**HPWRESOVER21**    Hours Per Week Spent Engaged in Research = 21+ (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2    Missing: 0/24,462

Tabulation:            Freq.            Value  
23,047                0 No  
1,415                   1 Yes

---

**NOPUB**             Number of Publications = 0 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2    Missing: 0/24,462

Tabulation:            Freq.            Value  
19,864                0 No  
4,598                   1 Yes

---

**PUB1TO2**            Number of Publications = 1-2 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2    Missing: 0/24,462

Tabulation:            Freq.            Value  
19,245                0 No  
5,217                   1 Yes

---

**PUB3TO4**            Number of Publications = 3-4 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2    Missing: 0/24,462

Tabulation:            Freq.            Value  
20,984                0 No  
3,478                   1 Yes

---

**PUB5TO10**          Number of Publications = 5-10 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2    Missing: 0/24,462

Tabulation:            Freq.            Value  
20,121                0 No  
4,341                   1 Yes

---

**PUB11TO20** Number of Publications = 11-20 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	21,438	0 No
	3,024	1 Yes

---

**PUB21TO50** Number of Publications = 21-50 (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	22,062	0 No
	2,400	1 Yes

---

**PUBOVER51** Number of Publications = 51+ (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	23,058	0 No
	1,404	1 Yes

---

**OPN: STUD SUCCESS** Opinion: It is primarily up to individual students whether they succeed in my courses

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	2,960	0 Disagree
	21,502	1 Agree

---

**OPN: LEARN BEST** Opinion: Most students learn best when they do their assignments on their own

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	11,316	0 Disagree
	13,146	1 Agree

---

**OPN: PREP STUDNTS** Inst Opinion: Most students are well-prepared academically

---

Type: numeric (float)

Range: [0,1]

Unique values: 2 Missing: 0/24,462

Tabulation:	Freq.	Value
	9,082	0 Disagree
	15,380	1 Agree

---

**OPN: TCH VALUE** Inst Opinion: Faculty here are strongly interested in the academic problems of undergraduates

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	2,789	0 Disagree
	21,673	1 Agree

---

**STRESSLOW** Career Related Stress – Low Score (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	18,040	0 No
	6,422	1 Yes

---

**STRESSAVG** Career Related Stress – Average Score (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	13,579	0 No
	10,883	1 Yes

---

**STRESSHIGH** Career Related Stress – High Score (Dummy Variable)

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	17,305	0 No
	7,157	1 Yes

---

**RELIGAFIL** Is the institution religiously affiliated?

---

Type: numeric (float)

Range: [0,1]

Unique values: 2      Missing: 0/24,462

Tabulation:	Freq.	Value
	14,855	0 No
	9,607	1 Yes

---

**PCT INSRCT STAFF** Percentage of Staff that are Instructional Staff

---

Type: numeric (float)

Range: [10.514096,42.708332]

Unique values: 281      Missing: 0/24,462

Mean: 28.6288

Std. Dev.: 5.46773

Percentiles:	10%	25%	50%	75%	90%
	21.2774	25.8303	28.1563	32.4675	35.2857

---

APPENDIX E

CROSSTAB: LCISCALE AND SEX

*Crosstab: LCISCALE and SEX*

LCISCALE	What is your sex?		
	Male	Female	Total
12	20	19	39
	51.28	48.72	100
	0.16	0.16	0.16
13	30	9	39
	76.92	23.08	100
	0.24	0.08	0.16
14	71	30	101
	70.3	29.7	100
	0.56	0.25	0.41
15	96	41	137
	70.07	29.93	100
	0.76	0.35	0.56
16	158	66	224
	70.54	29.46	100
	1.25	0.56	0.92
17	181	93	274
	66.06	33.94	100
	1.43	0.79	1.12
18	258	149	407
	63.39	36.61	100
	2.04	1.26	1.66
19	280	138	418
	66.99	33.01	100
	2.21	1.17	1.71
20	381	224	605
	62.98	37.02	100
	3.01	1.9	2.47
21	388	232	620
	62.58	37.42	100
	3.07	1.96	2.53
22	525	301	826
	63.56	36.44	100
	4.15	2.55	3.38
23	614	389	1,003
	61.22	38.78	100
	4.85	3.29	4.1
24	697	482	1,179
	59.12	40.88	100

	5.51	4.08	4.82
25	783	561	1,344
	58.26	41.74	100
	6.19	4.75	5.49
26	787	672	1,459
	53.94	46.06	100
	6.22	5.69	5.96
27	873	735	1,608
	54.29	45.71	100
	6.9	6.22	6.57
28	934	816	1,750
	53.37	46.63	100
	7.39	6.91	7.15
29	914	877	1,791
	51.03	48.97	100
	7.23	7.42	7.32
30	915	964	1,879
	48.7	51.3	100
	7.23	8.16	7.68
31	908	999	1,907
	47.61	52.39	100
	7.18	8.46	7.8
32	757	983	1,740
	43.51	56.49	100
	5.99	8.32	7.11
33	690	944	1,634
	42.23	57.77	100
	5.46	7.99	6.68
34	615	877	1,492
	41.22	58.78	100
	4.86	7.42	6.1
35	448	697	1,145
	39.13	60.87	100
	3.54	5.9	4.68
36	324	517	841
	38.53	61.47	100
	2.56	4.38	3.44
Total	12,647	11,815	24,462
	51.7	48.3	100
	100	100	100

*Key: frequency, row percentage, column percentage*

APPENDIX F

CROSSTAB: LCISCALE AND ACADEMIC RANK

*Crosstab: LCISCALE and Academic Rank*

LCISCALE	What is your present academic rank?					
	Instructor	Lecturer	Assistant	Associate	Professor	Total
12	0	5	3	16	15	39
	0	12.82	7.69	41.03	38.46	100
	0	0.37	0.06	0.25	0.16	0.16
13	0	7	7	5	20	39
	0	17.95	17.95	12.82	51.28	100
	0	0.51	0.14	0.08	0.21	0.16
14	9	10	20	22	40	101
	8.91	9.9	19.8	21.78	39.6	100
	0.4	0.73	0.4	0.34	0.42	0.41
15	26	9	22	25	55	137
	18.98	6.57	16.06	18.25	40.15	100
	1.15	0.66	0.44	0.39	0.58	0.56
16	29	9	37	46	103	224
	12.95	4.02	16.52	20.54	45.98	100
	1.28	0.66	0.74	0.72	1.09	0.92
17	33	21	48	59	113	274
	12.04	7.66	17.52	21.53	41.24	100
	1.46	1.54	0.97	0.92	1.2	1.12
18	49	26	62	92	178	407
	12.04	6.39	15.23	22.6	43.73	100
	2.16	1.9	1.25	1.43	1.89	1.66
19	51	26	68	102	171	418
	12.2	6.22	16.27	24.4	40.91	100
	2.25	1.9	1.37	1.59	1.81	1.71
20	63	39	102	146	255	605
	10.41	6.45	16.86	24.13	42.15	100
	2.78	2.85	2.05	2.27	2.7	2.47
21	63	34	123	140	260	620
	10.16	5.48	19.84	22.58	41.94	100
	2.78	2.49	2.48	2.18	2.76	2.53
22	82	42	154	210	338	826
	9.93	5.08	18.64	25.42	40.92	100
	3.62	3.07	3.1	3.27	3.58	3.38
23	75	52	188	267	421	1,003
	7.48	5.18	18.74	26.62	41.97	100
	3.31	3.8	3.78	4.15	4.46	4.1
24	100	52	208	302	517	1,179
	8.48	4.41	17.64	25.61	43.85	100

	4.41	3.8	4.19	4.7	5.48	4.82
25	110	49	289	380	516	1,344
	8.18	3.65	21.5	28.27	38.39	100
	4.85	3.58	5.82	5.91	5.47	5.49
26	116	96	277	369	601	1,459
	7.95	6.58	18.99	25.29	41.19	100
	5.12	7.02	5.58	5.74	6.37	5.96
27	146	77	324	438	623	1,608
	9.08	4.79	20.15	27.24	38.74	100
	6.44	5.63	6.52	6.81	6.61	6.57
28	130	84	377	490	669	1,750
	7.43	4.8	21.54	28	38.23	100
	5.74	6.14	7.59	7.62	7.09	7.15
29	174	106	371	485	655	1,791
	9.72	5.92	20.71	27.08	36.57	100
	7.68	7.75	7.47	7.54	6.95	7.32
30	168	95	407	496	713	1,879
	8.94	5.06	21.66	26.4	37.95	100
	7.41	6.94	8.19	7.71	7.56	7.68
31	189	114	375	518	711	1,907
	9.91	5.98	19.66	27.16	37.28	100
	8.34	8.33	7.55	8.06	7.54	7.8
32	156	97	394	455	638	1,740
	8.97	5.57	22.64	26.15	36.67	100
	6.88	7.09	7.93	7.08	6.76	7.11
33	131	94	388	446	575	1,634
	8.02	5.75	23.75	27.29	35.19	100
	5.78	6.87	7.81	6.94	6.1	6.68
34	146	95	304	414	533	1,492
	9.79	6.37	20.38	27.75	35.72	100
	6.44	6.94	6.12	6.44	5.65	6.1
35	119	68	247	300	411	1,145
	10.39	5.94	21.57	26.2	35.9	100
	5.25	4.97	4.97	4.67	4.36	4.68
36	101	61	172	207	300	841
	12.01	7.25	20.45	24.61	35.67	100
	4.46	4.46	3.46	3.22	3.18	3.44
Total	2,266	1,368	4,967	6,430	9,431	24,462
	9.26	5.59	20.3	26.29	38.55	100
	100	100	100	100	100	100

*Key: frequency, row percentage, column percentage*

APPENDIX G

CROSSTAB: LCISCALE AND TENURE STATUS

*Crosstab: LCISCALE and Tenure Status*

LCISCALE	What is your tenure status at this institution?			Tenured	Total
	Institution has no tenure system	Not on tenure track, but institution has tenure system	On tenure track, but not tenured		
12	0	11	1	27	39
	0	28.21	2.56	69.23	100
	0	0.19	0.03	0.19	0.16
13	0	14	3	22	39
	0	35.9	7.69	56.41	100
	0	0.24	0.08	0.15	0.16
14	0	29	10	62	101
	0	28.71	9.9	61.39	100
	0	0.5	0.28	0.44	0.41
15	3	40	15	79	137
	2.19	29.2	10.95	57.66	100
	0.33	0.69	0.42	0.56	0.56
16	11	55	26	132	224
	4.91	24.55	11.61	58.93	100
	1.22	0.95	0.73	0.93	0.92
17	14	86	26	148	274
	5.11	31.39	9.49	54.01	100
	1.56	1.49	0.73	1.04	1.12
18	14	114	41	238	407
	3.44	28.01	10.07	58.48	100
	1.56	1.98	1.15	1.67	1.66
19	13	113	51	241	418
	3.11	27.03	12.2	57.66	100
	1.44	1.96	1.43	1.69	1.71
20	11	161	69	364	605
	1.82	26.61	11.4	60.17	100
	1.22	2.79	1.93	2.56	2.47
21	12	154	84	370	620
	1.94	24.84	13.55	59.68	100
	1.33	2.67	2.35	2.6	2.53
22	19	190	123	494	826
	2.3	23	14.89	59.81	100
	2.11	3.3	3.45	3.47	3.38
23	35	199	134	635	1,003
	3.49	19.84	13.36	63.31	100

	3.89	3.45	3.75	4.46	4.1
24	46	248	144	741	1,179
	3.9	21.03	12.21	62.85	100
	5.11	4.3	4.03	5.21	4.82
25	54	278	195	817	1,344
	4.02	20.68	14.51	60.79	100
	6	4.82	5.46	5.74	5.49
26	56	337	204	862	1,459
	3.84	23.1	13.98	59.08	100
	6.22	5.85	5.72	6.06	5.96
27	62	352	245	949	1,608
	3.86	21.89	15.24	59.02	100
	6.89	6.11	6.86	6.67	6.57
28	62	384	270	1,034	1,750
	3.54	21.94	15.43	59.09	100
	6.89	6.66	7.57	7.27	7.15
29	61	410	267	1,053	1,791
	3.41	22.89	14.91	58.79	100
	6.78	7.11	7.48	7.4	7.32
30	76	433	296	1,074	1,879
	4.04	23.04	15.75	57.16	100
	8.44	7.51	8.29	7.55	7.68
31	82	464	275	1,086	1,907
	4.3	24.33	14.42	56.95	100
	9.11	8.05	7.71	7.63	7.8
32	60	395	285	1,000	1,740
	3.45	22.7	16.38	57.47	100
	6.67	6.85	7.99	7.03	7.11
33	72	378	269	915	1,634
	4.41	23.13	16.46	56	100
	8	6.56	7.54	6.43	6.68
34	54	373	236	829	1,492
	3.62	25	15.82	55.56	100
	6	6.47	6.61	5.83	6.1
35	57	311	170	607	1,145
	4.98	27.16	14.85	53.01	100
	6.33	5.39	4.76	4.27	4.68
36	26	236	130	449	841
	3.09	28.06	15.46	53.39	100
	2.89	4.09	3.64	3.16	3.44
Total	900	5,765	3,569	14,228	24,462

	3.68	23.57	14.59	58.16	100
	100	100	100	100	100

*Key: frequency, row percentage, column percentage*

APPENDIX H

CROSSTAB: LCISCALE AND HIGHEST DEGREE EARNED

*Crosstab: LCISCALE and Highest Degree Earned*

LCISCALE	Highest Degree Earned					Total
	None (or Other)	Bachelor's	Master's	Doctorate (Ph. D, Ed.D., or Professional)		
12	2	0	6	31	39	
	5.13	0	15.38	79.49	100	
	0.23	0	0.14	0.16	0.16	
13	1	2	5	31	39	
	2.56	5.13	12.82	79.49	100	
	0.11	1.07	0.12	0.16	0.16	
14	3	4	23	71	101	
	2.97	3.96	22.77	70.3	100	
	0.34	2.14	0.55	0.37	0.41	
15	4	1	34	98	137	
	2.92	0.73	24.82	71.53	100	
	0.45	0.53	0.81	0.51	0.56	
16	4	5	51	164	224	
	1.79	2.23	22.77	73.21	100	
	0.45	2.67	1.21	0.86	0.92	
17	17	8	47	202	274	
	6.2	2.92	17.15	73.72	100	
	1.93	4.28	1.11	1.05	1.12	
18	10	3	73	321	407	
	2.46	0.74	17.94	78.87	100	
	1.13	1.6	1.73	1.67	1.66	
19	17	5	65	331	418	
	4.07	1.2	15.55	79.19	100	
	1.93	2.67	1.54	1.73	1.71	
20	24	7	100	474	605	
	3.97	1.16	16.53	78.35	100	
	2.72	3.74	2.37	2.47	2.47	
21	17	7	98	498	620	
	2.74	1.13	15.81	80.32	100	
	1.93	3.74	2.32	2.6	2.53	
22	29	2	120	675	826	
	3.51	0.24	14.53	81.72	100	
	3.29	1.07	2.85	3.52	3.38	
23	32	4	143	824	1,003	
	3.19	0.4	14.26	82.15	100	
	3.63	2.14	3.39	4.3	4.1	

24	38	8	158	975	1,179
	3.22	0.68	13.4	82.7	100
25	4.31	4.28	3.75	5.08	4.82
	50	16	202	1,076	1,344
	3.72	1.19	15.03	80.06	100
26	5.67	8.56	4.79	5.61	5.49
	53	6	232	1,168	1,459
	3.63	0.41	15.9	80.05	100
27	6.01	3.21	5.5	6.09	5.96
	63	11	252	1,282	1,608
	3.92	0.68	15.67	79.73	100
28	7.14	5.88	5.98	6.69	6.57
	70	17	266	1,397	1,750
	4	0.97	15.2	79.83	100
29	7.94	9.09	6.31	7.28	7.15
	61	18	283	1,429	1,791
	3.41	1.01	15.8	79.79	100
30	6.92	9.63	6.71	7.45	7.32
	87	16	342	1,434	1,879
	4.63	0.85	18.2	76.32	100
31	9.86	8.56	8.11	7.48	7.68
	75	8	357	1,467	1,907
	3.93	0.42	18.72	76.93	100
32	8.5	4.28	8.47	7.65	7.8
	62	16	332	1,330	1,740
	3.56	0.92	19.08	76.44	100
33	7.03	8.56	7.87	6.94	7.11
	54	9	285	1,286	1,634
	3.3	0.55	17.44	78.7	100
34	6.12	4.81	6.76	6.71	6.68
	49	5	306	1,132	1,492
	3.28	0.34	20.51	75.87	100
35	5.56	2.67	7.26	5.9	6.1
	36	6	246	857	1,145
	3.14	0.52	21.48	74.85	100
36	4.08	3.21	5.83	4.47	4.68
	24	3	190	624	841
	2.85	0.36	22.59	74.2	100
Total	2.72	1.6	4.51	3.25	3.44
	882	187	4,216	19,177	24,462
	3.61	0.76	17.23	78.4	100

| 100 100 100 100 100  
*Key: frequency, row percentage, column percentage*

APPENDIX I

CROSSTAB: LCISCALE AND FULL-TIME/PART-TIME STATUS

*Crosstab: LCISCALE and Full-time/Part-time Status*

LCISCALE	Are you considered a full-time employee of your institution for at least nine months?		
	No	Yes	Total
12	7	32	39
	17.95	82.05	100
	0.18	0.16	0.16
13	8	31	39
	20.51	79.49	100
	0.20	0.15	0.16
14	17	84	101
	16.83	83.17	100
	0.43	0.41	0.41
15	33	104	137
	24.09	75.91	100
	0.84	0.51	0.56
16	50	174	224
	22.32	77.68	100
	1.27	0.85	0.92
17	49	225	274
	17.88	82.12	100
	1.25	1.10	1.12
18	79	328	407
	19.41	80.59	100
	2.01	1.60	1.66
19	76	342	418
	18.18	81.82	100
	1.93	1.67	1.71
20	114	491	605
	18.84	81.16	100
	2.90	2.39	2.47
21	110	510	620
	17.74	82.26	100
	2.80	2.48	2.53
22	130	696	826
	15.74	84.26	100
	3.31	3.39	3.38
23	138	865	1,003
	13.76	86.24	100
	3.51	4.21	4.10

24	177	1,002	1,179
	15.01	84.99	100
25	4.50	4.88	4.82
	206	1,138	1,344
	15.33	84.67	100
26	5.24	5.54	5.49
	239	1,220	1,459
	16.38	83.62	100
27	6.08	5.94	5.96
	230	1,378	1,608
	14.30	85.70	100
28	5.85	6.71	6.57
	250	1,500	1,750
	14.29	85.71	100
29	6.36	7.31	7.15
	271	1,520	1,791
	15.13	84.87	100
30	6.89	7.40	7.32
	295	1,584	1,879
	15.70	84.30	100
31	7.50	7.72	7.68
	329	1,578	1,907
	17.25	82.75	100
32	8.37	7.69	7.80
	293	1,447	1,740
	16.84	83.16	100
33	7.45	7.05	7.11
	239	1,395	1,634
	14.63	85.37	100
34	6.08	6.79	6.68
	233	1,259	1,492
	15.62	84.38	100
35	5.93	6.13	6.10
	200	945	1,145
	17.47	82.53	100
36	5.09	4.60	4.68
	159	682	841
	18.91	81.09	100
Total	4.04	3.32	3.44
	3,932	20,530	24,462
	16.07	83.93	100

| 100  
*Key: frequency, row percentage, column percentage*

100

100

APPENDIX J

CROSTAB: LCISCALE AND AGGREGATED ACADEMIC DEPARTMENT

*Crosstab: LCISCALE and Aggregated Academic Department*

LCISCALE	Aggregated Department															Total
	Agriculture or Forestry	Biological Sciences	Business	Education	Engineering	English	Health-related	History or Political Science	Humanities	Fine Arts	Mathematics or Statistics	Physical Sciences	Social Sciences	Other Technical	Other Non-Technical	
12	0	2	1	0	1	0	3	2	1	3	6	6	5	1	8	39
	0	5.13	2.56	0	2.56	0	7.69	5.13	2.56	7.69	15.38	15.38	12.82	2.56	20.51	100
	0	0.11	0.07	0	0.19	0	0.17	0.12	0.05	0.13	0.59	0.27	0.15	0.16	0.37	0.16
13	0	0	1	0	0	0	2	2	2	5	6	7	5	2	7	39
	0	0	2.56	0	0	0	5.13	5.13	5.13	12.82	15.38	17.95	12.82	5.13	17.95	100
	0	0	0.07	0	0	0	0.11	0.12	0.1	0.21	0.59	0.31	0.15	0.31	0.33	0.16
14	2	12	7	3	5	2	5	4	3	2	22	10	8	4	12	101
	1.98	11.88	6.93	2.97	4.95	1.98	4.95	3.96	2.97	1.98	21.78	9.9	7.92	3.96	11.88	100
	0.93	0.66	0.48	0.19	0.93	0.12	0.28	0.25	0.15	0.08	2.15	0.44	0.24	0.63	0.56	0.41
15	1	15	17	4	7	4	11	6	3	8	22	13	13	7	6	137
	0.73	10.95	12.41	2.92	5.11	2.92	8.03	4.38	2.19	5.84	16.06	9.49	9.49	5.11	4.38	100
	0.47	0.82	1.15	0.26	1.3	0.24	0.62	0.37	0.15	0.34	2.15	0.57	0.39	1.1	0.28	0.56
16	2	12	18	5	5	14	14	14	11	15	36	28	27	6	17	224
	0.89	5.36	8.04	2.23	2.23	6.25	6.25	6.25	4.91	6.7	16.07	12.5	12.05	2.68	7.59	100
	0.93	0.66	1.22	0.32	0.93	0.85	0.78	0.86	0.55	0.63	3.52	1.24	0.81	0.94	0.8	0.92
17	3	24	16	4	6	9	18	10	15	18	41	40	40	12	18	274
	1.09	8.76	5.84	1.46	2.19	3.28	6.57	3.65	5.47	6.57	14.96	14.6	14.6	4.38	6.57	100
	1.4	1.32	1.09	0.26	1.12	0.54	1.01	0.61	0.75	0.76	4.01	1.77	1.2	1.89	0.84	1.12
18	1	26	28	7	12	8	26	23	28	26	52	62	54	13	41	407
	0.25	6.39	6.88	1.72	2.95	1.97	6.39	5.65	6.88	6.39	12.78	15.23	13.27	3.19	10.07	100
	0.47	1.42	1.9	0.45	2.23	0.48	1.45	1.41	1.4	1.09	5.09	2.74	1.62	2.05	1.92	1.66
19	5	34	26	14	18	10	27	27	30	32	44	54	46	12	39	418
	1.2	8.13	6.22	3.35	4.31	2.39	6.46	6.46	7.18	7.66	10.53	12.92	11	2.87	9.33	100

20	2.34	1.86	1.77	0.89	3.35	0.6	1.51	1.66	1.5	1.34	4.31	2.39	1.38	1.89	1.82	1.71
	10	57	34	14	23	22	37	42	40	46	56	85	77	26	36	605
	1.65	9.42	5.62	2.31	3.8	3.64	6.12	6.94	6.61	7.6	9.26	14.05	12.73	4.3	5.95	100
	4.67	3.12	2.31	0.89	4.28	1.33	2.07	2.58	2	1.93	5.48	3.75	2.31	4.09	1.68	2.47
21	6	55	37	18	12	18	39	52	41	49	48	86	92	18	49	620
	0.97	8.87	5.97	2.9	1.94	2.9	6.29	8.39	6.61	7.9	7.74	13.87	14.84	2.9	7.9	100
	2.8	3.01	2.51	1.15	2.23	1.09	2.18	3.19	2.05	2.06	4.7	3.8	2.76	2.83	2.29	2.53
22	8	72	46	20	38	23	60	67	58	68	65	112	98	30	61	826
	0.97	8.72	5.57	2.42	4.6	2.78	7.26	8.11	7.02	8.23	7.87	13.56	11.86	3.63	7.38	100
	3.74	3.95	3.12	1.28	7.08	1.39	3.36	4.11	2.9	2.86	6.36	4.95	2.94	4.72	2.85	3.38
23	7	83	64	28	33	35	78	87	69	91	56	123	136	47	66	1,003
	0.7	8.28	6.38	2.79	3.29	3.49	7.78	8.67	6.88	9.07	5.58	12.26	13.56	4.69	6.58	100
	3.27	4.55	4.34	1.79	6.15	2.12	4.36	5.34	3.45	3.82	5.48	5.43	4.08	7.4	3.09	4.1
24	17	109	65	34	36	42	82	93	99	86	67	136	179	38	96	1,179
	1.44	9.25	5.51	2.88	3.05	3.56	6.96	7.89	8.4	7.29	5.68	11.54	15.18	3.22	8.14	100
	7.94	5.97	4.41	2.17	6.7	2.54	4.59	5.71	4.95	3.61	6.56	6.01	5.37	5.98	4.49	4.82
25	16	114	81	56	37	52	97	118	129	125	71	152	176	43	77	1,344
	1.19	8.48	6.03	4.17	2.75	3.87	7.22	8.78	9.6	9.3	5.28	11.31	13.1	3.2	5.73	100
	7.48	6.25	5.5	3.58	6.89	3.15	5.43	7.24	6.44	5.25	6.95	6.71	5.28	6.77	3.6	5.49
26	14	116	97	63	38	75	113	111	122	135	61	133	227	43	111	1,459
	0.96	7.95	6.65	4.32	2.6	5.14	7.75	7.61	8.36	9.25	4.18	9.12	15.56	2.95	7.61	100
	6.54	6.36	6.59	4.03	7.08	4.54	6.32	6.81	6.09	5.67	5.97	5.87	6.8	6.77	5.19	5.96
27	15	120	86	69	30	73	130	144	130	155	62	170	234	54	136	1,608
	0.93	7.46	5.35	4.29	1.87	4.54	8.08	8.96	8.08	9.64	3.86	10.57	14.55	3.36	8.46	100
	7.01	6.58	5.84	4.41	5.59	4.42	7.27	8.84	6.49	6.51	6.07	7.51	7.01	8.5	6.36	6.57
28	20	127	114	100	41	100	124	110	152	169	71	156	269	40	157	1,750
	1.14	7.26	6.51	5.71	2.34	5.71	7.09	6.29	8.69	9.66	4.06	8.91	15.37	2.29	8.97	100
	9.35	6.96	7.74	6.39	7.64	6.05	6.94	6.75	7.59	7.1	6.95	6.89	8.06	6.3	7.34	7.15
29	15	127	109	94	34	114	139	128	167	180	55	164	264	50	151	1,791

	0.84	7.09	6.09	5.25	1.9	6.37	7.76	7.15	9.32	10.05	3.07	9.16	14.74	2.79	8.43	100
	7.01	6.96	7.4	6.01	6.33	6.9	7.77	7.86	8.34	7.56	5.38	7.24	7.91	7.87	7.06	7.32
30	8	119	136	133	37	123	160	129	173	199	53	168	267	45	129	1,879
	0.43	6.33	7.24	7.08	1.97	6.55	8.52	6.87	9.21	10.59	2.82	8.94	14.21	2.39	6.87	100
	3.74	6.52	9.23	8.5	6.89	7.44	8.95	7.92	8.64	8.36	5.19	7.42	8	7.09	6.03	7.68
31	18	165	119	132	39	137	158	108	158	208	34	149	273	33	176	1,907
	0.94	8.65	6.24	6.92	2.05	7.18	8.29	5.66	8.29	10.91	1.78	7.81	14.32	1.73	9.23	100
	8.41	9.04	8.08	8.43	7.26	8.29	8.84	6.63	7.89	8.74	3.33	6.58	8.18	5.2	8.23	7.8
32	13	108	113	181	20	144	151	97	142	183	33	117	215	32	191	1,740
	0.75	6.21	6.49	10.4	1.15	8.28	8.68	5.57	8.16	10.52	1.9	6.72	12.36	1.84	10.98	100
	6.07	5.92	7.67	11.57	3.72	8.71	8.45	5.95	7.09	7.69	3.23	5.17	6.44	5.04	8.93	7.11
33	8	122	83	154	20	172	102	97	148	191	21	99	216	31	170	1,634
	0.49	7.47	5.08	9.42	1.22	10.53	6.24	5.94	9.06	11.69	1.29	6.06	13.22	1.9	10.4	100
	3.74	6.68	5.63	9.84	3.72	10.41	5.7	5.95	7.39	8.02	2.05	4.37	6.47	4.88	7.95	6.68
34	14	95	71	150	22	185	88	84	132	180	17	88	190	20	156	1,492
	0.94	6.37	4.76	10.05	1.47	12.4	5.9	5.63	8.85	12.06	1.14	5.9	12.73	1.34	10.46	100
	6.54	5.21	4.82	9.58	4.1	11.19	4.92	5.16	6.59	7.56	1.66	3.89	5.7	3.15	7.3	6.1
35	7	69	60	156	13	149	70	45	92	131	13	58	135	15	132	1,145
	0.61	6.03	5.24	13.62	1.14	13.01	6.11	3.93	8.03	11.44	1.14	5.07	11.79	1.31	11.53	100
	3.27	3.78	4.07	9.97	2.42	9.01	3.91	2.76	4.6	5.5	1.27	2.56	4.05	2.36	6.17	4.68
36	4	42	44	126	10	142	54	29	57	76	10	48	90	13	96	841
	0.48	4.99	5.23	14.98	1.19	16.88	6.42	3.45	6.78	9.04	1.19	5.71	10.7	1.55	11.41	100
	1.87	2.3	2.99	8.05	1.86	8.59	3.02	1.78	2.85	3.19	0.98	2.12	2.7	2.05	4.49	3.44
Total	214	1,825	1,473	1,565	537	1,653	1,788	1,629	2,002	2,381	1,022	2,264	3,336	635	2,138	24,462
	0.87	7.46	6.02	6.4	2.2	6.76	7.31	6.66	8.18	9.73	4.18	9.26	13.64	2.6	8.74	100
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Key: frequency, row percentage, column percentage:

APPENDIX K

CROSSTAB: LCISCALE AND PROFESSIONAL DEVELOPMENT, PAID WORKSHOPS

*Crosstab: LCISCALE and Professional Development, Paid Workshops*

LCISCALE	Prof Develop: Paid workshops outside the institution focused on teaching		
	No	Yes	Total
12	33	6	39
	84.62	15.38	100
	0.18	0.1	0.16
13	37	2	39
	94.87	5.13	100
	0.2	0.03	0.16
14	89	12	101
	88.12	11.88	100
	0.48	0.21	0.41
15	124	13	137
	90.51	9.49	100
	0.66	0.23	0.56
16	197	27	224
	87.95	12.05	100
	1.05	0.47	0.92
17	238	36	274
	86.86	13.14	100
	1.27	0.63	1.12
18	343	64	407
	84.28	15.72	100
	1.83	1.12	1.66
19	364	54	418
	87.08	12.92	100
	1.94	0.94	1.71
20	498	107	605
	82.31	17.69	100
	2.66	1.87	2.47
21	515	105	620
	83.06	16.94	100
	2.75	1.83	2.53
22	664	162	826
	80.39	19.61	100
	3.54	2.83	3.38
23	813	190	1,003
	81.06	18.94	100
	4.34	3.32	4.1

24	961	218	1,179
	81.51	18.49	100
25	5.13	3.81	4.82
	1,086	258	1,344
26	80.8	19.2	100
	5.8	4.5	5.49
27	1,178	281	1,459
	80.74	19.26	100
28	6.29	4.9	5.96
	1,222	386	1,608
29	76	24	100
	6.52	6.74	6.57
30	1,336	414	1,750
	76.34	23.66	100
31	7.13	7.23	7.15
	1,391	400	1,791
32	77.67	22.33	100
	7.43	6.98	7.32
33	1,414	465	1,879
	75.25	24.75	100
34	7.55	8.12	7.68
	1,421	486	1,907
35	74.51	25.49	100
	7.59	8.48	7.8
36	1,279	461	1,740
	73.51	26.49	100
37	6.83	8.05	7.11
	1,122	512	1,634
38	68.67	31.33	100
	5.99	8.94	6.68
39	1,052	440	1,492
	70.51	29.49	100
40	5.62	7.68	6.1
	798	347	1,145
41	69.69	30.31	100
	4.26	6.06	4.68
42	558	283	841
	66.35	33.65	100
43	2.98	4.94	3.44
	<b>Total</b>	<b>18,733</b>	<b>5,729</b>
	76.58	23.42	100

| 100  
*Key: frequency, row percentage, column percentage*

100

100

APPENDIX L

CROSSTAB: LCISCALE AND TEACHING AWARD

*Crosstab: LCISCALE and Teaching Award*

LCISCALE	Have you ever received an award for outstanding teaching?		
	No	Yes	Total
12	27	12	39
	69.23	30.77	100
	0.18	0.12	0.16
13	28	11	39
	71.79	28.21	100
	0.19	0.11	0.16
14	71	30	101
	70.3	29.7	100
	0.48	0.31	0.41
15	83	54	137
	60.58	39.42	100
	0.56	0.56	0.56
16	162	62	224
	72.32	27.68	100
	1.1	0.64	0.92
17	183	91	274
	66.79	33.21	100
	1.24	0.94	1.12
18	274	133	407
	67.32	32.68	100
	1.86	1.37	1.66
19	272	146	418
	65.07	34.93	100
	1.85	1.5	1.71
20	401	204	605
	66.28	33.72	100
	2.72	2.1	2.47
21	384	236	620
	61.94	38.06	100
	2.6	2.43	2.53
22	521	305	826
	63.08	36.92	100
	3.53	3.14	3.38
23	623	380	1,003
	62.11	37.89	100
	4.23	3.91	4.1
24	725	454	1,179

	61.49	38.51	100
	4.92	4.67	4.82
25	856	488	1,344
	63.69	36.31	100
	5.81	5.02	5.49
26	888	571	1,459
	60.86	39.14	100
	6.02	5.87	5.96
27	956	652	1,608
	59.45	40.55	100
	6.49	6.71	6.57
28	1,058	692	1,750
	60.46	39.54	100
	7.18	7.12	7.15
29	1,096	695	1,791
	61.19	38.81	100
	7.44	7.15	7.32
30	1,129	750	1,879
	60.09	39.91	100
	7.66	7.72	7.68
31	1,128	779	1,907
	59.15	40.85	100
	7.65	8.01	7.8
32	990	750	1,740
	56.9	43.1	100
	6.72	7.72	7.11
33	946	688	1,634
	57.89	42.11	100
	6.42	7.08	6.68
34	835	657	1,492
	55.97	44.03	100
	5.66	6.76	6.1
35	662	483	1,145
	57.82	42.18	100
	4.49	4.97	4.68
36	443	398	841
	52.68	47.32	100
	3.01	4.09	3.44
Total	14,741	9,721	24,462
	60.26	39.74	100
	100	100	100

*Key: frequency, row percentage, column percentage*

APPENDIX M

CROSSTAB: LCISCALE AND INSTITUTIONAL CONTROL

*Crosstab: LCISCALE and Institutional Control*

LCISCALE	Control of institution (HD2013)		
	Public	Private non-profit	Total
12	23	15	38
	60.53	39.47	100
	0.26	0.10	0.16
13	20	19	39
	51.28	48.72	100
	0.22	0.13	0.16
14	55	43	98
	56.12	43.88	100
	0.61	0.29	0.41
15	70	63	133
	52.63	47.37	100
	0.78	0.42	0.56
16	103	115	218
	47.25	52.75	100
	1.14	0.77	0.91
17	119	143	262
	45.42	54.58	100
	1.32	0.96	1.10
18	180	221	401
	44.89	55.11	100
	2	1.49	1.68
19	204	205	409
	49.88	50.12	100
	2.27	1.38	1.71
20	269	322	591
	45.52	54.48	100
	2.99	2.17	2.48
21	244	360	604
	40.4	59.6	100
	2.71	2.42	2.53
22	335	465	800
	41.88	58.13	100
	3.72	3.13	3.35
23	380	592	972
	39.09	60.91	100
	4.22	3.98	4.07
24	448	696	1,144

	39.16	60.84	100
	4.98	4.68	4.79
25	496	821	1,317
	37.66	62.34	100
	5.51	5.52	5.52
26	501	920	1,421
	35.26	64.74	100
	5.56	6.19	5.95
27	602	971	1,573
	38.27	61.73	100
	6.69	6.53	6.59
28	642	1,074	1,716
	37.41	62.59	100
	7.13	7.23	7.19
29	615	1,128	1,743
	35.28	64.72	100
	6.83	7.59	7.3
30	649	1,189	1,838
	35.31	64.69	100
	7.21	8	7.7
31	663	1,189	1,852
	35.80	64.20	100
	7.36	8	7.76
32	611	1,095	1,706
	35.81	64.19	100
	6.79	7.37	7.15
33	560	1,048	1,608
	34.83	65.17	100
	6.22	7.05	6.74
34	516	940	1,456
	35.44	64.56	100
	5.73	6.32	6.10
35	391	726	1,117
	35	65	100
	4.34	4.88	4.68
36	309	505	814
	37.96	62.04	100
	3.43	3.40	3.41
Total	9,005	14,865	23,870
	37.73	62.27	100
	100	100	100

*Key: frequency, row percentage, column percentage*

APPENDIX N

CROSSTAB: LCISCALE AND HBCU INSTITUTIONS

Crosstab: LCISCALE and HBCU Institutions

LCISCALE	Historically Black College or University		Total
	No	Yes	
12	38	1	39
	97.44	2.56	100
	0.16	0.61	0.16
13	39	0	39
	100	0	100
	0.16	0	0.16
14	101	0	101
	100	0	100
	0.42	0	0.41
15	135	2	137
	98.54	1.46	100
	0.56	1.23	0.56
16	223	1	224
	99.55	0.45	100
	0.92	0.61	0.92
17	271	3	274
	98.91	1.09	100
	1.12	1.84	1.12
18	407	0	407
	100	0	100
	1.67	0	1.66
19	415	3	418
	99.28	0.72	100
	1.71	1.84	1.71
20	601	4	605
	99.34	0.66	100
	2.47	2.45	2.47
21	616	4	620
	99.35	0.65	100
	2.54	2.45	2.53
22	824	2	826
	99.76	0.24	100
	3.39	1.23	3.38
23	999	4	1,003
	99.6	0.4	100
	4.11	2.45	4.1
24	1,174	5	1,179
	99.58	0.42	100

	4.83	3.07	4.82
25	1,336	8	1,344
	99.4	0.6	100
	5.5	4.91	5.49
26	1,455	4	1,459
	99.73	0.27	100
	5.99	2.45	5.96
27	1,598	10	1,608
	99.38	0.62	100
	6.58	6.13	6.57
28	1,741	9	1,750
	99.49	0.51	100
	7.16	5.52	7.15
29	1,777	14	1,791
	99.22	0.78	100
	7.31	8.59	7.32
30	1,862	17	1,879
	99.1	0.9	100
	7.66	10.43	7.68
31	1,890	17	1,907
	99.11	0.89	100
	7.78	10.43	7.8
32	1,727	13	1,740
	99.25	0.75	100
	7.11	7.98	7.11
33	1,620	14	1,634
	99.14	0.86	100
	6.67	8.59	6.68
34	1,481	11	1,492
	99.26	0.74	100
	6.09	6.75	6.1
35	1,137	8	1,145
	99.3	0.7	100
	4.68	4.91	4.68
36	832	9	841
	98.93	1.07	100
	3.42	5.52	3.44
Total	24,299	163	24,462
	24,299	163	24,462
	99.33	0.67	100
	100	100	100

Key: frequency, row percentage, column percentage

APPENDIX O

CROSTAB: LCISCALE AND HERI REGION

*Crosstab: LCISCALE and HERI Region*

LCISCALE	HERI Region				
	East	Midwest	South	West	Total
12	9	11	3	16	39
	23.08	28.21	7.69	41.03	100
	0.13	0.15	0.12	0.2	0.16
13	11	12	5	11	39
	28.21	30.77	12.82	28.21	100
	0.16	0.16	0.21	0.14	0.16
14	26	23	10	42	101
	25.74	22.77	9.9	41.58	100
	0.38	0.31	0.41	0.53	0.41
15	23	48	18	48	137
	16.79	35.04	13.14	35.04	100
	0.34	0.65	0.75	0.61	0.56
16	38	77	21	88	224
	16.96	34.38	9.38	39.29	100
	0.56	1.05	0.87	1.12	0.92
17	64	91	29	90	274
	23.36	33.21	10.58	32.85	100
	0.94	1.24	1.2	1.15	1.12
18	103	120	32	152	407
	25.31	29.48	7.86	37.35	100
	1.51	1.63	1.32	1.93	1.66
19	98	119	55	146	418
	23.44	28.47	13.16	34.93	100
	1.43	1.62	2.28	1.86	1.71
20	155	159	62	229	605
	25.62	26.28	10.25	37.85	100
	2.27	2.16	2.57	2.91	2.47
21	169	167	80	204	620
	27.26	26.94	12.9	32.9	100
	2.47	2.27	3.31	2.6	2.53
22	230	237	90	269	826
	27.85	28.69	10.9	32.57	100
	3.36	3.22	3.73	3.42	3.38
23	286	277	105	335	1,003
	28.51	27.62	10.47	33.4	100
	4.18	3.77	4.35	4.26	4.1
24	315	360	125	379	1,179
	26.72	30.53	10.6	32.15	100

	4.61	4.9	5.17	4.82	4.82
25	379	417	120	428	1,344
	28.2	31.03	8.93	31.85	100
	5.54	5.67	4.97	5.45	5.49
26	434	416	149	460	1,459
	29.75	28.51	10.21	31.53	100
	6.35	5.66	6.17	5.85	5.96
27	459	501	154	494	1,608
	28.54	31.16	9.58	30.72	100
	6.71	6.82	6.37	6.29	6.57
28	489	555	151	555	1,750
	27.94	31.71	8.63	31.71	100
	7.15	7.55	6.25	7.06	7.15
29	514	536	180	561	1,791
	28.7	29.93	10.05	31.32	100
	7.52	7.29	7.45	7.14	7.32
30	552	567	185	575	1,879
	29.38	30.18	9.85	30.6	100
	8.07	7.71	7.66	7.32	7.68
31	542	576	193	596	1,907
	28.42	30.2	10.12	31.25	100
	7.93	7.84	7.99	7.59	7.8
32	498	510	168	564	1,740
	28.62	29.31	9.66	32.41	100
	7.28	6.94	6.95	7.18	7.11
33	457	535	152	490	1,634
	27.97	32.74	9.3	29.99	100
	6.68	7.28	6.29	6.24	6.68
34	428	448	137	479	1,492
	28.69	30.03	9.18	32.1	100
	6.26	6.09	5.67	6.1	6.1
35	314	345	106	380	1,145
	27.42	30.13	9.26	33.19	100
	4.59	4.69	4.39	4.84	4.68
36	245	244	86	266	841
	29.13	29.01	10.23	31.63	100
	3.58	3.32	3.56	3.39	3.44
Total	6,838	7,351	2,416	7,857	24,462
	27.95	30.05	9.88	32.12	100
	100	100	100	100	100

*Key: frequency, row percentage, column percentage*

APPENDIX P

FACULTY USE OF LCI METHODS, RESTRICTED MULTIPLE LINEAR REGRESSION

MODEL (MODEL 1)

*Faculty Use of LCI Methods, Restricted Multiple Linear Regression Model (Model 1)*

	<b>Coef.</b>	<b>Std. Err.</b>	<b>t value</b>	<b>β</b>	
LCISCALE					
AGE	0.004	0.003	1.500	0.010	
SEX (FEMALE)	1.663	0.064	26.030	0.165	***
AFR AMER/BLACK	1.147	0.225	5.100	0.032	***
AMER IND/AK NAT	0.415	0.329	1.260	0.008	
ASIAN AMER/ASIAN	0.055	0.167	0.330	0.002	
NATIVE HI/PAC ISL	0.950	0.661	1.440	0.009	
MEX AMER/CHICANO	0.725	0.322	2.250	0.014	*
PUERTO RICAN	0.684	0.512	1.340	0.008	
OTHER LATINO	0.280	0.251	1.110	0.007	
OTHER RACE	0.940	0.168	5.600	0.035	***
_cons	20.023	0.971	20.630		***

*Notes:*

Reference categories: WHITE/CAUCASIAN

Significance levels: \* p<0.05, \*\*p<0.01, \*\*\* p<0.001

Residual standard error: 604320.722 on 24,451 degrees of freedom

R-squared: 0.0297, Adjusted R-squared: 0.0293

F(10, 24451) = 74.72

APPENDIX Q

FACULTY USE OF LCI METHODS, RESTRICTED MULTIPLE LINEAR REGRESSION

MODEL (MODEL 2)

*Faculty Use of LCI Methods, Restricted Multiple Linear Regression Model (Model 2)*

	<b>Coef.</b>	<b>Std. Err.</b>	<b>t value</b>	<b><math>\beta</math></b>	
LCISCALE					
AGE	0.015	0.003	5.010	0.035	***
SEX (FEMALE)	0.926	0.062	14.840	0.092	***
AFR AMER/BLACK	0.754	0.209	3.600	0.021	***
AMER IND/AK NAT	0.355	0.305	1.160	0.007	
ASIAN AMER/ASIAN	0.525	0.157	3.340	0.020	***
NATIVE HI/PAC ISL	0.954	0.613	1.560	0.009	
MEX AMER/CHICANO	0.503	0.299	1.690	0.010	
PUERTO RICAN	0.529	0.475	1.110	0.007	
OTHER LATINO	0.228	0.233	0.980	0.006	
OTHER RACE	0.442	0.163	2.720	0.017	**
YRAPPOINT	0.022	0.003	6.720	0.049	***
ASSOC PROF	-0.011	0.079	-0.130	-0.001	
AST PROF	-0.237	0.121	-1.960	-0.019	
LECTURER	-0.220	0.162	-1.360	-0.010	
INSTRUCTOR	-0.163	0.145	-1.120	-0.009	
ADJUNCT	0.031	0.103	0.300	0.002	
TENURED	-0.208	0.103	-2.030	-0.020	*
DOCTORATE	0.028	0.091	0.310	0.002	
FULLSTAT	-0.273	0.123	-2.210	-0.020	
BIOSCI	-0.449	0.335	-1.340	-0.023	
BUSIN	-0.220	0.341	-0.650	-0.010	
EDUC	1.689	0.340	4.970	0.082	***
ENGIN	-1.250	0.378	-3.310	-0.036	***
ENGL	1.908	0.338	5.640	0.095	***
HEALTH	-0.608	0.344	-1.770	-0.031	
HIST/POLI SCI	-0.518	0.338	-1.530	-0.026	
HUMAN	0.166	0.335	0.500	0.009	
FINARTS	0.687	0.335	2.050	0.040	*
MATH/STATS	-3.615	0.357	-10.140	-0.143	***
PHYSSCI	-1.330	0.340	-3.910	-0.076	***
SOCSCI	-0.164	0.327	-0.500	-0.011	
OTHERTECH	-1.288	0.372	-3.460	-0.041	***
OTHNONTECH	0.487	0.333	1.460	0.027	
STEM	0.132	0.108	1.220	0.011	
FT UNDERGRD FAC	-0.320	0.090	-3.570	-0.029	***
PRIN ACT: TEACH	0.356	0.082	4.350	0.028	***
HPWPREP1TO4	-0.018	0.156	-0.110	-0.001	
HPWPREP5TO8	0.564	0.151	3.730	0.048	***

HPWPREP9TO12	0.716	0.154	4.650	0.059	***
HPWPREP13TO16	0.823	0.162	5.080	0.057	***
HPWPREP17TO20	0.875	0.170	5.140	0.052	***
HPWPREPOVER21	1.079	0.172	6.280	0.063	***
HPWRES1TO4	0.608	0.085	7.130	0.057	***
HPWRES5TO8	0.778	0.102	7.590	0.059	***
HPWRES9TO12	0.827	0.122	6.760	0.048	***
HPWRES13TO16	0.866	0.155	5.570	0.037	***
HPWRES17TO20	0.516	0.171	3.020	0.020	**
HPWRESOVER21	0.798	0.153	5.230	0.037	***
PUB1TO2	0.252	0.099	2.550	0.020	*
PUB3TO4	0.218	0.113	1.940	0.015	
PUB5TO10	0.023	0.110	0.200	0.002	
PUB11TO20	-0.137	0.122	-1.130	-0.009	
PUB21TO50	-0.204	0.134	-1.530	-0.012	
PUBOVER51	-0.373	0.163	-2.280	-0.017	*
DVLP: WRKSHPS	0.542	0.073	7.370	0.045	***
DVLP: NEW CRS	0.828	0.078	10.650	0.068	***
DVLP: TECH	0.476	0.073	6.550	0.042	***
TEACH AWARD	0.464	0.062	7.520	0.045	***
ACT: PEDAGOGY	1.537	0.066	23.270	0.146	***
OPN: STUD SUCCESS	-0.620	0.092	-6.740	-0.040	***
OPN: LEARN BEST	-0.771	0.060	-12.790	-0.076	***
OPN: PREP STUDNTS	0.628	0.062	10.090	0.060	***
OPN: TCH VALUE	-0.184	0.094	-1.960	-0.012	
STRESS: LOW	-0.356	0.076	-4.680	-0.031	***
STRESS: HIGH	0.427	0.071	6.010	0.039	***
_cons	-28.511	6.802	-4.190		***

*Notes:*

Reference categories: WHITE/CAUCASIAN, PROFESSOR, AG/FORESTRY, NOPUB, HPWPREP0, HPWRES0, STRESS: AVG

Significance levels: \* p<0.05, \*\*p<0.01, \*\*\* p<0.001

Residual standard error: 516135.039 on 24,396 degrees of freedom

R-squared: 0.1713, Adjusted R-squared: 0.1690

F(65, 24396) = 77.56