International Journal of Teaching and Learning in Higher Education 2019, Volume 31, Number 3, 378-389
http://www.isetl.org/ijtlhe/ ISSN 1812-9129

Faculty Members' Use of Learner-Centered Instruction at Institutions in the United States

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For over two decades, national conversation has focused on the need for learner-centered instruction in postsecondary education. Yet, in light of this conversation, relatively little is known about why faculty utilize these methods. What influences faculty members to employ learner-centered instruction in the classroom? This study utilizes data 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 findings suggest that individual faculty demographic characteristics, such as age and sex, and work experience characteristics, such as participation in faculty development activities, exert influences on the use of these teaching practices. This research contributes to gaps in the extant literature and expands knowledge about faculty members' use of learner-centered instruction through exploration of a large, national data set.

Since the early 1990s postsecondary education in the United States has experienced an increased level of attention to instructional practices related to student learning and achievement. Boyer (1990) argued for a reconceptualization of the definition of scholarship to include the dissemination of knowledge and the function of teaching, which he referred to as the "scholarship of teaching." Though not the first to suggest a focus on teaching, Boyer's work received national attention and prompted conversation related to these ideas. Scholars argued that students should be the focus of attention in the teaching and learning process, advocating for students to read, write, solve problems, and engage in discussion with the goal of engaging in higher-order thinking (Bonwell & Eison, 1991).

This paradigm challenged the traditional notion of faculty as the center of attention in the teaching and learning process and encouraged faculty to reconsider their roles and to shift the attention to students and engaging them in the learning process (Barr & Tag, 1995; King 1993; Stage, Muller, Kinzie, & Simmons, 1998). This philosophical shift represents an underpinning of learner-centered instruction: students should be at the center of the learning process. As the conversation evolved, authors produced resources for faculty to assist in the implementation of this philosophical shift, including a taxonomy of significant learning advocating for students to be exposed to multiple methods of learning (Fink, 2003), meta-analyses of literature about neuroscience and cognitive psychology to demonstrate pedagogical practices that could be employed in the classroom (Doyle, 2008, 2011), and practical steps to implement these changes within postsecondary classrooms (Blumberg, 2008).

However, promoting action in response to the emphasis on teaching and learning requires an understanding of what compels faculty members to utilize learner-centered pedagogical practices within their courses. Approaches to studying pedagogical practices used by postsecondary faculty have been varied and limited, with much of the extant research focusing on individual teaching techniques, commonly within particular disciplinary, institutional, or course-specific contexts. There exists a paucity of literature related to faculty members' employment of learner-centered instructional approaches, particularly at the national level. With the exception of a few studies utilizing national datasets (Nelson Laird, Garver, & Niskode-Dossett, 2011; Umbach & Wawrzynski, 2005; Webber, 2012), there is limited literature attempting to study faculty members' use of instructional practices. Monographs presenting data from surveys of faculty (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 pedagogical practice are relatively limited and largely rely on single-variable descriptive analysis.

This study utilizes the 2013 HERI Faculty Survey, a nationally administered instrument, as well as data obtained from Integrated Postsecondary Education Data System (IPEDS), 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 pedagogy.

Learner-Centered Instruction in Higher Education

The term learner-centered instruction represents a broad philosophy that encourages a focus on the learner when designing instruction, as well as an evolving set of pedagogical practices that foster student learning. Scholars writing about these practices may use terms

such as student-centered learning, student-centered teaching, learner-centered teaching, learner-centered education, and active learning. 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.

Not only are there 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. Learner-centered instruction may include pedagogical practices such as concept mapping, reflective exercises, completing multiple drafts of written work, simulations and role playing, cooperative and collaborative learning, peer-teaching and peer-evaluation, problem-based learning, and discussion and oral presentations. At a rudimentary level, the most common observation involves what learner-centered instruction is not: namely, traditional lecture.

The paradigm in which lecture is the primary form of instruction is the teacher-centered paradigm (Roper, 2003). Freeman, Eddy, McDonough, Smith, Okorafor, Jordt, and Wenderoth (2014) found that students exposed to lecture were one and a half times more likely to fail a course than those taught utilizing active learning techniques. In contrast to lecture, learner-centered instruction requires that students be engaged in the process of discovery. 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 faculty members, but rather to better engage students in the act of learning.

Faculty Members in the United States

Faculty members in the United States are an essential component of the instructional labor force at postsecondary institutions. 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. However, 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, 2016) and are a dynamic body that can be difficult to pinpoint. 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).

American faculty members are not a static group of individuals. The demographic composition of the professoriate has witnessed a number of changes in the recent past. Although historically outnumbered by men, there are increasing numbers of women represented in the professoriate (Hendrickson, Lane, Harris, & Dorman, 2013; Schuster & Finkelstein, 2006). Women are not the only "new" faces to the professoriate. 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). In addition to new demographic populations being better represented in the American faculty, there are also those who are staying in their respective roles longer. Essentially, older faculty members, who might have traditionally retired at an earlier age, are staying in their roles, creating an age bulge (Schuster, 2011).

Faculty Roles

The teaching role is one that is often assumed to have primacy for faculty: 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 solely 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).

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). The research role of faculty is essential in the production 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. Additionally, faculty members can be urged to engage in activities that promote economic development or advance the national agenda. This is closely related to the emphasis of research in faculty reward systems (Hermanowicz, 2012; Park, 2011).

As with all faculty expectations, the service role can be defined differently at varying institutions, but it often includes service to faculty members' respective disciplines, campuses, and local communities. Service to the discipline might include serving as a reviewer for academic journals, giving conference presentations, or providing 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 engagement in community activities (Myers & Myers, 2015).

Conceptual Framework of the Study

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) conducted a meta-analysis of over 400 publications, in addition to conducting their own surveys and interviews, resulting in explanation 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. The authors provided a description of the faculty work environment, including a focus on workload, teaching load, use of time, institutional setting, and performance and productivity.

Blackburn and Lawrence (1995) provided a 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, such as the employing institution's financial information, geographic location, composition of the faculty, student characteristics, institutional type, and available resources.

Lattuca and Stark (2009) focused on the teaching role of American faculty members, specifically related to curriculum development. The authors defined curriculum as an academic plan and cited the following variables as influences on course planning and curriculum design: student characteristics, external and internal forces, institutional resources, class size, faculty workload, and promotion and tenure status.

Building on the work of the models proposed by Bowen and Schuster (1986), Blackburn and Lawrence (1995), and Lattuca and Stark (2009), the independent variables in this study are grouped 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. 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. Institutional characteristics include institution size and control, HBCU status, admission characteristics, personnel, revenues, and expenses.

Methodology

The data used in this study come from the 2013 Faculty Survey administered by the Higher Education Research Institute (HERI) housed at the University of California-Los Angeles (UCLA). The 2013 administration of the survey had faculty from 289 institutions participate (Eagan et al., 2014). The data from the Faculty Survey were combined with data from the Integrated Postsecondary Education Data System (IPEDS) managed by the National Center for Education Statistics (NCES) to obtain additional information about institutions. 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.

The Faculty Survey instrument includes several questions related to teaching methods, course assignments, course methods, and course technology. 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.

Exploratory factor analysis is useful for model building by highlighting ways in which to cluster items together (Acock, 2014); this can inform how best to reduce or combine the variables in order to create a new dependent variable, in this case one related to learner-centered instruction. The decision was made to perform exploratory factor analysis utilizing only those 15 variables that aligned with learner-centered practices in the literature. The results yielded little support for multiple factors and suggested that 12 of the 15 variables hung together as a single factor. A new dependent variable (LCICALE) was created by combining the 12 variables. While not inclusive of all pedagogical practices that might fall into this group, this scale provides a reasonable representation of the use of LCI practices by postsecondary faculty in the United States. The new variable consisted of a 36-point scale representing American faculty members' use of learner-centered instructional methods.

Data Imputation

Missing observations accounted for less than 16% of the total observations in the dataset. Due to the

adequate number of valid observations, hot deck imputation was selected to fill in the missing observations in the dataset. 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 data.

Analysis

Ordinal logistic regression was utilized to analyze the dataset. Ordinal logistic regression can handle variables utilizing various measurement scales as independent variables in the model and is intended for dependent variables comprised of multiple categories that can be ranked from low to high (Gujarati, 2003; Long, 1997). Additionally, the model can provide the odds ratio of the outcomes, which is an exponentiation of the β coefficient. Odds ratios are generally easier to interpret, as they designate how often something occurs relative to how often it does not (Gujarati, 2003; Long, 1997).

The structural model of this method is:

$$\gamma^* = \beta_1 x + \varepsilon_i$$

The ordinal logistic regression analysis was performed utilizing nested models, or those models in which one model represents a subset of another model (Gujarati, 2003). The following models serve as an example:

$$\text{Model 1: } \gamma^* = \beta_1 x + \beta_2 x + \beta_3 x + \varepsilon_i$$
$$\text{Model 3: } \gamma^* = \beta_1 x + \beta_2 x + \beta_3 x + \beta_4 x + \beta_5 x + \beta_6 x + \beta_7 x + \varepsilon_i$$
$$\text{Model 2: } \gamma^* = \beta_1 x + \beta_2 x + \beta_3 x + \beta_4 x + \beta_5 x + \varepsilon_i$$

Appendix A provides the names and descriptions of all variables used in the model.

Ordinal logistic regression analysis is beneficial because the log likelihoods of the various fitted models can be compared. The goal of a fitted model is to maximize the log likelihood; higher values indicates a better fit. The unconstrained model containing the full set of independent variables had the highest log likelihood value. The unrestrained model is represented by the following equation:

$$LCISCALE = \beta_0 + Personal\ Demographic\ Variables + Work\ Experience\ Characteristics + Institutional\ Characteristics + \varepsilon_i$$

Results and Discussion

The results of the unrestricted ordinal logistic regression model are shown in Table 1, which displays both odds ratios and coefficients. Both odds ratios and the coefficients indicate how a change in an independent variable affects the dependent variable, holding all other variables constant.

Faculty Member's Use of Learner-Centered Pedagogical Practices

In general, faculty members seem to have embraced LCI practices to some degree. The results of the model suggested that the likelihood of faculty members using LCI methods increases as faculty members' chronological age increases; for a four-year increase in age, the odds of increasing a scale point on the LCISCALE are about 4% greater, significant at the .001 level. This may support Jones' (2008) suggestion that younger faculty members, who are likely new to the profession, 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 et al., 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 study may have had more exposure to the national conversation about enhancing pedagogy and learner-centered instruction than their younger peers.

For faculty members identifying as female, the odds of increasing a scale point on the LCISCALE are 51% greater than those who identify as male, significant at the .001 level. This 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 et al., 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 et al., 1990), a trait that may align with, and lead to, the constructivist foundation upon which many LCI methods are based.

Serving as a full-time faculty member appeared to have a negative effect, significant at the .001 level, while the odds of increasing a scale point on the LCISCALE are nearly 23% lower than part-time faculty. 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

Table 1
Faculty Use of LCI Methods, Ordinal Logistic Regression Unrestricted Model

LCISCALE	Odds Ratio	Coef.	Std. Err.	z	P>z	
AGE	1.045	0.044	0.007	6.020	0.000	***
SEX	1.513	0.414	0.025	16.710	0.000	***
WHITECAUC	0.787	-0.240	0.075	-3.200	0.001	**
AFAMBLACK	1.083	0.079	0.102	0.780	0.437	
AMINALSNAT	1.195	0.178	0.121	1.470	0.141	
ASNAMASN	0.998	-0.002	0.091	-0.020	0.985	
NATHAWPACIS	1.330	0.285	0.246	1.160	0.245	
MEXAMCHIC	1.109	0.104	0.130	0.800	0.423	
PUERTRIC	1.084	0.080	0.200	0.400	0.688	
OTHERLTNO	0.985	-0.016	0.102	-0.150	0.879	
OTHERRACE	1.097	0.093	0.078	1.190	0.235	
USCTZN	1.014	0.014	0.063	0.220	0.829	
NCHILD1	1.013	0.013	0.013	0.980	0.330	
NCHILD2	0.997	-0.003	0.011	-0.250	0.806	
YR1STAPPOINT	1.000	0.000	0.002	-0.020	0.985	
YRAPPOINT	1.013	0.013	0.002	7.290	0.000	***
ACADRANK	1.002	0.002	0.014	0.140	0.886	
ADJUNCT	1.032	0.031	0.042	0.750	0.455	
TENURE	0.992	-0.008	0.018	-0.440	0.659	
YRTENURE	1.001	0.001	0.001	1.190	0.235	
DEGEARN	0.977	-0.023	0.019	-1.210	0.224	
FULLSTAT	0.774	-0.256	0.066	-3.890	0.000	***
STEM	0.634	-0.455	0.027	-16.740	0.000	***
FTUGFAC	1.107	0.102	0.073	1.390	0.164	
FTADMIN	1.148	0.138	0.031	4.400	0.000	***
GRADONLYFAC	1.480	0.392	0.073	5.350	0.000	***
OTHERSTAFF	1.242	0.216	0.069	3.140	0.002	**
SALARYBASE	1.009	0.009	0.022	0.410	0.684	
PRINTEACH	1.077	0.075	0.036	2.100	0.036	*
COURSENUM	1.006	0.006	0.010	0.590	0.558	
PRIMARYTEACH	1.002	0.002	0.027	0.080	0.937	
HPW01	1.010	0.010	0.012	0.840	0.399	
HPW02	1.061	0.059	0.008	7.090	0.000	***
HPW06	1.043	0.042	0.008	5.100	0.000	***
PUBLISH01	0.923	-0.080	0.009	-9.150	0.000	***
PUBLISH02	1.084	0.081	0.013	6.130	0.000	***
PUBLISH03	1.134	0.126	0.016	7.810	0.000	***
PUBLISH04	1.064	0.062	0.016	3.900	0.000	***
DEVELOP01	1.230	0.207	0.029	7.130	0.000	***
DEVELOP06	1.378	0.321	0.031	10.460	0.000	***
DEVELOP07	1.210	0.191	0.029	6.630	0.000	***
TCHAWRD	1.186	0.170	0.024	6.990	0.000	***
TCHACT06	1.767	0.569	0.026	21.470	0.000	***
IMPTTCH	1.241	0.216	0.025	8.670	0.000	***
TCHOPN01	0.861	-0.149	0.017	-8.590	0.000	***
TCHOPN09	0.841	-0.174	0.015	-11.280	0.000	***
INSTOPN03	1.114	0.108	0.018	6.030	0.000	***
INSTOPN10	0.986	-0.014	0.017	-0.840	0.401	
SATIS01	0.910	-0.094	0.014	-6.860	0.000	***
SATIS05	0.965	-0.035	0.015	-2.430	0.015	*
SATIS06	1.122	0.115	0.017	6.710	0.000	***
SATIS11	0.972	-0.028	0.013	-2.120	0.034	*

SATIS13	1.006	0.006	0.019	0.340	0.731	
SATIS14	1.033	0.033	0.018	1.860	0.062	
SATIS16	1.003	0.003	0.011	0.270	0.785	
STRESS13	0.981	-0.019	0.023	-0.830	0.406	
SATIS_WORKPLACE	1.003	0.003	0.003	0.810	0.416	
STRESS	1.009	0.009	0.003	2.680	0.007	**
SATIS_WORKPLACE_GRP	0.953	-0.048	0.038	-1.280	0.202	
STRESS_GRP	1.070	0.068	0.035	1.960	0.051	
HBCU	1.396	0.334	0.150	2.230	0.026	*
CONTROL	1.022	0.022	0.037	0.590	0.556	
HRTOTLT	1.000	0.000	0.000	-0.680	0.498	
SFTETOTL	1.000	0.000	0.000	-0.660	0.510	
INSTSIZE	0.972	-0.029	0.027	-1.060	0.290	
PCTADMIT	0.999	-0.001	0.001	-0.910	0.361	
PCTUGFT	1.004	0.004	0.001	3.180	0.001	**
PCTGRADFT	0.999	-0.001	0.001	-2.540	0.011	*
ENRTOT	1.000	0.000	0.000	1.100	0.272	
TUITANDFEES	1.000	0.000	0.000	1.600	0.110	
EXPENDTOT	1.000	0.000	0.000	0.540	0.586	
PCTEXPINSTRCT	1.005	0.005	0.002	2.210	0.027	*
ENDOWVALUE	1.000	0.000	0.000	-1.100	0.272	
/cut1		26.248	3.575			
/cut2		26.972	3.573			
/cut3		27.750	3.572			
/cut4		28.314	3.572			
/cut5		28.881	3.572			
/cut6		29.304	3.572			
/cut7		29.748	3.572			
/cut8		30.074	3.572			
/cut9		30.437	3.572			
/cut10		30.727	3.572			
/cut11		31.037	3.572			
/cut12		31.354	3.572			
/cut13		31.671	3.572			
/cut14		31.986	3.573			
/cut15		32.293	3.573			
/cut16		32.604	3.573			
/cut17		32.931	3.573			
/cut18		33.257	3.573			
/cut19		33.615	3.573			
/cut20		34.011	3.573			
/cut21		34.435	3.573			
/cut22		34.940	3.573			
/cut23		35.605	3.574			
/cut24		36.532	3.574			

Notes:
Number of obs = 22,638
Log likelihood = -65073.399
LR chi2(71) = 3767.41
Prob > chi2 = 0.0000; Pseudo R2 = 0.0281
Significance levels: * p<0.05, **p<0.01, *** p<0.001

faculty member did not demonstrate a statistically significant relationship with the use of learner-centered instructional methods. 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).

For faculty teaching in a STEM-associated discipline, the odds of increasing a scale point on the LCISCALE are approximately 36.6% lower than those who do not teach in STEM-related fields. These findings appear to be consistent with those previous studies that suggested soft fields reported greater use of deep learning approaches than hard fields (Nelson Laird, Shoup, Kuh, & Schwarz, 2008; Webber & Tschepikow, 2012). This suggests that 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.

Unsurprisingly, faculty members who take advantage of professional development opportunities related to teaching and learning appear to be more inclined to utilize LCI methods. Participation in professional development including incentives to develop new courses (DEVELOP06) suggested the odds of increasing a scale point on the LCISCALE are nearly 38% greater than those faculty who do not participate. 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). 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).Faculty who are willing to engage in faculty development related to enhancing pedagogical practice would likely be willing to try new and different pedagogical approaches.

For faculty members who have won a teaching award, the odds of increasing a scale point on the LCISCALE are approximately 18% higher, significant at the .001 level. 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. The odds of increasing a point on the LCISCALE are nearly 77% higher for those who participate in organized activities around enhancing pedagogy (TCHACT06) compared to those who do not participate in these activities.

While institutional characteristics demonstrated effects on the use of LCI methods, these effects had lower levels of statistical significance than individual demographics and work experience characteristics. However, the results suggest 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. 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 place 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.

Implications for Practice

One of the primary implications of this 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). This information is essential if institutions wish to "move the needle" and promote greater learning for students. However, continuing to encourage the use of leaner-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, much of the conversation on LCI 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 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.

This study also has 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 they 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.

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. The findings of this study shed light on the effects of sex 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.

Continued research should explore individual learner-centered instructional methods from a national perspective. Doing this will provide greater understanding of factors 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 producing multiple drafts of written work.

While this research highlights that faculty members who engage in faculty development activities are more likely to utilize learner-centered instruction, questions still exist regarding what specific types of faculty development activities are most beneficial. 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.

The current study looked at American postsecondary faculty holistically; 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. Additionally, future studies may wish to continue to explore the influence of institutional characteristics on faculty teaching activities.

Conclusion

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. This information is essential if postsecondary institutions wish to "move the needle" and promote greater learning for students. The findings resulting from this study shed some light on contemporary faculty teaching activities as they relate to the use of learner-centered instructional practices. Not only do the characteristics of individual faculty members, such as sex and age, appear to demonstrate an effect on the use of learner-centered instructional methods, but so too does participation in faculty development activities related to enhancing teaching and learning practices, which appears to exert a strong influence on the use of these pedagogical practices. Additionally, institutional characteristics appear to be less influential, although future research may continue to explore these variables.

Taken together, these findings provide important information about factors that influence the methods faculty members utilize 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.

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Appendix A

Table 2
Variables Names and Descriptions

Variable Name	Variable Description
Personal Demographic Variables	
AGE	Chronological age
SEX	Sex (male/female)
WHITECAUC	White/Caucasian
AFAMBLACK	African American/Black
AMINALSNAT	American Indian/Alaska Native
ASNAMASN	Asian American/Asian
NATHAWPACIS	Native Hawaiian/Pacific Islander
MEXAMCHIC	Mexican American/Chicano
PUERTRIC	Puerto Rican
OTHERLTNO	Other Latino
OTHERRACE	Other Race
USCTZN	U.S. Citizen
NCHILD1	# children < 18 years
NCHILD2	# children ≥ 18 years
Work Experience Variables	
YR1STAPPOINT	Year of 1st academic appointment
YRAPPOINT	Year of appointment at present institution
ACADRANK	Academic rank
ADJUNCT	Adjunct faculty member
TENURE	Tenure status
YRTENURE	Year tenure was granted
DEGEARN	Highest degree earned
FULLSTAT	Full-time employee
STEM	Works in STEM department
FTUGFAC	Full-time undergraduate faculty
FTADMIN	Full-time administrator
GRADONLYFAC	Graduate-only faculty
OTHERSTAFF	Other staff
SALARYBASE	Base institutional salary
PRINTEACH	Teaching is principal activity
COURSENUM	# of courses taught
PRIMARYTEACH	Types of courses primarily taught
HPW01	Hours/ week: Scheduled teaching
HPW02	Hours/week: Preparing for teaching
HPW06	Hours/week: Advising students
PUBLISH01	Publish: In academic or professional journals
PUBLISH02	Publish: Chapters in edited volumes
PUBLISH03	Publish: Books, manuals, or monographs
PUBLISH04	Publish: Other
DEVELOP01	Prof develop: Paid workshops outside institution
DEVELOP06	Prof develop: Incentives to develop new courses
DEVELOP07	Prof develop: Incentives to integrate new technology
TCHAWRD	Received an award for outstanding teaching
TCHACT06	Teaching activity: Organized activities around pedagogy
IMPTTCH	Importance: Teaching
TCHOPN01	Opinion: Up to individual students whether they succeed
TCHOPN09	Opinion: Students learn best doing assignments on their own
INSTOPN03	Opinion: Most students are well-prepared academically
INSTOPN10	Opinion: My teaching is valued by faculty in my department

SATIS01	Satisfaction: Salary
SATIS05	Satisfaction: Teaching load
SATIS06	Satisfaction: Quality of students
SATIS11	Satisfaction: Job security
SATIS13	Satisfaction: Course assignments
SATIS14	Satisfaction: Freedom to determine course content
SATIS16	Satisfaction: Prospects for career advancement
STRESS13	Stress: Teaching load
SATIS_WORKPLACE	Workplace Satisfaction
STRESS	Career related stress
SATIS_WORKPLACE_GRP	Workplace satisfaction: Combined
STRESS_GRP	Career related stress: Combined
Institutional Variables	
HBCU	Historically Black College or University
CONTROL	Control: Public
HRTOTLT	Grand total: All instructional staff
SFTETOTL	Total FTE staff
INSTSIZE	Institution size category
PCTADMIT	% admitted - total
PCTUGFT	% of enrolled students - undergraduates
PCTGRADFT	% of enrolled students - graduate students
ENRTOT	Total enrollment
TUITANDFEES	Total tuition and fees
EXPENDTOT	Total institutional expenditure
PCTEXPINSTRCT	% of expenditure used for instruction
ENDOWVALUE	Total endowment value