College faculty and the scholarship of teaching: Gender differences across four key activities

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Abstract. Prior work has spent much effort on what is the Scholarship of Teaching and Learning (SoTL) and little effort on who actually practices the SoTL. I begin to fill the research gap by examining two of the most salient characteristics that structure faculty dynamics and everyday lives—gender and years of experience— and four activities generally agreed to be indicators of the SoTL. Guided by identity theory in tandem with recent data on the characteristics and trends of higher education faculty in the U.S., I find that female faculty are more likely than their male counterparts to engage in the SoTL and that this gender gap increases with teaching experience. The data come from 2001-2002 survey data on 85 faculty at a large public research-intensive university in the Northwest.

I. Introduction.

In *Scholarship Reconsidered* Boyer (1990) introduced the influential concept "the scholarship of teaching" into the academic community. This concept has been refined by others—most notably by the Carnegie Academy—both theoretically and substantively as the Scholarship of Teaching and Learning (SoTL), and has attracted widespread attention mostly in the UK, Australia, Canada, and the U.S. The SoTL is not entirely novel. Prior to Boyer (1990), higher education faculty have been historically urged to inform and improve their teaching by consulting experts and by using knowledge and resources generated by commissions, special offices, and practitioners. In the U.S., Cross and Steadman (1996) argue that efforts such as federally sponsored research and development in the 1960s, the emphasis on faculty development in the 1970s, and the publication of *A Nation at Risk* all stressed the role of experts and resources in improving faculty teaching practices.

Nearly all of the publications on the scholarship of teaching are aimed at (a) refining the concept with an eye toward multidimensionality, (b) elaborating models to indicate the set of activities that comprise the SoTL, and (c) discussing how universities should facilitate and reward the SoTL. That is, prior work has spent much effort on *what is* the SoTL and little effort on *who* actually practices the SoTL. In general, then, we are unaware of which faculty engage in the SoTL. In this study, I begin to fill the research gap with a focus on the U.S. and examine two of the most salient characteristics that structure faculty dynamics and everyday lives—gender and years of experience. I propose that female faculty are more likely than their male counterparts to engage in the SoTL and that this gender gap increases with experience. To develop these propositions, I use identity theory in tandem with recent data on the characteristics and trends of higher education faculty in the U.S. I test the research propositions with pooled data from surveys conducted in 2001-02 with 85 faculty at a large public research-intensive

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university—exactly the type of institution that Boyer (1990) lamented that teaching is given far less weight in tenure and promotion decisions than is research.

II. Background.

A. The Scholarship of Teaching and Learning.

Exactly what comprises SoTL is, of course, debated widely. The discussion generally revolves around the definition of "scholarship" and manifests in two orientations: (a) Teaching-related outputs are the indicator of SoTL; and (b) Teaching and techniques are the indicator of SoTL. The former position was bolstered by Shulman (2000: 50), then president of the Carnegie Foundation, who stated that "[w]e develop a scholarship of teaching when our work as teachers become public, peer-reviewed and critiqued, and exchanged with other members of our professional communities so they, in turn, can build on our work." Ritchlin (2001) forwards a similar sentiment when arguing that, unfortunately, the scholarship of teaching has become mixed up with the act of teaching itself. The notion that the SoTL is largely a public research- and output-oriented endeavor is further supported by Kreber and Canton (2000) and Richlin and Cox (2004).

The second orientation views the SoTL as teaching-related activities with terms ranging from teaching excellence to expert teaching to scholarly teaching. The term "scholarly teaching" not only involves teaching excellence but also developing expertise in the knowledge base of teaching and learning (Richlin, 2001). Bowden (2007) is especially passionate that scholarly teaching is an indicator of the SoTL. Through lexical statistics and rhetorical analysis, Bowden argues that the original intent of Boyer's Scholarship of Teaching was the act of teaching itself, which contradicts Shulman's (2000) view that excellent teaching in not indicative of the SoTL. Others argue that if SoTL is defined simply by peer reviewed research outputs then this further devalues the role of teaching in higher education and that teaching just becomes another research endeavor (Atkinson, 2001).

Boyer did not explicitly settle this debate within his writings and, to date, experts, practitioners, and faculty do not form an exact consensus on a definition of the SoTL (Kreber, 2003, 2005; Nicholls, 2004). A general consensus has emerged, though, where the SoTL is the development of teacher knowledge. As summarized by Trigwell and Shale (2004) and informed by the SoTL models of Trigwell et al. (2000) and Kreber (2002), the development of teacher knowledge includes the communication of ideas and practices, focused reflection, an awareness and use of information on teaching and learning, and the public dissemination of knowledge or pedagogic resonance. Indeed, Kreber (2005: 328) argues that "[t]here seems to be a consensus that the scholarship of teaching … should be informed by the knowledge of the field, be inquiry-driven, involve critical reflectivity, and include scrutiny by peers." The last element—scrutiny by peers—need not necessarily occur in journal articles (Richlin, 2001). The notion of "peer review" has been relaxed in more recent writings. Peer review now can occur in less formal contexts such as focused communication with colleagues, faculty development activities, public presentations, and even the Internet (Cambridge, 2000; Nicholls, 2004). The main notion of peer review is that one's ideas and practices are disseminated in public (Trigwell et al., 2000; Trigwell and Shale, 2004).

In this present article, I examine four activities that dovetail with the general consensus of the SoTL elaborated in the above paragraph. Specifically, I measure the extent to which higher

education faculty (a) Review literature on teaching and learning issues, (b) Talk with colleagues about teaching and learning issues, (c) Consult campus experts on teaching and learning issues, and (d) Use assessment data to inform teaching and learning issues. Together, these four activities get at the heart of the SoTL—inquiry-driven, reflection, and peer communication and scrutiny. Further, these four activities are consistent with Shulman and Hutchings (1999) who argue that the scholarship of teaching requires "going meta" in which faculty frame and systemically investigate questions related to student learning—the conditions under which it occurs, what it looks like, how to deepen it, and so forth—and do so with an eye not only to improving their own classroom but to advancing practice beyond it. Going meta also includes an exchange of ideas and inquiry into student learning.

B. Gender, Theory, and the SoTL.

There exists much research on gender differences in activities within the classroom. In general, female faculty interact with students, use student-centered and collaborative techniques, engage students in higher-order cognitive activities, use diversity in their classes to a greater extent than male faculty, and spend more time preparing for their courses (Park, 1996; Umbach, 2006). Research to date, however, has not examined gender differences in activities outside of the classroom, especially activities indicative of the SoTL.

Given the lack of prior research on gender and the SoTL, we must develop the link theoretically. The theory I use is identity theory. Identity theories, especially Burke's (1991) identity control theory, argue that individuals act in a self-regulatory manner with the goal of matching perceptions of themselves with the standards of the role or situations in which they see themselves. Those who identify with a role feel a strong attraction and commitment to the role, even if the role has a relatively low status. As we form these identities and, often, group associations we develop role-based identities as well—we act to fulfill the expectations of a specific role and emphasize performance and competence in this role (Stets and Burke, 2000). Research shows that the more time we spent in a role and the more we identify with others in the same role the more that role becomes our identity. Further, once a role becomes a salient identity, the more we will work toward being competent in that role and reaffirming that identity (Stryker and Burke, 2000). This relationship is called the *identity-behavior* link (Stryker and Serpe, 1982).

The roles and statuses occupied by female faculty in higher education are, on average, different than from those of their male colleagues. By all accounts, educational data and research show that female faculty are more likely to be in a lower-status teaching role whereas male faculty are more likely to be in a research-oriented role. Data from the most recent *Digest of Education Statistics* and the 1998 *National Study of Postsecondary Faculty* find that female faculty (a) disproportionately hold lower status positions in higher education, (b) are less compensated than men for equal positions, (c) are more likely to be in teaching fields, and (d) spend more time teaching. These gender differences generally increase with years of experience (Harper et al., 2001; NCES, 2006). Females are overly represented in fields that place less emphasis on research and more on teaching, such as those found in humanities and health. Male faculty are overly represented in the natural sciences, fields that place more emphasis on research and grants. Female full-time faculty spent larger shares of their time in teaching or service activities, and smaller proportions in research or administrative activities, than male faculty. The net effect of these differences is that female faculty have access to fewer resources (e.g., office

space, computers), experience greater devaluation of their research, and have more concerns about job stability. As a result gender disparities increase with years experience and rank. Indeed, male faculty are promoted quicker, are more likely to be promoted, receive higher salary increases, and are more likely to be on the "research-track" instead of the "teaching track."

Applied to higher education faculty, then, identity theory would predict that compared to their male colleagues female faculty will be more likely to identify with a teaching role given that they are more likely to have heavier teaching loads and be on the "teaching track." This female-male disparity in identities will increase with experience as the teaching gap and track between female and male faculty increases with years of experience. In turn, identity theory would predict that in order to work toward being competent and reaffirming the teaching identity female faculty will spend more time and effort outside of the classroom working on their teaching; a pattern that will intensify with experience. This identity-behavior link, therefore, suggests that female faculty in higher education are more likely to practice the SoTL as they inform and improve their in-class behaviors with external pedagogical resources.

III. Methods.

A. Sample.

The data for this analysis come from formative assessment surveys at a large public university in the Northwest region of the United States. The purpose of the surveys is to provide information to the University's teaching and learning unit in order to collaborate with participating faculty to help implement faculty goals and activities into the classroom. This unit operates an assessment division that systematically evaluates the use and effectiveness of teaching practices. All faculty who use the University's centrally-supported online learning environment were invited to participate in the survey process.

This research uses data from 85 faculty who completed these formative survey questionnaires in either fall 2001 or spring 2002. The response rate for participating faculty was 90%. Ancillary analyses show (results available upon request) that there are no consistent patterns of nonresponse among the faculty. A random sample was not feasible because of the nature of the investigation; the data are from a convenience sample.

The present sample brings up two questions about generalizability. First, the 85 faculty are from a single institution. This does limit our ability to generalize to the larger population of college faculty. However, the faculty in the current research are not from selective colleges, disciplines, or departments and do represent a wide cross-section of the university's overall faculty. Additionally, these faculty are from a 4-year public doctoral university, which according to the 2004 National Study of Postsecondary Faculty is the most common type of institution where faculty with instructional duties reside. Further, faculty at 4-year doctoral institutions also have the more typical faculty appointments that are a mix of teaching, research, and service instead of specializing in just one principal activity (Cataldi, Bradburn, and Fahimi, 2005).

The second issue is the extent to which these data from 2001-2002 still represent and generalize to the contemporary structure and culture of higher education. The most comprehensive and recently published data from the Higher Education Research Institute and their ongoing survey "The American College Teacher" suggest that the teaching and learning culture among faculty and higher education institutions has not changed substantially between 2001-2002 and 2004-2005 (Lindholm, Astin, Sax, and Korn, 2003; Lindholm, Szelényi, Hurtado,

and Korn, 2005). Data from the 2007-2008 faculty survey are not yet available. For example, the percentage of faculty who "agree somewhat" or "strongly" that most students are well-prepared academically was similar for 2001-2002 and 2004-2005 (32% vs. 36%, respectively). Likewise, there are nearly identical results for the percentage of faculty who report that it is "very important" or "essential" to develop a student's ability to think critically (99% vs. 99%), to enhance a student's knowledge of other racial and ethnic groups (58% vs. 60%), to provide for a student's emotional development (36% vs. 38%), to prepare students for responsible citizenship (59% vs. 61%), and to prepare students for graduate or advanced education (58% vs. 61%). Faculty also reported little change in their teaching and evaluation methods. For example, the percentage of faculty who use multiple choice mid-terms and finals in "most" or "all" of their classes was identical for 2001-2002 and 2004-2005 (33% vs. 33%, respectively). Similar comparisons emerged for grading on a curve (17% vs. 19%), cooperative learning (43% vs. 48%), and student evaluations of each other's work (15% vs. 16%). While some differences did emerge between 2001 and 2005, most of these were small and less than five-percentage points.

Overall, then, the institution from which the current sample is drawn is the same as the "typical" faculty with instructional duties in higher education. Also, given the lack of change in faculty teaching and learning approaches, it does not appear that the 2001-2002 data used for this present research is too dated or irrelevant to speak to today's higher education faculty and institutions. Of course, the results presented here will be most useful when compared in context to other existing and future studies.

B. Variables.

Table 1 includes an inventory of all variables used in the analyses. The dependent variables approximating the Scholarship of Teaching were created from the following question: "To what extent do you engage in the following activities to inform your teaching practices?" The activities addressed were: (a) Review literature on teaching and learning issues, (b) Talk with colleagues about teaching and learning issues, (c) Consult campus experts on teaching and learning issues, and (d) Use assessment data to inform teaching and learning issues. The possible responses and coding of the responses are as follows: 1 = Never, 2 = Hardly ever, 3 = Seldom, 4 = Sometimes, 5 = Often, and 6 = Very often. In the analyses that follow, I examine each of these SoTL activities individually. I also created an index of the scholarship of teaching through confirmatory factor analysis. Using varimax rotation procedures, the analysis found that all four individual resources loaded on a single dimension, suggesting that these four resources can be combined conceptually and analytically because they are all part of a coherent latent variable. The load factors range from 0.68 to 0.84. To create the Scholarship of Teaching Index and make its metric equivalent to the individual teaching variables, I summed and averaged the four teaching resource variables where higher scores represent greater use of the resources (range: 1 – 6). The final index has a Chronbach's reliability coefficient of 0.77. Two independent variables are used in the regression analyses. Gender is dummy coded where 0 = Male and 1 = Female. Years teaching is coded using the response categories on the original surveys where 1 = First course, 2 = 1 – 2 years, 3 = 2 – 5 years, 4 = 5 – 10 years, and 5 = Over 10 years.

Table1. Inventory of All Variables Used in the Analyses.

Variable	M	S	Coding / Range
Dependent Variables			
Review literature on teaching and learning issues	4.29	1.09	1 = Never; 2 = Hardly ever; 3 = Seldom; 4 = Sometimes; 5 = Often; 6 = Very often
Talk with colleagues about teaching issues	5.03	0.53	Same as above
Consult campus experts on teaching and learning issues	3.84	0.70	Same as above
Use assessment data to inform teaching practices	4.19	1.15	Same as above
Scholarship of Teaching Index	4.36	0.77	Same as above
Independent Variables			
Female faculty	59%	---	0 = Male; 1 = Female
Years teaching	3.40	1.76	1 = First course; 2 = 0 – 2 years; 3 = 2 – 5 years; 4 = 5 – 10 years; 5 = Over 10 years
Control Variables			
Upper-division course	40%	---	0 = Lower division; 1 = Upper division
Course for majors	16%	---	0 = Nonmajor; 1 = Major
Natural science course	9%	---	0 = Other science; 1 = Natural science

The original surveys constrain the extent to which I am able to control for additional faculty and course characteristics. Clearly not all faculty within the same university would be similar in their teaching expectations and activities. The data do include a limit set of variables in which teaching practices may differ. Research finds that teaching practices and expectations differ by department or academic field, the level of the course (e.g., lower or upper division), and whether the course is elective or required for the major (Colbeck, Cabrera, and Terenzini 2001; Kuh and Hu 2001; Paulsen and Wells 1998). To this end, I include three variables as controls. Academic field was measured on the original survey with six categories: natural science, humanities, social science, general education, business, and the arts. Research shows that differences in teaching and research expectations and behaviors are most between the natural sciences and all other fields (NCES, 2006). Thus, I code academic field as a simple dichotomous variable where 1 = natural science and 0 = all else (i.e., humanities, social science, general education, business, and the arts). The level of instruction is also captured by a dichotomous variable where 1 = upper-division (generally advanced junior and senior courses) and 0 = lower-division (generally introductory freshman and sophomore courses). Lastly, course composition is divided between those required for a major (coded 1) and those that are electives (coded 0).

C. Analytical Strategy.

To evaluate the research question I estimated two ordinary least squares (OLS) regression models for each of the four dependent variables and the SoTL Index. In the first model, the dependent variable was regressed on gender, years teaching, and the control variables. In the second model, a gender *x* years teaching interaction term was added to regression equation to determine if any effects of gender vary by experience. There are two possible statistical concerns that arose with using OLS regression. First, the dependent variables were measured with an ordinal-level scale. To test the effects of scaling on the regression estimates, all of the equations were re-estimated with ordered logistic regression models. The results were identical to those for the OLS analyses. Second, because five regression analysis were conducted (i.e., one for each dependent variable), there is an increase in the probability of making a Type I error. To estimate this probability, the models were estimated with a MANOVA procedure and with a simultaneous regression equation (i.e., all dependent variables). Again, the results were identical to those for the OLS analyses. In the end, I opted to use the results from the OLS analyses as they are more familiar than results from ordered logistic or simultaneous regression.

IV. Results.

Looking across the SoTL activities in Table 1, the averages suggest that faculty vary in their engagement. Faculty are most likely to inform their teaching practices by talking with colleagues about teaching issues; they do so "often." On the other hand, the least engaged activity is consulting with campus experts on teaching and learning issues. They use this resource more than "seldom" but less than "sometimes." Faculty report that they use the other two resources—reviewing literature on teaching and learning issues and using assessment data to inform teaching practices—only about "sometimes." As a single construct, the SoTL Index shows that faculty engage in these activities as a group somewhere between "sometimes" and "often." The remainder of the descriptive statistics provides a snapshot of the sample. About 60% of the sample is female faculty who have been teaching about 5 years. For all faculty, 40% were teaching an upper-division course mainly for nonmajors and not in the natural sciences.

The results from the regression analyses are in Table 2. The coefficients for Gender in Model 1 across the dependent variables return four statistically significant results. Clearly, female faculty are much more likely to engage in SoTL activities. Compared to male faculty, female faculty are significantly more likely to review literature, talk with colleagues, and consult campus experts in order to inform their teaching practices. As a result of these trends, female faculty are statistically more likely to score higher on the SoTL Index. These results support strongly the first research hypothesis that female faculty are more likely to engage in the SoTL.

The substantive effects of gender are moderate-to-large—all are greater than one-half of a unit in the teaching resource. For example, for reviewing literature, a gender coefficient of 0.80 suggests that if male faculty "sometimes" inform their teaching practices by reviewing literature (value = 4), then women faculty's resource use approach "often" (where 4 + 0.80 = 4.80, nearly a value of 5 or "often"). The effect of gender on talking with colleagues about teaching issues is equally large at 0.82, whereas the effect of gender on consulting with campus experts is smaller (0.62), as is the effect of gender on the Teaching Resource Index (0.65). The results show that, in general, teaching experience has little direct influence on the extent to which faculty use these resources to inform their teaching. The only significant result is for talking with colleagues about

Table 2. Unstandardized OLS Regression Coefficients from the Regression of Engaging in SoTL Activities on Faculty Gender and Years Teaching, 2001-2002.

| | SoTL Activities | | | | | | | | | |
| | Review literature on teaching and learning issues | | Talk with colleagues about teaching issues | | Consult campus experts on teaching and learning issues | | Use assessment data to inform teaching practices | | Scholarship of Teaching Index | |
Variables	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Gender (1 = female)	0.80*** (0.24)	1.00*** (0.43)	0.82*** (0.22)	0.78*** (0.15)	0.62** (0.24)	0.79** (0.27)	0.37 (0.24)	0.21 (0.29)	0.65*** (0.15)	0.69*** (0.18)
Years teaching	0.05 (0.05)	-0.09 (0.07)	-0.17** (0.06)	-0.28*** (0.08)	0.04 (0.05)	-0.04 (0.12)	0.07 (0.05)	0.09 (0.13)	0.01 (0.03)	-0.05 (0.04)
Sex x Years teaching	---	0.33** (0.11)	---	0.24* (0.11)	---	0.29** (0.12)	---	0.10 (0.11)	---	0.22** (0.08)
Upper-division course	-0.58** (0.21)	-0.58** (0.16)	-0.18 (0.16)	-0.18 (0.15)	-0.05 (0.23)	-0.06 (0.23)	-0.19 (0.24)	-0.18 (0.25)	-0.25* (0.09)	-0.25* (0.10)
Course for majors	-0.25 (0.29)	-0.22 (0.28)	-0.42* (0.19)	-0.46** (0.18)	-0.90** (0.28)	-0.88** (0.27)	-0.14 (0.29)	-0.15 (0.30)	-0.44* (0.19)	-0.43* (0.19)
Natural science course	-0.73** (0.30)	-0.81** (0.29)	-0.22 (0.19)	-0.19 (0.18)	-0.92** (0.17)	-0.94** (0.19)	-0.03 (0.11)	-0.02 (0.09)	-0.83** (0.27)	-0.86** (0.26)
Intercept	4.66	4.67	5.67	4.93	4.24	4.31	4.81	5.10	4.84	4.75
R^2	0.25	0.35	0.31	0.38	0.26	0.32	0.05	0.05	0.29	0.35
% change in R^2	---	40.0	---	22.6	---	23.1	---	0.0	---	20.7

Notes: Numbers in parentheses are standard errors.

*p < 0.05. ** p < 0.01. ***p < 0.001 (two-tailed)

teaching issues where greater teaching experience leads to less communication with colleagues. Even though the control variables were not theoretically included in the framework, several interesting trends emerged that are noteworthy. Faculty are more likely to engage in the SoTL in courses for nonmajors than in courses for majors and if they are in fields other than the natural sciences. Finally, in all but one of the models, the variables explain an impressive 25 – 31% of individual differences in the extent to which faculty engage in the SoTL.

The results from the interaction equations in Model 2 support the second research hypothesis. Across the five dependent variables, four of the *Gender x Years teaching* interaction terms reach statistical significance implying that the positive association between gender and the SoTL activities (from Models 1) increases significantly with more years of experience. Specifically, the gap between female and male faculty widens with experience on reviewing literature, talking to colleagues, consulting campus experts, and the SoTL Index. Just as gender is not important to the use of assessment data, the interaction term also fails to reach statistical significance for this activity. The importance of teaching experience in the gender gap is captured by the significant increases in R-squared—between 21% and 40%.

How large are these interaction effects? The advantage of regression analysis is that interactions have a particular interpretation when one of the predictors is a categorical variable with two categories—such as Gender. In the interaction models in Table 2 (ignoring the control variables, which are generally used for prediction), the regression equation is equal to:
$Y = \alpha + b_1(Gender) + b_2(Years\ teaching) + b_3(Gender\ x\ Years\ teaching)$. The inclusion of the interaction term in the model allows the regression lines for men and women to have different slopes. For men (who are coded "0"), the model reduces to $Y = \alpha + b_1(Years\ teaching)$, whereas for women (who are coded "1") it is $Y = (\alpha + b_2) + [(b_1 + b_3)(Years\ teaching)]$. Thus, b_3 is the gender difference in the effect of years teaching. That is, it estimates how the gender gap in using teaching resources increases by teaching experience.

Figure 1 graphically shows how the gender gap in SoTL activities widens with more years of teaching experience. For illustration, I present results at three experience levels: 0 – 2 years (coded "2"), 5 – 10 years (coded "4"), and over 10 years (coded "5"). These three levels roughly correspond to faculty who are just beginning their careers, faculty who are near-tenure or recently tenured, and faculty with the most post-tenure experience, respectively. As we can see in Figure 1, the gender gap is small for faculty with 0 – 2 years of teaching experience— ranging from 0.44 for the SoTL Index to 0.66 for Reviewing Literature. This gender gap widens significantly as faculty gain more teaching experience. At 5 – 10 years of teaching experience, the gap ranges from 0.88 for the SoTL Index to 1.32 for Reviewing Literature. Then with over 10 years of teaching experience the gap widens to 1.10 for SoTL Index, 1.20 for Talking with Colleagues, 1.45 for Consulting Campus Experts, and 1.65 for Reviewing Literature. Substantively, any gap that is 1.0 or greater represents a one-unit change in the engagement in SoTL activities, such as moving from "Sometimes" to "Often."

Figure 1. Differences in the Use of The Scholarship of Teaching Between Female and Male Faculty by Teaching Experience
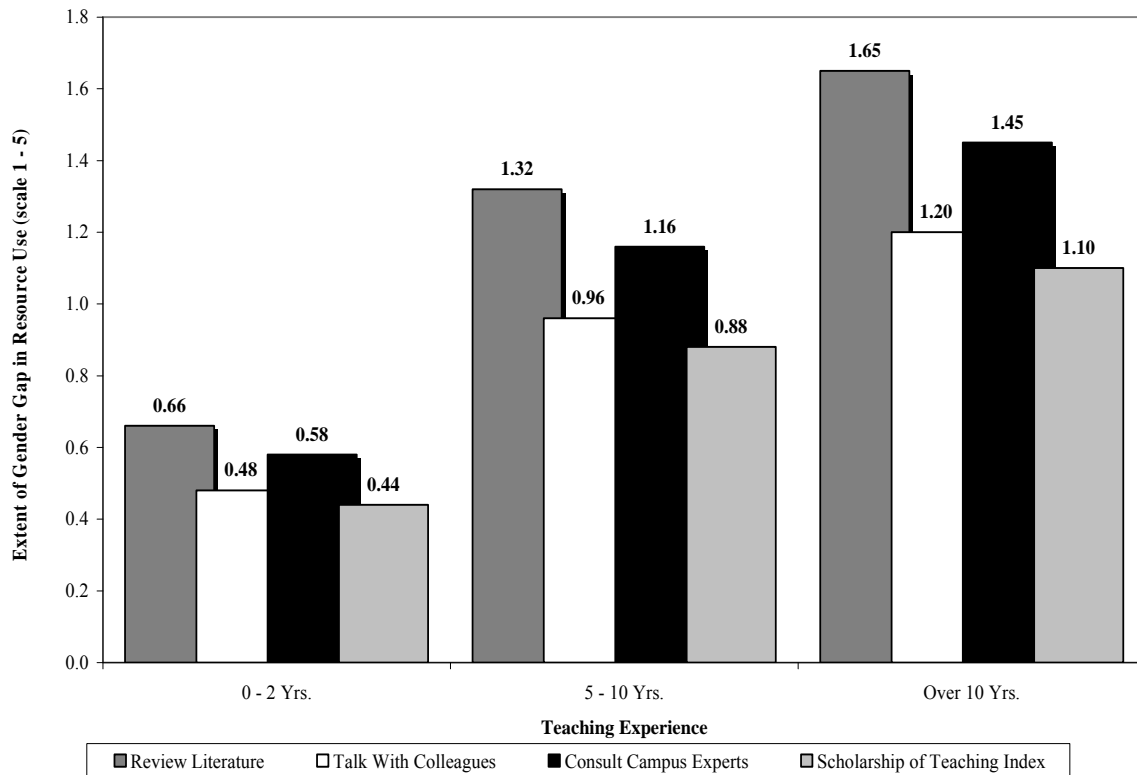
V. Discussion.

The purpose of this study was to provide an initial analysis of the extent to which higher education faculty engage in the Scholarship of Teaching; the focus was on gender and experience. The results do show that faculty differ in their levels of engagement in SoTL activities. Specifically, (a) female faculty are significantly more likely than male faculty to engage in the SoTL, and (b) this gender gap increases significantly with more teaching experience. The sample used in this study include faculty involved with the university's teaching and learning center. This suggests that these faculty may be more likely to engage in the SoTL. However, there is no a priori reason to anticipate the direction of the current findings. Further, the findings remain after controlling for type of course, type of students, and type of science. Because the faculty were from the same university the results are not a by-product of different types of higher education institutions (e.g., doctoral v. four-year). This study informs prior trends. Specifically, we already knew that female faculty, on average, teach more classes and are more likely to be on the teaching track and in teaching departments (NCES, 2006). Now we also know that female faculty, especially those experienced, are more likely to engage in the SoTL.

The implications of these results for student learning are important in two ways. First, based on the current sample, female faculty are more likely to approach teaching and learning reviewing the scholarly and pedagogy literature, discuss their ideas and experiences with other faculty and colleagues, and to consult and interact with experts. These activities generally

correspond to the SoTL model presented by Trigwell and Shale (2004), especially the role of communicating and making public one's experiences, understanding, and knowledge base of teaching. The greater use of experts by female faculty especially gets at Shulman's (2000) notion of "peer review." Second, therefore, if specific faculty are more likely to engage in the SoTL, this suggests that there are patterns in higher education classes where certain faculty, on average, create better learning contexts. According to Kreber (2002), these faculty who increasingly engage in the SoTL are not only excellent teachers but also expert teachers.

The benefits of the SoTL on student learning have been lauded in numerous publications (e.g., Trigwell and Shale, 2004). Yet, I argue that the actual benefits of the SoTL may be slightly underestimated. It is clear, on average, that teaching in higher education institutions—especially research institutions—is a devalued pursuit and a harder path to tenure and promotion (Braxton, Luckey, and Helland, 2002; Park, 1996). Given this, faculty who invest considerable time and energies into teaching vis-à-vis the SoTL may be especially driven to create outstanding teaching and learning contexts above and beyond those theoretically suggested by the SoTL. Indeed, as argued by Kreber (2000) and Palmer and Collins (2006), faculty who engage in the SoTL will need to be especially motivated and be driven by an intrinsic desire and reward structure given the low levels of external rewards and recognition. My results support this line of reasoning: faculty who are committed to the SoTL early in their career become increasingly committed to the SoTL throughout their career. That is, the SoTL becomes part of their *identity* and a core professional value (Nicholls, 2004).

Further research could expand and strengthen this study in several important ways. First, the present sample was limited to a single institution and a size under 100 faculty. Future studies should draw or analyze a national sample and, as important, a size that allows for the creation of subgroups. For example, it would be interesting to compare faculty within the same discipline or science or across different teaching responsibilities and loads. Second, I used identity theory as the organizing framework. Of interest would be the testing of the theory by gathering data on faculty identities. Both theoretical and empirical findings are necessary to further knowledge and understanding of important higher education issues. Explicit theoretical testing allows us to begin to answer the "Why" question of this research: Why do certain faculty engage in the SoTL? Third, the present study used four indicators of the SoTL. Other indicators should be examined to allow a full understanding of faculty differences in pedagogy and teaching-related practices. Finally, student-centered studies are needed to understand how and if students recognize the SoTL and their assessment of such practices.
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References

Atkinson, M. P. (2001). The scholarship of teaching and learning: Reconceptualizing scholarship and transforming the academy. *Social Forces, 79*(4), 1217-1230.

Bowden, R.G. (2007). Scholarship reconsidered: Reconsidered. *Journal of the Scholarship of Teaching and Learning, 7,* 1-21.

Boyer, E.L. (1990). Scholarship Reconsidered: Priorities of the professoriate. The Carnegie Foundation for the Advancement of Teaching. New York: John Wiley and Sons.

Braxton, J. M., Luckey, W., and Helland, P. (2002). Institutionalizing a Broader View of Scholarship Through Boyer's Four Domains (ASHE-ERIC Higher Education Report, 29, 2). San Francisco: Jossey-Bass.

Burke, P. J. (1991). Identity processes and social stress. *American Sociological Review, 56,* 836-849.

Cambridge, B.L. (2000). The scholarship of teaching and learning: A national initiative. In M. Kaplan and D. Lieberman (Eds.), *To Improve the Academy*, 56-68. Bolton, MA: Anker.

Colbeck, C. L., Cabrera, A. F., and Terenzini, P. T. (2001). Learning professional confidence: Linking teaching practices, students' self-perceptions, and gender. *The Review of Higher Education, 24*, 173-191.

Cross, K. P., and Steadman, M. H. (1996). Classroom Research: Implementing the scholarship of teaching. San Francisco: Jossey-Bass.

Harper, E. P., Baldwin, R. G., Gansneder, B. G., and Chronister, J. L. (2001). Full-time women faculty off the tenure track: Profile and practice. *The Review of Higher Education, 24,* 237-257.

Cataldi, E.F., Bradburn, E.M., and Fahimi, M. (2005). 2004 National Study of Postsecondary Faculty: Background characteristics, work activities, and compensation of instructional faculty and staff: Fall 2003 (NCES 2006-176). Washington, DC: National Center for Education Statistics

Kreber, C. (2000). Becoming an expert university teacher: A self-directed process. In H. Long (Ed.), *Practice and Theory in Self-Directed Learning*, 131-142. Schaumburg, IL: Motorola University.

Kreber, C. (2002). Teaching excellene, teaching expertise, and the scholarship of teaching. *Innovative Higher Education, 27*, 5-23.

Kreber, C. (2003). The scholarship of teaching: A comparison of conceptions held by experts and regular academic staff. *Higher Education, 46,* 93-121.

Kreber, C. (2005). Reflection on teaching and the scholarship of teaching: Focus on science teachers. *Higher Education, 50*(2), 323-359.

Kreber, C., and Cranton, P.A. (2000). Exploring the scholarship of teaching. *Journal of Higher Education, 71*(4), 476-495.

Kuh, G. D., and Hu, S. (2001). The effects of student-faculty interaction in the 1990s. *The Review of Higher Education, 24*, 309-332.

Lindholm, J. A., Astin, A., Sax, L. J., and Korn, W. S. (2002).The American College Teacher: National norms for 2001-2002 HERI Faculty Survey. Los Angeles: Higher Education Research Institute, UCLA.

Lindholm, J.A., Szelényi, K., Hurtado, S. and Korn, W.S. (2005).The American College Teacher: National norms for the 2004-2005 HERI Faculty Survey. Los Angeles: Higher Education Research Institute, UCLA.

National Center for Educational Statistics. (2006). Digest of Education Statistics, 2005. Washington, DC: U.S. Department of Education.

Nicholls, G. (2004). Scholarship in teaching as a core professional value: What does this mean to the academic? *Teaching in Higher Education, 9,* 29-42.

Park, S. M. (1996). Research, teaching, and service: Why shouldn't women's work count? *Journal of Higher Education, 67,* 46-84.

Paulsen, M. B., and Wells, C. T. (1998). Domain differences in the epistemological beliefs of college students. *Research in Higher Education, 39, 365-384.*

Richlin, L. (2001). Scholarly teaching and the scholarship of teaching. *New Directions for Teaching and Learning, 86,* 57-68.

Richlin, L., and Cox, M. D. (2004). Developing scholarly teaching and the scholarship of teaching and learning through faculty learning communities. *New Directions for Teaching and Learning, 97,*

Shulman, L.S. (2000). From Minsk to Pinsk: Why a scholarship of teaching and learning? *The Journal of Scholarship of Teaching and Learning, 1,* 48-53.

Shulman, L.S., and Hutchings, P. (1999). The scholarship of teaching: New elaborations, new developments. *Change, 31(5)*

Stets, J. E., and Burke, P. J. (2000). Identity theory and social identity theory. *Social Psychology Quarterly, 63,* 224-237.

Stryker, S., and Burke, P. J. (2000). The past, present, and future of identity theory. *Social Psychology Quarterly, 63,* 284-297.

Stryker, S., and Serpe, R. T. (1982). Commitment, identity salience, and role behavior: A theory and research example. In W. Ickes and E. S. Knowles (Eds.), *Personality, Roles, and Social Behavior*, 199-218. New York: Springer-Verlag.

Trigwell, K., Martin, E. Benjamin, J., and Prosser, M. (2000). Scholarship of teaching: A model. *Higher Education Research and Development, 19*(2), 155-168.

Trigwell, K, and Shale, S. (2004). Student learning and the scholarship of university teaching. *Studies in Higher Education, 29,* 523-536.

Umbach, P. D. (2006). The contribution of faculty of color to undergraduate education. *Research in Higher Education, 47*(3), 317-345.