

Faculty types and effective teaching: A cautionary exploration of how faculty spend their time

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Abstract

Most research on faculty time focuses on research productivity, leaving the time they spend on other activities largely unexplored. Time spent teaching is certainly as core to institutional missions as research and is more likely to shape students' experiences and learning. This large-scale, multi-institution study of over 16,000 full-time faculty examines how much time they spend on teaching, research, and service. Five distinct groups, based on time use, are described. Additionally, the relationships between the groupings and the use of effective educational practices are explored. Surprising results, such as teaching-heavy faculty scoring the lowest on measures of teaching effectiveness, raise questions about faculty roles and autonomy and what conditions inspire the use of best practices in teaching.

Faculty types and effective teaching: A cautionary exploration of how faculty spend their time

More frequent calls for accountability in higher education have led to increased scrutiny on what students are doing and learning while in college. Research on student time often includes a component of time spent studying or on other academic activities (McCormick, 2011). Faculty are important contributors to student learning (Kezar & Maxey, 2014) so it would make sense for there to be a solid base of research on how faculty spend their time engaging students in learning. Most of the research on faculty time, however, is focused on their contributions to research.

Previous research indicates that faculty members across institutions and ranks tend to be increasing time spent on research (Milem, Berger, & Dey, 1999). As institutions aim to climb the ranks of academic prominence, faculty time allotments vary to support institutional initiatives as well as their individual faculty members' tenure, rank, and promotional status (Link, Swann, & Bozeman, 2008). For example, institutions are more likely to financially reward faculty whose research increases institutional standings, while faculty who spend more time on teaching see little to no impact on their salaries (Melguizo & Strober 2007). While faculty time allotments differ by institutional type, reward structure, and academic discipline, little research has been done to investigate whether and how faculty can be grouped according to how they divide their time between teaching, research, and service.

Current trends of lower public investment in higher education and a greater emphasis on measurable outcomes from the college experience have led to calls for quantifiable measures of faculty time – particularly as they relate to research productivity (Shaker & Plater, 2016). While this emphasis is understandable given the value placed on research within the academy, it leaves several important areas left largely unexplored. For example, some researchers have noted, that this emphasis does not capture voluntary faculty work done in service of the public good, which can account for up to 30% of

how faculty spend their time (Nelson Laird, 2015). However, more glaringly, this orientation has largely disregarded faculty time allotment and its relationship to good teaching. The relative ease of measuring research productivity compared to service and teaching “productivity” seems another likely factor in explaining these gaps (Shaker & Plater, 2016). Yet, contributions in these areas, particularly teaching, are certainly as core to institutional missions as research and it is contributions in teaching that mostly likely shape students experience and learning.

Teaching-related activities, and effective teaching practices in particular, have been well-researched in the higher education community. These practices encompass a wide range of faculty behaviors in the classroom. For example, a focus on reflective and integrative learning has been linked to increasing critical thinking, cognition, and literacy skills in college (Nelson Laird, Seifert, Pascarella, Mayhew, & Blaich, 2014). Further, instructors who facilitate robust discussions and who intentionally frame assignments to encourage deeper reflection on course materials are more likely to influence higher-order learning in a positive direction (Pehmer, Gröschner, & Seidel, 2015).

Given the array of expectations and increased scrutiny from the various stakeholders, faculty must be careful and intentional with how they balance their time. Although previous research focuses on faculty time allotment and the connection to research productivity, this study examines how much time faculty spend on teaching, research or creative work, and service activities, and aims to connect how distinct kinds of faculty and faculty at various kinds of institutions divide their time between these three scholarly activities. Additionally, this study examines the relationships between time spent on these activities and the use of effective educational practices. The following research questions guided this study:

1. What typology of faculty results from an analysis of how they divide their time between teaching, research, and service?
2. How do faculty characteristics vary by the resulting groups?

3. How do institution characteristics vary by the resulting groups?
4. How do teaching practices vary by the resulting groups?

Methods

Data

The data for this study come from the 2017 administration of the Faculty Survey of Student Engagement (FSSE). FSSE was designed to complement the National Survey of Student Engagement, which is administered to undergraduate students. The purpose of FSSE is to measure faculty and instructor perceptions of and involvement in undergraduate student engagement at four-year colleges and universities. More specifically, FSSE focuses on the nature and frequency of student-faculty interactions, faculty emphasis on educational practices that are empirically linked with student learning and development, faculty values for institutional support and high-impact practice participation, and how faculty organize their time both in and out of the classroom. In 2017, FSSE was administered to 24,418 faculty teaching at least one undergraduate course at 154 four-year colleges and universities. As part-time faculty would naturally limit the time spent on teaching, research, and service, the respondents in this study were limited to the 16,143 faculty members who reported being employed full-time.

Respondents

The faculty respondents in this study were from a variety of disciplinary areas with the largest proportions in Art and Humanities (22%); Physical Sciences, Mathematics, and Computer Science (12%); and Social Science fields (12%). Around a quarter each of the faculty held the rank Full Professor (29%), Associate Professor (27%), and Assistant Professor (28%) with a smaller proportion as Lecturer or Instructor (16%). Around half of the faculty (46%) were tenured, with an additional two in five (22%) on the tenure track. One in ten faculty (9%) were at institutions without a tenure system, and 23% were not

on the tenure track but their institution did have a tenure system. A little less than half of faculty identified as men (48%) or as women (46%). Due to very small numbers, faculty who chose another gender identity other than man or woman were excluded from this study. Two-thirds (70%) identified as White with smaller proportions identifying as Asian (6%), Black or African American (6%), or Hispanic or Latino (4%). Most faculty (83%) identified as straight (heterosexual). Details about faculty respondents' demographics and characteristics by faculty time-use grouping can be found in Table 1.

The faculty in this study were from a variety of institution types with the largest proportions at Master's-granting institutions with large programs (27%), doctoral-granting institutions with moderate levels of research (21%), and doctoral-granting institutions with higher levels of research (12%). Most were at publicly controlled institutions (71%). Under half (42%) were at very large institutions (with undergraduate enrollments of 10,000 or more), and half (50%) were at selectively competitive institutions. Details about the institutions of faculty respondents by faculty time-use grouping can be found in Table 2.

Measures

Key variables of interest in this study are faculty time spent on teaching, research, and service. FSSE asks faculty, in a typical seven-day week, about how many hours do they spend on teaching activities (preparing, teaching class sessions, grading, meeting with students outside of class, etc.); research, creative, or scholarly activities; and service activities (committee work, administrative duties, etc.). Response options for these items are the categories 0, 1-4, 5-8, 9-12, 13-16, 17-20, 21-30, and more than 30 hours. For use in this study, an estimate of hours was created using the midpoints of the ranged response option categories, "0" was recoded to zero, and "More than 30 hours" was coded as 32.5 hours. Other variables of interest are a selection of FSSE Scales (listed in Table 3). These scales were created and rigorously tested for use as measures of effective pedagogical practice (FSSE, 2016;

BrckaLorenz, Chiang, & Nelson Laird, 2014). More information about these scales can be found on the FSSE website and in Table 3. Additional demographics and characteristics examined include those in Tables 1 and 2.

Analyses

To answer the first research question, a two-step cluster analysis was conducted. After an examination of percentile distributions and preliminary clusters of faculty time, a five-cluster solution was selected. The silhouette measure of cohesion and separation (a measure of cluster quality) was between .2 and .5 indicating a fair clustering solution (Rousseeuw, 1987).

To answer the second and third research questions, a series of chi-square analyses and standardized residuals were computed. Standardized residuals greater than 2 or less than -2 were considered notable differences (Agresti & Finley, 2009). Faculty demographics and characteristics included those in Tables 1 and 2.

To answer the final research question, a series of Ordinary Least Squares (OLS) regression models were examined. In each of these models one of the eight FSSE Scale measures served as the dependent variable. The independent variable of interest was the faculty grouping. Effect coding was used so that coefficients could be interpreted compared to the average faculty member as opposed to a reference group (Mayhew & Simonoff, 2015). Additionally, continuous measures were standardized before entry into models so that unstandardized coefficients could be interpreted as effect sizes. Sometimes with nested data researchers choose to use hierarchical linear modeling (HLM) instead of OLS, but only one of the FSSE Scale measures had notable variation at the institution level (see Table 3). Because the majority of variance in these measures was at the faculty-level, and parameter estimates tend to be similar between OLS and HLM when group level variance is small (Astin & Denson, 2009; Niehaus, Campbell, & Inkelas, 2013), we chose to focus our analysis on the faculty-level in this paper.

Additional controls included in the analyses are those faculty demographics and institutional characteristics in Tables 1 and 2.

Limitations

Institutions self-select to participate in FSSE and can select their own faculty samples which may limit generalizability. Additionally, faculty choose one course which they are teaching or taught during the current school year to respond to questions about their teaching practices so these results may not represent all the courses they teach. Finally, some groups of faculty were small, such as those that identified as a gender identity other than man or woman, and were removed from this study. Other groups such as those that identified as American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander or faculty who identified with a sexual orientation other than straight (heterosexual) were grouped together to create larger subpopulations of faculty. Removing small groups and collapsing others may lead to results that do not apply to all subpopulations of faculty and this variation should be further examined in future research.

Results

1. What typology of faculty results from an analysis of how they divide their time between teaching, research, and service?

Five distinct groups of faculty were identified in this study. The first group, *Classic Faculty*, represented faculty that spend most of their time teaching, a moderate amount of time on research, a low amount on service activities. This group made up 16.3% of the total faculty. The second group, *Teaching-Heavy Faculty*, made up a third of faculty (32.5%) and spent a high amount of time teaching with low levels of research and service. *Research-Heavy Faculty*, the third group which made up 15.5% of faculty, spent most of their time on research and a moderate amount of time on teaching, and a low amount of time on service. The fourth and smallest group (9.0%), *Service-Heavy Faculty*, spend most of

their time on service activities, a moderate amount of time on teaching, and a low amount of time on research. The fifth group, *Moderate-Load Faculty*, made up a quarter of faculty (26.7%), spent a moderate amount of time on teaching, and low amounts of time on research and service. Note that these descriptions are relative. Although the *Classic Faculty* group spends a “low” amount of time on service, they still spend a notable 9.1 average hours per week on service activities. The average amount of time spent on activities within each of these groups can be found in Figure 1, and a distribution can be found in Figure 2.

2. How do faculty characteristics vary by the resulting groups?

Faculty disciplinary area, academic rank, and tenure status vary by all the five faculty groups. Gender identity and racial/ethnic identification vary for most groupings. Sexual orientation doesn’t vary for any of the faculty groups except for those who preferred not to respond about their sexual orientation. For details about these differences, see Table 4.

Classic Faculty. *Classic Faculty* are more likely to be in Arts & Humanities fields and less likely to be in Health Professions or Service Professions fields. They are more likely to be Full Professors or Assistant Professors and much less likely to be Lecturers or Instructors. They are much more likely to be on the tenure track or tenured. They are slightly more likely to identify as Asian, Black or African American, or multiracial and less likely to identify as White.

Teaching-heavy Faculty. *Teaching-heavy Faculty* are much more likely to be in Physical Sciences, Mathematics, or Computer Science fields and slightly more likely to be in Health Professions. They are slightly less likely to be in Business or Education. They are much more likely to be Lecturers or Instructors and much less likely to be Full Professors or Associate Professors. They are more likely to not be on the tenure track or at an institution that doesn’t have a tenure track and much less likely to be

tenured. They are more likely to identify as women and less likely to identify as men. They are less likely to identify as Asian, Black or African American, or Hispanic or Latino and more likely to identify as White.

Research-heavy Faculty. *Research-heavy Faculty* are more likely to be in the fields of Biological Sciences, Agriculture, and Natural Resources; Physical Sciences, Mathematics, and Computer Science; Social Sciences; and Engineering. They are less likely to be in the fields of Arts and Humanities, Education, and Health Professions. They are more likely to be Full Professors or Assistant Professors and less likely to be Lecturers or Instructors. They are more likely to be tenured or on the tenure track. They are more likely to identify as men and less likely to identify as women. They are much more likely to identify as Asian and less likely to identify as Black or African American or White.

Service-heavy Faculty. *Service-heavy Faculty* are less likely to be in Biological Sciences, Agriculture, and Natural Resources fields. They are more likely to be Full Professors or Associate Professors and less likely to be Assistant Professors, Lecturers, or Instructors. They are more likely to be tenured and less likely to be on the tenure track.

Moderate-load Faculty. *Moderate-load Faculty* are less likely to be in Arts and Humanities; Biological Sciences, Agriculture, and Natural Resources; Physical Sciences, Mathematics, or Computer Science; and Engineering fields. They are more likely to be in Education, Health Professions, and Social Service Professions fields. They are more likely to be Lecturers or Instructors and less likely to be Assistant Professors. They are more likely to not on the tenure track or be at institutions without a tenure system. They are less likely to be on the tenure track. They are more likely to identify as Black or African American or Hispanic or Latino and are less likely to identify as Asian.

3. How do institution characteristics vary by the resulting groups?

Faculty at institutions with different Carnegie classifications and Barron's selectivity ratings varied by all the faculty groups. Faculty at institutions with different institutional control and undergraduate enrollment size varied by most of the faculty groups. For details about these differences, see Table 5.

Classic Faculty. *Classic Faculty* are more likely to be at doctoral (moderate research) and Master's-granting (large or medium programs) institutions and less likely to be at doctoral (highest research) and baccalaureate (diverse programs) institutions. They are more likely to be at public institutions and less likely to be at private institutions. They are more likely to be at large (5,000-9,999 undergraduate enrollment) institutions and less likely to be at very small (fewer than 1000) institutions. They are more likely to be at less competitive institutions and less likely to be at very competitive or most competitive institutions.

Teaching-heavy Faculty. *Teaching-heavy Faculty* are more likely to be at Master's-granting (large or medium programs) and baccalaureate-granting institutions and less likely to be at doctoral institutions. They are more likely to be at private institutions and less likely to be at public institutions. They are more likely to be at very small (fewer than 1,000) or small (1,000-2,500) institutions and less likely to be at very large (10,000 or more) institutions. They are more likely to be at competitive or highly competitive institutions and less likely to be at very competitive institutions.

Research-heavy Faculty. *Research-heavy Faculty* are more likely to be at doctoral institutions and less likely to be at master's-granting or baccalaureate-granting institutions. They are more likely to be at public institutions and less likely to be at private institutions. They are more likely to be at very large (10,000 or more) institutions and less likely to be at any other sized institution. They are more

likely to be at very competitive institutions and less likely to be at an institution with any other Barron's selectivity rating.

Service-heavy Faculty. *Service-heavy Faculty* are more likely to be at Master's-granting (small programs) institutions and less likely to be at Master's-granting (medium programs) institutions. These faculty are also less likely to be at highly competitive institutions.

Moderate-load Faculty. *Moderate-load Faculty* are more likely at doctoral (moderate research) institutions and less likely at doctoral (highest or higher research) institutions. They are more likely to be at private institutions. They are more likely to be at very small (fewer than 1,000) institutions and less likely to be at very large (10,000 or more) institutions. They are more likely to be at noncompetitive institutions and less likely to be at very competitive or highly competitive institutions.

4. How do teaching practices vary by the resulting groups?

Controlling for a wide variety of faculty demographics and characteristics and institution characteristics, several patterns can be seen in how teaching practices vary by the faculty groups. The most notable differences were for faculty emphasis on higher-order learning activities ($B = .185, p < .001$) and use of effective teaching practices ($B = .185, p < .001$). The most notable differences for *Teaching-Heavy Faculty* are their less than average out-of-class interactions with students ($B = -.163, p < .001$) and emphasis on higher-order learning activities ($B = -.113, p < .001$). For *Moderate-Load Faculty*, the most notable differences are their less substantial emphasis on higher-order learning activities ($B = -.141, p < .001$) and less than average use of effective teaching practices ($B = -.118, p < .001$). *Classic Faculty* use all the FSSE Scale teaching practices more than the average faculty member. *Service-Heavy Faculty* have more frequent out-of-class interactions with students ($B = .164, p < .001$) than the average faculty member. *Teaching-Heavy Faculty* and *Moderate-Load Faculty* use the teaching practices

measured by FSSE less than the average faculty member. Differences for the *Research-Heavy Faculty* from average were all trivial. For more details about these differences see Table 6.

Discussion and Future Research

The categorization of faculty based on time used for teaching, research, and service raises some interesting points of discussion about the roles of today's faculty. Other studies point to increased attention and value for faculty spending time on research (Melguizo & Strober 2007; Milem, Berger, & Dey, 1999; Shaker & Plater, 2016), but even the *Research-Heavy* faculty in this study spend a notable amount of time on other scholarly activities. With an increase of specialized roles for faculty (clinical teaching positions, research scientists, etc.), this study reminds us that faculty of all types will not likely be able to focus solely on a single kind of activity. Although there were some patterns in the type of faculty members found in these groups, there were no types of faculty found solely in any given group; *Teaching-Heavy Faculty*, for example, were not entirely made up of Lecturers or Instructors. So, although the groups created here are well defined, they are not absolute and do not relate cleanly to institutional ways of labeling faculty members. There is considerable variation in time spent on teaching, research, and service within these groups. The *Service-Heavy Faculty*, for example, spend a great amount of time on service activities, but they have a very wide range of variation in the time they spend on teaching activities. Although our analysis of faculty time produced distinct groups, our use of cluster analysis to characterize faculty is likely an oversimplification. Many faculty may find themselves represented in between groups or not perfectly represented within a single group.

The results of this study raise many questions. Future research should investigate how or why these divisions in faculty time are created. It may be due to the organizational structure of faculty roles at different institutions and within different disciplines, but it may partially be due to the choices

afforded to faculty in how they manage their time. The connection between role definitions, faculty autonomy, and the five groups is worth additional exploration.

The connections to effective teaching practice are quite striking and worthy of further investigation. One might assume that faculty who spend most of their time teaching might display a greater frequency of effective teaching practices, but that is not what we find here. There may be explanations based on factors not studied here such as the types of courses these faculty are teaching or the professional development available. The *Moderate-Load Faculty* raise additional questions about time spent by faculty on activities outside the teaching-research-service triumvirate.

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Table 1. Select Faculty Demographics and Characteristics by Faculty Groups

	<i>Classic %</i>	<i>Teaching-Heavy %</i>	<i>Research-Heavy %</i>	<i>Service-Heavy %</i>	<i>Moderate-Load %</i>	<i>Total %</i>
<i>Disciplinary Area</i>						
Arts & Humanities	26.9	23.2	18.9	23.1	19.7	22.2
Bio Sciences, Agric, & Natural Resources	8.6	8.3	12.7	5.9	5.7	8.1
Phys Sciences, Math, & Computer Sciences	11.4	14.9	14.2	10.7	9.3	12.4
Social Sciences	11.5	11.2	13.7	12.2	12.5	12.1
Business	9.8	8.1	10.2	8.7	9.5	9.1
Comm, Media, & Public Relations	3.3	3.4	2.9	3.7	4.0	3.5
Education	8.6	7.1	4.9	10.0	10.6	8.2
Engineering	4.9	4.4	8.1	4.3	4.0	4.9
Health Professions	8.0	11.8	7.0	11.9	12.9	10.7
Social Service Professions	2.5	3.0	3.2	3.8	4.5	3.4
Other disciplines	4.3	4.8	4.0	5.7	7.4	5.4
<i>Academic Rank</i>						
Full Professor	31.6	23.7	34.6	42.2	27.7	29.3
Associate Professor	25.8	24.0	26.7	32.4	28.0	26.5
Assistant Professor	32.9	29.3	33.1	14.8	25.4	28.2
Full-time Lecturer/Instructor	9.7	23.1	5.6	10.6	18.9	15.9
<i>Tenure Status</i>						
No tenure system at this institution	6.6	10.4	4.0	9.7	10.9	8.9
Not on tenure track, but this institution has a tenure system	15.3	30.3	11.7	17.0	25.7	22.6
On tenure track but not tenured	28.9	20.9	30.8	10.9	18.8	22.3
Tenured	49.2	38.3	53.6	62.4	44.6	46.3
<i>Gender Identity</i>						
Man	49.5	43.1	58.2	48.2	47.9	48.2
Woman	44.0	51.0	35.8	46.8	47.1	46.1
I prefer not to respond	6.5	5.8	6.1	5.0	5.0	5.7
<i>Racial/Ethnic Identification</i>						
Asian	7.5	4.1	11.8	5.8	5.2	6.3
Black or African American	6.5	3.7	4.5	6.4	7.4	5.5
Hispanic or Latino	3.5	2.7	3.7	3.5	3.9	3.4
White	64.4	74.7	64.4	70.1	70.2	69.8
Other, American Indian or Alaska Native, Native Hawaiian or other Pacific Islander	2.5	1.7	2.5	2.1	2.2	2.1
Multiracial	3.9	3.0	3.2	3.0	3.0	3.2
I prefer not to respond	11.7	10.1	9.9	9.0	8.0	9.7
<i>Sexual Orientation</i>						
Bisexual, gay, lesbian, queer, questioning, or another sexual orientation	5.1	5.4	5.3	4.7	5.6	5.3
Straight (heterosexual)	80.8	82.6	82.1	84.8	84.0	82.8
I prefer not to respond	14.1	12.0	12.7	10.5	10.3	11.9

Table 2. Select Institution Characteristics by Faculty Groups

	<i>Classic %</i>	<i>Teaching- Heavy %</i>	<i>Research- Heavy %</i>	<i>Service- Heavy %</i>	<i>Moderate- Load %</i>	<i>Total %</i>
<i>Carnegie Classification</i>						
Doctoral highest research	7.5	5.5	26.3	8.9	7.5	9.8
Doctoral higher research	11.6	9.5	21.1	13.7	11.3	12.4
Doctoral moderate research	22.8	17.3	22.7	21.0	22.4	20.7
Master's-large programs	29.6	28.9	17.2	28.0	28.4	27.0
Master's-medium programs	12.6	12.8	4.9	8.7	11.1	10.8
Master's-small programs	3.9	3.7	1.9	4.5	3.2	3.4
Baccalaureate-A&S	6.3	9.4	3.6	6.7	7.6	7.3
Baccalaureate-diverse programs	5.8	12.8	2.4	8.5	8.4	8.5
<i>Institution Control</i>						
Public	75.3	63.6	84.7	72.7	68.5	70.8
Private	24.7	36.4	15.3	27.3	31.5	29.2
<i>Institution size by undergraduate enrollment</i>						
Very Small (fewer than 1,000)	3.4	5.5	1.3	4.5	5.0	4.3
Small (1,000-2,500)	12.4	16.7	6.3	12.8	13.8	13.3
Medium (2,500-4,999)	12.9	13.5	9.9	14.0	14.0	13.0
Large (5,000-9,999)	30.7	28.0	22.8	27.2	27.9	27.5
Very Large (10,000 or more)	40.7	36.4	59.8	41.5	39.3	41.9
<i>Barron's selectivity</i>						
Noncompetitive	1.6	2.2	0.9	2.3	3.0	2.1
Less competitive	22.9	19.9	16.3	22.5	22.0	20.6
Competitive	51.6	52.5	43.5	49.7	51.4	50.4
Very competitive	16.1	13.9	32.9	17.3	15.4	18.0
Highly competitive	5.9	8.3	4.9	4.6	5.0	6.1
Most competitive	1.9	3.2	1.5	3.7	3.3	2.8

Table 3. FSSE Scale Descriptives Overall and By Faculty Groupings

	<i>Classic</i>		<i>Teaching-Heavy</i>		<i>Research-Heavy</i>		<i>Service-Heavy</i>		<i>Moderate-Load</i>		<i>Total</i>		α	ICC
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Higher-Order Learning	46.6	12.2	42.4	13.1	44.1	12.9	44.9	12.9	42.7	13.4	43.6	13.1	.73	.03
Reflective & Integrative Learning	46.6	12.8	43.5	14.1	43.1	14.0	45.9	13.5	45.2	13.4	44.6	13.7	.88	.03
Learning Strategies	36.0	20.0	33.1	19.9	36.0	19.4	34.9	20.2	33.6	19.5	34.3	19.8	.76	.03
Quantitative Reasoning	41.1	15.6	37.8	16.4	39.6	16.2	38.7	16.5	37.6	16.1	38.6	16.2	.88	.03
Collaborative Learning	39.0	16.1	37.1	16.6	37.0	16.6	37.2	16.9	36.5	16.5	37.2	16.5	.84	.03
Discussions with Diverse Others	31.8	18.7	28.8	18.5	29.1	19.2	31.9	18.9	30.5	18.5	30.1	18.7	.93	.13
Student-Faculty Interaction	39.6	13.0	35.9	12.5	35.0	13.6	39.7	13.8	37.2	13.1	37.0	13.1	.78	.03
Effective Teaching Practices	50.8	8.0	48.6	8.5	48.6	8.7	49.4	8.6	48.4	8.7	49.0	8.6	.76	.04

Key: alpha is Cronbach's alpha; ICC is the intra-class correlation coefficient or the percentage of variation at the institution-level

Figure 1. Average Hours Per Week Spent by Faculty Groups

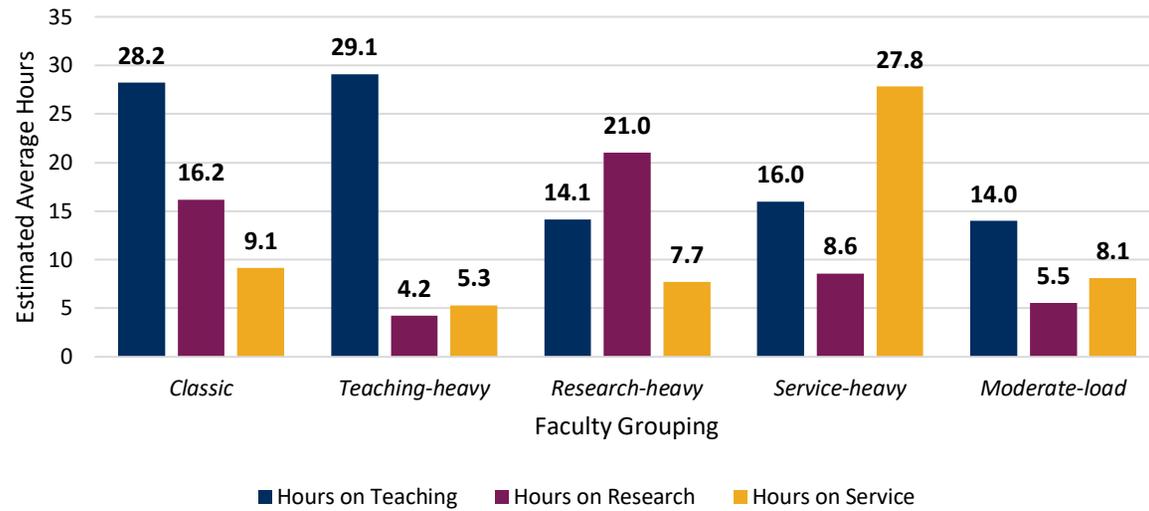
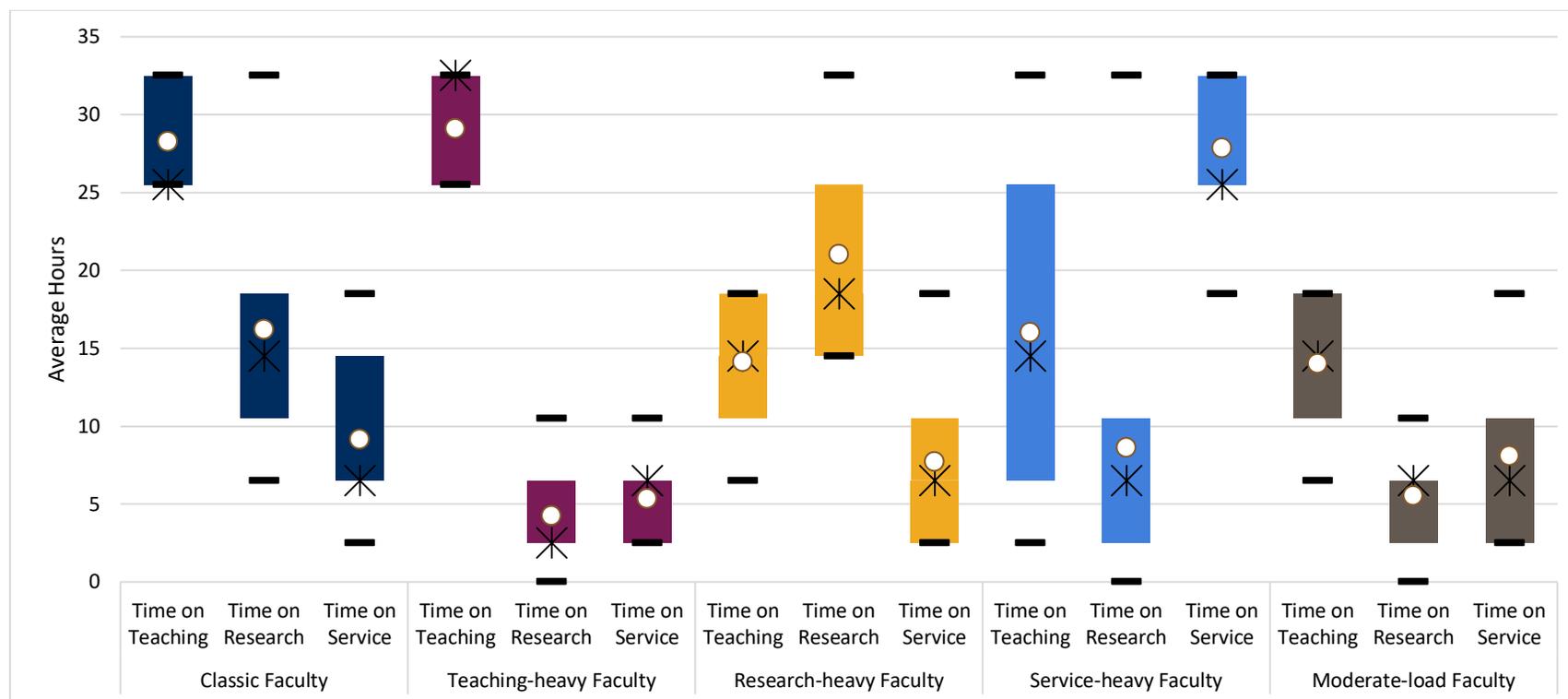


Figure 2. Distribution of Time Spent on Teaching, Research, and Service by Faculty Groups



Note: lower bars represent the 5th percentile, upper bars represent the 95th percentile. The shaded box represents the interquartile range. The star represents the median, and the dot represents the mean.

Table 4. Chi-Square Statistics for Differences in Faculty Demographics by Faculty Grouping

	Standardized Residual					χ^2 , df, n, p
	Classic	Teaching- Heavy	Research- Heavy	Service- Heavy	Moderate- Load	
<i>Disciplinary Area</i>						
Arts & Humanities	5.0	1.6	-3.5	0.7	-3.4	$\chi^2 = 537.3$
Bio Sci, Agric, & Nat Resources	0.9	0.3	8.0	-2.9	-5.4	df = 40
Phys Sci, Math, & Comp Sci	-1.3	5.2	2.6	-1.8	-5.7	n = 15,722
Social Sciences	-0.8	-1.8	2.4	0.1	0.7	p < .001
Business	1.2	-2.5	1.8	-0.5	0.7	
Comm, Media, & Pub Relations	-0.4	-0.4	-1.5	0.4	1.7	
Education	0.7	-2.8	-5.6	2.4	5.4	
Engineering	0.0	-1.9	7.1	-1.1	-2.6	
Health Professions	-4.2	2.3	-5.6	1.3	4.2	
Social Service Professions	-2.4	-1.8	-0.5	0.8	3.7	
Other disciplines	-2.3	-1.8	-3.0	0.5	5.7	
<i>Academic Rank</i>						
Full Professor	2.1	-7.3	4.6	8.4	-1.9	$\chi^2 = 734.6$
Associate Professor	-0.7	-3.4	0.2	4.1	1.8	df = 12
Assistant Professor	4.4	1.4	4.5	-9.0	-3.4	n = 14,855
Lecturer or Instructor	-7.8	12.4	-12.5	-4.8	4.7	p < .001
<i>Tenure Status</i>						
No tenure system	-3.9	3.7	-8.1	1.0	4.5	$\chi^2 = 896.7$
Not on tenure track	-7.7	11.7	-11.3	-4.4	4.3	df = 12
On tenure track	7.1	-2.1	8.8	-9.0	-4.8	n = 15,650
Tenured	2.2	-8.4	5.3	8.9	-1.6	p < .001
<i>Gender Identity</i>						
Man	0.8	-5.2	7.1	0.0	-0.3	$\chi^2 = 180.2$
Woman	-1.6	5.2	-7.4	0.4	1.0	df = 8
I prefer not to respond	1.7	0.5	0.8	-1.0	-1.9	n = 15,549
						p < .001
<i>Racial/Ethnic Identification</i>						
Asian	2.4	-6.2	10.7	-0.7	-2.7	$\chi^2 = 319.5$
Black or African American	2.1	-5.5	-2.2	1.4	5.2	df = 24
Hispanic or Latino	0.2	-2.7	0.8	0.3	2.0	n = 15,361
White	-3.2	4.1	-3.2	0.1	0.2	p < .001
Other, American Indian, Alaska Native, Native Hawaiian, or other Pacific Islander	1.1	-1.9	1.3	-0.1	0.3	
Multiracial	2.1	-0.8	0.1	-0.3	-0.7	
I prefer not to respond	3.3	0.9	0.4	-0.8	-3.4	
<i>Sexual Orientation</i>						
Bisexual, gay, lesbian, queer, questioning, or another non- straight sexual orientation	-0.4	0.2	-0.1	-1.1	0.9	$\chi^2 = 27.15$
						df = 8
						n = 15,504
Straight (heterosexual)	-1.1	-0.2	-0.4	0.8	0.9	p = .001
I prefer not to respond	3.2	0.3	1.2	-1.4	-2.9	

Table 5. Chi-Square Statistics for Differences in Institution Characteristics by Faculty Groups

	Standardized Residual					χ^2 , df, n, p
	<i>Classic</i>	<i>Teaching- Heavy</i>	<i>Research- Heavy</i>	<i>Service- Heavy</i>	<i>Moderate- Load</i>	
<i>Carnegie Classification</i>						
Doctoral highest research	-3.7	-9.9	25.5	-1.1	-4.7	$\chi^2 = 1561.2$
Doctoral higher research	-1.3	-5.9	11.8	1.4	-2.2	df = 28
Doctoral moderate research	2.3	-5.3	2.1	0.2	2.4	n = 15,514
Master's-large programs	2.5	2.6	-9.2	0.7	1.7	p < .001
Master's-medium programs	2.8	4.5	-8.7	-2.3	0.7	
Master's-small programs	1.3	1.2	-4.0	2.2	-0.6	
Baccalaureate-A&S	-1.9	5.6	-6.6	-0.8	0.7	
Baccalaureate-diverse programs	-4.7	10.4	-10.1	0.0	-0.2	
<i>Institution Control</i>						
Public	2.7	-6.1	8.0	0.8	-1.8	$\chi^2 = 387.1$
Private	-4.2	9.6	-12.5	-1.3	2.8	df = 4
						n = 15,514
						p < .001
<i>Institution size by undergraduate enrollment</i>						
Very Small (fewer than 1,000)	-2.2	4.0	-6.9	0.4	2.2	$\chi^2 = 483.1$
Small (1,000-2,500)	-1.3	6.6	-9.3	-0.5	0.9	df = 16
Medium (2,500-4,999)	-0.2	0.9	-4.2	1.0	1.7	n = 15,514
Large (5,000-9,999)	3.0	0.6	-4.4	-0.3	0.5	p < .001
Very Large (10,000 or more)	-0.9	-6.0	13.4	-0.2	-2.5	
<i>Barron's selectivity</i>						
Noncompetitive	-1.8	0.4	-4.1	0.4	3.8	$\chi^2 = 527.4$
Less competitive	2.5	-1.1	-4.6	1.6	1.9	df = 20
Competitive	0.9	2.0	-4.7	-0.4	0.9	n = 14,582
Very competitive	-2.2	-6.5	16.9	-0.6	-3.8	p < .001
Highly competitive	-0.4	5.9	-2.4	-2.3	-3.0	
Most competitive	-2.7	1.7	-3.6	1.9	1.9	

Table 6. Unstandardized Regression Coefficients for Faculty Groups

	<i>Classic</i>		<i>Teaching-Heavy</i>		<i>Research-Heavy</i>		<i>Service-Heavy</i>		<i>Moderate-Load</i>	
	B	Sig.	B	Sig.	B	Sig.	B	Sig.	B	Sig.
Higher-Order Learning	.185	***	-.113	***	.030		.039		-.141	***
Reflective & Integrative Learning	.120	***	-.107	***	-.006		.052	*	-.059	***
Learning Strategies	.115	***	-.086	***	.073	**	.001		-.103	***
Quantitative Reasoning	.104	***	-.088	***	.011		.050	*	-.077	***
Collaborative Learning	.090	***	-.070	***	.003		.037		-.060	***
Discussions with Diverse Others	.078	***	-.071	***	-.022		.050		-.035	*
Student-Faculty Interaction	.150	***	-.163	***	-.078	***	.164	***	-.072	***
Effective Teaching Practices	.185	***	-.079	***	-.006		.018		-.118	***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. The dependent variables were standardized before entry into the models so that coefficients can be interpreted as effect sizes. Effect coding was used so that coefficients can be interpreted compared to the average faculty member as opposed to a reference group. Faculty control variables included disciplinary area, academic rank, tenure status, gender identity, racial/ethnic identification, sexual orientation. Institution control variables included Carnegie classification, institutional control, institution size, and Barron's selectivity.

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