

The effects of part-time faculty appointments on instructional techniques and commitment to teaching

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The last 30 years have brought about dramatic changes in the composition of the American professoriate. Between 1970 and 2003, the number of part-time faculty increased by 422%, while full-time faculty increased by only 71% (Schuster & Finkelstein, 2006). Even with the rapid proliferation of part-time appointments, few have studied the impacts that these appointments have had on colleges and universities. Several scholars (Baldwin & Chronister, 2001; Gappa & Leslie, 1993) have asserted that part-time faculty are as effective in delivering instruction as their full-time counterparts, but only recently have researchers begun to conduct empirical research on the effects of part-time faculty on undergraduate education. Recent studies have found a negative relationship between the use of part-time faculty members on persistence (Eagan, Jaeger, & Thornton, 2008) and graduation rates (Ehrenberg & Zhang, 2005; Jacoby, 2006). Others (Umbach, 2007) suggest that, compared with their full-time peers, part-time faculty interact less frequently with students, spend less time preparing for classes, and have lower expectations of their students. Even with this growing body of research, we still know relatively little about how part-time faculty affect instruction and the undergraduate experience.

The proposed study seeks to expand this body of research by focusing on the relationship between faculty appointment type (part-time versus full-time) and instructional practices and commitment to teaching. A long line of inquiry suggests that faculty play a central role in undergraduate education (Astin, 1993; Kuh & Hu, 2001; Pascarella & Terenzini, 1991, 2005, Umbach & Wawryzinski, 2005). However, most of this research treats faculty as a heterogeneous group and does not examine the impact that appointment type has on faculty instruction. Relying on social exchange theory and psychological contracts research (see Blau, 1964; Kalleberg, 2000; Pearce, 1993), this study asks the following questions:

1. To what degree do part-time faculty members differ from their full-time peers in their instructional approaches and commitment to teaching?
2. What effect does proportion of part-time faculty on a campus have on the instructional approaches and commitment to teaching of both full-time and part-time faculty?
3. To what extent can other institutional characteristics explain differences in instruction?

Conceptual Framework

Framing this study are theories from labor economists and their research on contingent work arrangements. Labor economists define contingent work as “any job in which an individual does not have an explicit or implicit contract for long-term employment or on in which the minimum hours worked can vary in a nonsystematic manner” (U.S. Bureau of Labor Statistics, p. 3). The normal or standard work arrangement for workers during the twentieth century was performed full time and was thought to continue indefinitely (Kalleberg, 2000). Part-time college faculty fall under this definition of contingent workers.

As in higher education, the demand for contingent work arrangements in the U.S. labor force, has grown dramatically (Barker & Christensen, 1998; Connelly & Gallagher, 2004; Kalleberg, 2000; Liden, Wayne, Kraimer, & Sparrowe, 2003; Matusik & Hill, 1998; Pfeffer & Baron, 1988). As a result, a rather large body of research on the effectiveness of contingent workers in the U.S. has developed in recent years. Several studies have applied social exchange theory (Blau, 1964) to the study of contingent workers. Social exchange theory posits that individuals form relationships with those who can provide valued resources. In exchange for these resources, individuals will reciprocate (Gouldner, 1960) by providing resources and

support. Thus, individuals will exhibit greater commitment to an organization when they feel supported and rewarded (Rhoades, Eisenberger, & Armeli, 2001). This commitment, in turn, manifests itself in increased performance and other work behaviors that benefit the organization. Recent research indicates that contingent workers are less committed to their employers and perform at lower levels than their more permanent workers (Connelly & Gallagher, 2004; Liden et al., 2003; Pearce, 1993).

Others have argued that contingent workers have a negative effect on other employees within an organization (Kalleberg, 2000; Pearce, 1993). They rely on psychological contract theory, a concept closely related to social exchange theory, which suggests that employees and employers develop mutual obligations whereby the employee owes an employer certain contributions and the employer owes inducements for work (Robinson, Kratz, & Rousseau, 1994; Rousseau, 1995). Researchers contend that long-term employees of an organization where a large number of contingent workers are employed will feel insecure about their status in their job; thus, the psychological contract and employee trust in the organization are broken. In turn, job performance (Kraimer, Wayne, Liden, & Sparrowe, 2005) and organizational commitment (Pearce, 1993) decline.

While we know a great deal about the effects of contingent workers in the general workforce, we know relatively little about the effects of contingent appointments on higher education. More specifically, we know little about the effects that contingent faculty have on undergraduate education. The few studies that have explored the impact of contingent faculty on undergraduate education have used single institutions or have been limited in their scope. For example, one study at a community college found no differences between part-time faculty and full-time faculty in student learning in a remedial math class (Bolge, 1995). Some (Bettinger &

Long, 2005; Harrington & Schibik, 2001) found a negative relationship between the number of part-time faculty members a student has and their retention to the second semester and graduation rates (Ehrenberg & Zhang, 2005). Finally, Umbach (2007) suggests that, compared with their full-time peers, part-time faculty interact less frequently with students, spend less time preparing for classes, and expect less work from their students. He also found a negative relationship between the percentage of part-time faculty on a campus and the frequency of faculty student interaction.

Using social exchange theory and psychological contracts research, I offer two general hypotheses about the effects of part-time faculty on teaching and learning. First, relative to full-time faculty, part-timers will exhibit lower levels of commitment to their institution and will exhibit lower levels of instructional performance. Second, faculty on campuses with high proportions of part-time faculty will engage students less frequently in classroom activities that enhance student learning and will have lower levels of commitment to teaching.

Method

Sample and dependent measures

This study uses full-time and part-time instructional faculty in the 2001 HERI Faculty Survey. Unlike many national data sets of college faculty, the HERI faculty data include a series of questions related to instruction, as well as a comprehensive set of control variables. The sample includes 20,616 faculty members from 148 institutions. Approximately 15% of these faculty members hold part-time appointments.

I use three factor composites representing instructional practices as dependent measures (See Appendix A for variables included in the models). The first is a nine-item construct ($\alpha=.77$) that represents *active learning* techniques and includes measures such as frequency of class

discussions and use of cooperative learning. The second measure, goal of educating the *preparing citizens*, is a nine-item factor composite ($\alpha=.88$) that includes questions that assess the level of importance faculty place on goals such as helping to develop personal values and preparing for responsible citizenship. The third measure represents inclusion of *diversity* in instruction and is a two-item construct ($\alpha=.92$) that consists of measures of whether a faculty member requires readings on racial/ethnic issues and women/gender issues. I also model three single-item measures that are proxies for commitment to teaching: *time spent preparing for class*; *time spent advising/counseling students*; and participation in a *teaching workshop*.

Analytical approach

Because I am interested in both the individual and institutional effects on instruction, I employ a series of hierarchical linear models (HLM). Implicit in the research questions posed is a data structure where faculty are nested within colleges and universities. Traditionally, researchers built individual-level regression models where they included institution-level characteristics. This use of regression is considered by many as inappropriate when examining complex data at multiple levels (Heck & Thomas, 2000; Luke, 2004). In fact, it is quite possible that this traditional strategy will result in inaccurate parameter estimates (Ethington, 1997; Heck & Thomas, 2000; Luke, 2004; Raudenbush & Bryk, 2002). Using HLM overcomes the problems associated with complex multilevel data by simultaneously estimating equations for both individual and institutional effects. It also allows me to effectively explore the contextual effects of employing large numbers of contingent faculty on a campus.

It is important to note that teaching workshop is a dichotomous outcome, therefore it must be modeled using logistic HLM rather than the standard HLM employed all of the other dependent measures used in these analyses. To aid in interpretation, with the exception of

participation in a teaching workshop, the coefficients represent a change in a standard deviation in the dependent measure that results from a one-unit change in the independent measure, holding all other variables in the model equal. For the teaching workshop outcome, I convert the coefficients to probabilities. In other words, they represent the change in the probability of participating in a teaching workshop as a result of a one-unit change in the independent measure. For categorical independent measures, the numbers represent the difference in the probability of participating in a teaching workshop between the target group and the reference group.

Null model. Most (Ethington, 1997; Raudenbush & Bryk, 2002) who do multilevel model recommend running analyses in three steps: the null model, the within model, and the full model. The first step is to create a model with no predictor variables. The intercept for this model, often called the null model or one-way ANOVA model, was allowed to vary, thereby partitioning the variance within and between institutions. The results of the null model are used to estimate the proportion of variance that exists between and within colleges. Table 1 presents the variance components. The proportion of variance between institutions, often called the intraclass correlation (ICC), ranges from .01 for whether a faculty member participated in a teaching workshop (dichotomous)¹ to .10 for educating the whole student. Although somewhat small, the variance between institutions for all of the measures is not trivial, and warrants further investigation. Additionally, for this study, it is conceptually important to understand the organizational effects (e.g., proportion of part-time) that significantly relate to the dependent measures used in this study.

In addition to part-time status and proportion of part-time faculty at an institution, I include a variety of independent variables of both faculty characteristics (gender, race/ethnicity,

¹The ICCs for dichotomous outcomes are typically quite small and are often not used to describe variance between institutions because they do little to explain the range of variance for categorical outcomes (Raudenbush & Bryk, 2002).

highest degree earned, academic discipline of department, number of courses taught in fall term, years since highest degree, age, age squared, salary, and salary term) and institutional attributes (Carnegie classification, sector, urbanicity, undergraduate headcount, and minority serving institution status).

Within model. The second step of the modeling procedure is the creation of the within-institution models (also known as the level one models or the individual level models). My primary variable of interest is appointment type, represented by part-time (full-time is the reference group). Also included in the level one models are a number of controls that previous research suggests effects teaching strategies and interactions with students. I introduce a dummy-coded variable representing gender (1=female, 0=male) and a series of dummy-coded variables for race/ethnicity (with whites being the reference category). I also include highest degree earned, the number of years since highest degree, and age, and age squared (to account for the nonlinear relationship between age and instructional approaches and commitment to teaching) are included in the models as controls for experience. In addition, to control for the possible effect that the number of courses a faculty member teaches may have on the outcome variables, I included the number of courses taught in the academic year in the models. Finally, included in the models are variables representing the academic discipline of appointment. I use Biglan's (1973a, 1973b) classification of academic fields to control for disciplinary differences in instruction. Based on Biglan, I classify faculty into one of four disciplinary types: hard-applied, hard-pure, soft-applied, soft-pure.

Full model. In the third step in the modeling process, I built the between-institution model (also known as the level two model) by allowing the intercept to vary by institution. I then modeled the intercept (or institution average) with institutional characteristics. I did this in two

steps. First, in addition to the level one variables, I included only the proportion of part-time faculty at an institution at level two. In the second step, I added controls for other institutional characteristics. Included in the level two models are controls for five variables (doctoral, masters, bachelor's, community college, and other institution type) representing Carnegie Classification. I also include locale or urbanicity (urban, suburban, and rural) and sector (public or private). To control for size of the institution, I include undergraduate headcount in the models. Finally, I introduce a variable that represents whether the college is a minority serving institution (Hispanic Serving Institution or Historically Black College or University).

In the final step of the modeling process, I randomized any of the part-time appointment type slopes that had significant variance components. In other words, when the effect of being a part-time faculty member varied significantly by institution, I modeled the average institution part-time differentials with the institutional characteristics included in the random intercept models. By doing this, I was able to assess institutional differences for part-time.

Results

Instructional practices

Table 2 presents a summary of the models of faculty instructional practices. Although the effects are relatively small (ranging from -0.06 SD to -0.09 SD in the fully controlled model), relative to their full-time counterparts, part-time faculty engage in place less of an emphasis on active learning, preparing well-rounded citizens, and diversity experiences. We see few if any changes in the coefficients between the within and fully controlled models.

The intercept model, or the model of institutional averages, suggests no statistically significant effect of the proportion of part-time faculty on the good teaching measures. The intercept model does, however, suggest some differences based on an institution's

characteristics. For example, faculty at doctoral-granting institutions engage less frequently (ranging from -0.09 to -0.12 SD) than do faculty at baccalaureate granting institutions in all three of the teaching practices measured here. Faculty at private colleges and universities place less of an emphasis on diversity in their teaching than faculty at public colleges.

Among the three instructional practice variables, only the part-time slope variance for active learning was statistically significant. This suggests that the part-time effect on measures of educating the whole student and diversity does not vary significantly between institutions. In contrast, the part-time effect on active learning does vary significantly between colleges and universities, but the slope model does little to identify where these differences lie.

Commitment to teaching

The differences between part-time and full-time faculty in their commitment to teaching are far more striking (see table 3). The within models indicate that part-time faculty spend at least a half a standard deviation less time preparing for class and advising their students than full-time faculty. These differences change very little after institutional variables are added to the models. Likewise, relative to full-time faculty, part-time faculty are 68 percentage points less likely to participate in a teaching workshop, after controlling for all institutional and individual level variables.

The intercept models indicate that the proportion of part-time faculty has an effect on the commitment of all faculty on a campus, regardless of appointment type. With every standard deviation increase in the proportion of part-time faculty on a campus, the average time spent preparing for class drops .09 SD, average time spent advising drops .06 SD, and the probability of attending a teaching workshop drops approximately 11 percentage points.

Other institutional characteristics also affect average faculty commitment to teaching. Faculty at doctoral institutions are less committed to teaching, relative to faculty members at bachelors institutions. Doctoral institution faculty spend .24 SD less time preparing for class and .41 SD less time advising. They also are 30 percentage points less likely to participate in a teaching workshop. The results regarding community college faculty commitment to teaching are more mixed. While community college faculty spend less time advising (-.21 SD) compared to faculty at bachelor's institutions, they spend approximately the same time preparing for class and are 46 percentage points more likely to participate in a teaching workshop. The news is equally mixed for faculty at minority serving institutions (MSIs). While MSI faculty spend more time advising than faculty at predominantly white institutions (PWIs), they are significantly less likely to participate in a teaching workshop.

The part time effect varied significantly between institutions for all three of the commitment to teaching measures (see the part-time slope variance); therefore, I modeled all three part-time slopes. The first model suggests that part-timers at community colleges spend less time preparing for class than part-time faculty at bachelor's institutions. Private institution part-timers spend less time preparing for class than public school part-timers. In contrast, part-time faculty at MSIs spend more time preparing for class than their part-time colleagues at PWIs. In terms of time spent advising, the proportion of part-time faculty has a small negative effect on the average time part-timers spend on advising. This is the only place where the proportion of part-time faculty has any effect on the part-time differential. Part-timers at nearly all institution types (excluding the "other" category) are significantly less likely than part-timers at bachelor's institutions to attend a teaching workshop. The biggest difference is at community colleges,

where part-timers are 61 percentage points less likely to attend a workshop than part-timers at bachelor's colleges.

Some of the organizational effects on faculty commitment to teaching are best seen graphically. Figures 1 and 2 presents the effect of proportion of part-time faculty has on time spent preparing for class and advising. Each pair of bars represents variation in the proportion of part-time faculty on a campus. The first pair, low proportion of part-time faculty, represents institutions whose part-time faculty make up 12% of their faculty headcount (1 SD below the mean in proportion of part-time faculty). The above average part-time pair of bars indicates means of full-time and part-time faculty on campuses that have 56% part-time faculty (1 SD above the mean in proportion of part-time faculty). The final pair, high part-time, represents campuses where part-time faculty make up 78% of their overall faculty (2 SD above the mean).

Both of these figures indicate the dramatic effect that the representation of part-time faculty on a campus can have on both part-time and full-time faculty commitment to teaching. When a campus has relatively few part-time faculty members, full-time faculty are above average on both time spent preparing for class and time spent advising. Relative to the overall mean for all faculty, part-time faculty at these colleges spend nearly 0.40 SD less time preparing for class and 0.45 less time advising students. While the part-time/full-time gap remains constant as the representation of part-timers increases, we see that both of their deviations from the overall means drop below the overall faculty mean. On campuses where part-time faculty representation is high, full-time faculty are more than 0.10 SD lower than the overall mean on time spent advising and time spent preparing for class. Relative to the overall mean, part-time faculty on these largely part-time faculty campuses spend more than 0.60 SD less time preparing for class and 0.80 SD less time advising students.

Part-time faculty commitment to teaching also varies by institutional type. Figures 3 and 4 display differences in time spent preparing for class and advising students between part-time faculty and the overall full-time average. On average, part-time faculty spend approximately half a SD less than full time faculty preparing for class (see Figure 3). In contrast, part-time faculty spend considerably less than the average part time faculty member (more than one-third of a SD). We see very large deficits in time spent advising among part-time faculty at doctoral universities and community colleges (see figure 4). While part-timers, on average, spend approximately spend approximately one half a SD less than full-time peers, part-time faculty at community colleges and doctoral universities spend approximately 1 SD less than full-time faculty.

Limitations

When considering these results, it is important to understand this study is not without its limitations. First, it is possible that the sample of faculty used for the study is likely biased. Institutions volunteered to survey their faculties, and it is possible that faculty from institutions who chose to participate in the study are different from faculty at institutions who opted not to participate. It is also important to note that part-time faculty members were largely underrepresented in this dataset. While differences may exist in ways that cannot be measured quantitatively, when I compared the faculty used in these analyses to faculty nationally, they were not statistically different in terms of Carnegie Classification, sector and region. It also is important to note that this is possibly the largest data set that includes a very detailed accounting of faculty attitudes, instructional techniques, and work patterns in and out of the classroom.

Second, the intraclass correlations, or the amount of variation explained by institutional membership, are somewhat low ranging from 0.01 to 0.10. In other words, most of the variance between faculty (90% to 99%) lies within institutions rather than between institutions. Therefore, any assertions made about organizational effects should not be overstated. However, because models of behaviors and attitudes often explain very little of the variance between individuals, the conclusions drawn here should not be disregarded as trivial. In fact, the models presented in this study explain a considerable amount of the between-institution variance.

Third, with the exception of coefficients in the commitment models, many of the effect sizes for many of the part-time faculty coefficients are quite small. If we use the guidelines proposed by Rosenthal and Rosnow (1991), the part-time effect sizes for academic challenge and time spent preparing for class are small and the effect size for active and collaborative techniques is trivial. While these small effects should be interpreted with some caution, they are still worthy of note given the overall pattern of negative effects of part-time faculty. Likewise, it is important to be cautious in the application of any guidelines of effect size interpretation. Some (Hill & Thompson, 2004) have argued that these guidelines are arbitrary and that effect sizes should be considered in the context of each study.

Discussion and implications

Guided by social exchange theory and psychological contracts research, I offered two general hypotheses about the effects of part-time faculty on teaching and learning. First, relative to full-time faculty, part-timers will exhibit lower levels of commitment to their institution and will exhibit lower levels of instructional performance. This study offers some compelling evidence to suggest that, compared with their full-time peers, part-time faculty are underperforming in their delivery of undergraduate instruction and are less committed to

teaching. When compared with full-time faculty, part-time faculty advise students less frequently, use active teaching techniques less often, place a lower priority on educating students to be good citizens, spend less time preparing for class, include diversity in their teaching less frequently, and are less likely to participate in a teaching workshop. These findings support and add to the negative effects of part-time appointments found by Umbach (2007).

The concept of social exchange theory may be at work here. As social exchange theory suggests, contingent faculty are likely to reciprocate the support they receive from colleges and universities. Faculty in part-time appointments earn low wages, receive little support for professional development, and work in environments that often marginalize them (Gappa & Leslie, 1993). Given these work conditions, it should surprise few that part-time faculty display a lack of commitment and perform less effectively than their full-time. Therefore, while this study identifies some deficiencies among part-time faculty, it is important not to lay blame entirely on faculty in these appointments.

The second hypotheses contended that faculty on campuses with high proportions of part-time faculty will engage students less frequently in classroom activities that enhance student learning and will have lower levels of commitment to teaching. The findings of this study offer mixed support for this hypotheses. It seems that all faculty members' commitment to teaching, regardless of appointment type, drops as the proportion of part-time faculty members on a campus increases. The proportion of part-time faculty on a college campus is negatively related to all three of the commitment measures used in this study. The psychological contract does appear to be broken for faculty members who work at institutions with large numbers of part-time faculty, and this broken contract is significantly affecting full- and part-time faculty commitment to teaching. This finding extends previous work that found a negative relationship

between part time representation on a college faculty and faculty commitment to teaching as measured by frequency of student-faculty interactions (Umbach, 2007). On the other hand, this study found that the proportion of part-time faculty on a college campus had no contextual effect on the instructional techniques studied here.

This study also highlights some other important organizational effects related to the employment of part-time faculty and perhaps some concern for those at doctoral universities and community colleges. Relative to faculty at bachelor's degree granting colleges, faculty at doctoral universities place less of an emphasis on the instructional practices used in this study. Institution type also seems to be related to faculty commitment to teaching and the relationship between commitment to teaching and part-time appointments. In particular, faculty members at doctoral universities, and to a somewhat lesser extent community college faculty, appear to be among the least committed. This translates to even lower commitment of part-time faculty members on these campuses.

These findings have important research, policy, and practice implications. As administrators attempt to balance efficiency and effectiveness when deciding who should deliver instruction on their campuses, they would be wise to consider the impact part-time faculty have on undergraduate education. Gappa & Leslie (1993) have suggested that colleges and universities should develop a campus-wide plan for the use of part-time faculty. The evidence presented in this study should be a part of the discussion when developing such plans.

These findings also suggest that hiring and supporting part-time faculty does much more than enhance efficiency. Part-timers have considerable effect on the way instruction is delivered. As part of the decision-making process to hire part-time faculty, colleges and universities might consider what is reasonable to expect from them. Is it reasonable to expect that part-timers will

engage in effective teaching practices as frequently and will be as committed to teaching as their full-time peers? The way a campus answers this question can have a profound impact on the way they treat part-time appointments. If campus answers “yes”, it is incumbent upon them to provide the support structures and evaluation processes to ensure part-time faculty effectiveness. Results suggest that an answer of “no” will not only have an effect on undergraduates, it is likely to perpetuate feelings of marginalization among part-time faculty.

Colleges and universities also are advised to provide part-time faculty with support and training that is likely to increase their commitment, trust, and performance. Gappa and Leslie (1993) offer a number of suggestions. Among them, they recommend that colleges offer benefits, conduct regular performance reviews, provide instructional support and professional development, develop a salary scale, create standards for progression through the salary scale, and provide equitable compensation to part-time faculty. Baldwin and Chronister (2001) provide similar suggestions to institutions when working with full-time tenure-ineligible faculty that may also be helpful. They suggest institutions create a defined probationary period and explicit evaluation criteria for contingent faculty. They also recommend that contingent faculty be allowed to participate in campus governance and curriculum development.

Policy makers also might consider the negative effects of contingent appointments when allocating funds to higher education. Sharp declines in public funding in recent years have forced colleges and universities to seek more inexpensive ways to deliver instruction and to increasingly rely on short-term employment arrangements to maintain flexibility in their human resource decisions (Baldwin & Chronister, 2001; Gappa & Leslie, 1993; Tierney, 1998). Clearly, the negative impact of the use of part-time faculty is an unintended consequence of budget cuts, but

it is a consequence that should be considered when policy makers weigh issues of efficiency and quality.

Finally, the findings from this study leave many questions unanswered, offering several opportunities for additional inquiry. Future research might explore the effects that initiatives aimed at part-time faculty, such as professional development support, have on commitment and performance. Similarly, it would be instructive to know how frequently part-time faculty participate in professional development activities and training on campuses where such opportunities are offered to them. Studies of this kind would provide guidance to institutions seeking to develop policies and support mechanisms for contingent faculty. It also might be useful to test directly the theories of social exchange and psychological contracts by examining feelings of trust and commitment among part-time faculty and their relationship with effectiveness. A related study might examine what policies and support mechanisms engender the greatest feelings of trust and commitment among part-time faculty.

Conclusion

This study extends our understanding about the effects that part-time appointment have on commitment to teaching and instructional practices. While much is still unresolved, it is clear that currently, part-time faculty tend to be less effective in their instruction and are less committed to teaching than their full-time peers. This seems particularly important given the rapid increases in part-time appointments.

References

- Baldwin, R., & Chronister, J. (2001). *Teaching without tenure: Practices and policies for a new era*. Baltimore, MD: Johns Hopkins University Press.
- Barker, K., & Christensen, K. (1998). Controversy and challenges raised by contingent work environments. In K. Barker & K. Christensen (Eds.), *Contingent work: American employment relations in transition* (pp. 1-18). Ithaca, NY: Cornell University Press.
- Benjamin, E. (2002). How over-reliance on contingent appointments diminishes faculty involvement in student learning. *Peer Review*, 5(1), 4-10.
- Bettinger, E., & Long, T. L. (2005). *Help or hinder? Adjunct professors and student outcomes*. Ithaca, New York: Cornell University.
- Biglan, A. (1973a). The characteristics of subject matter in different academic areas. *Journal of Applied Psychology*, 57(3), 195-203.
- Biglan, A. (1973b). Relationships between subject matter characteristics and the structure and output of university departments. *Journal of Applied Psychology*, 51, 204-213.
- Blau, P. M. (1964). *Exchange and power in social life*. New York: Wiley.
- Bolge, R. D. (1995). *Examination of student learning as a function of instructor status (full-time vs. Part-time) at Mercer Community College*. West Windsor, New Jersey: Mercer Community College.
- Connelly, C. E., & Gallagher, D. G. (2004). Emerging trends in contingent work research. *Journal of Management*, 30(6), 959-983.
- Eagan, K, Jaeger, A. J., & Thornton, C. H. (April, 2008). *Examining the Effects of Part-Time Faculty Instruction in Introductory Courses on Student Persistence*. Paper presented at the 2008 Annual Meeting of the American Educational Research Association, New York, NY.
- Ethington, C. A. (1997). A hierarchical linear modeling approach to studying college effects. In J. Smart (Ed.), *Higher education handbook of theory and research* (Vol. 12, pp. 165-194). Edison, NJ: Agathon.
- Ehrenberg, R. G., & Zhang, L. (2005). Do tenured and tenure-track faculty matter? *Journal of Human Resources*, 40(3), 647-659.
- Gappa, J. M., & Leslie, D. W. (1993). *The invisible faculty: Improving the status of part-timers in higher education*. San Francisco, CA: Jossey-Bass.
- Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, 25, 161-177.

- Heck, R. H., & Thomas, S. L. (2000). *An introduction to multilevel modeling techniques*. Mahwah, N.J.: Lawrence Erlbaum Associates.
- Hill, C. R. & Thompson, B. (2004). Computing and interpreting effect sizes. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (Vol. 19, pp. 175-196). Dordrecht, Netherlands: Kluwer Academic Publishers.
- Jacoby, D. (2006). Effects of part-time faculty employment on community college graduation rates. *Journal of Higher Education*, 77(6), 1081-1103.
- Kalleberg, A. L. (2000). Nonstandard employment relations: Part-time, temporary and contract work. *Annual Review of Sociology*, 26, 341-365.
- Kraimer, M. L., Wayne, S. J., Liden, R. C., & Sparrowe, R. T. (2005). The role of job security in understanding the relationship between employees' perceptions of temporary workers and employees' performance. *Journal of Applied Psychology*, 90(2), 389-398.
- Liden, R. C., Wayne, S. J., Kraimer, M. L., & Sparrowe, R. T. (2003). The dual commitments of contingent workers: An examination of contingents' commitment to the agency and the organization. *Journal of Organizational Behavior*, 24, 609-625.
- Luke, D. A. (2004). *Multilevel modeling*. Thousand Oaks, CA: Sage Publications.
- Matusik, S. F., & Hill, C. W. (1998). The utilization of contingent work, knowledge creation, and competitive advantage. *Academy of Management Review*, 23(4), 680-697.
- Pearce, J. L. (1993). Toward an organizational behavior of contract laborers: Their psychological involvement and effects on employee co-workers. *Academy of Management Journal*, 36(5), 1082-1096.
- Pfeffer, J., & Baron, J. N. (1988). Taking the workers back out: Recent trends in the structuring of employment. *Research in Organizational Behavior*, 10, 257-303.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*. Thousand Oaks, CA: Sage Publications.
- Rhoades, L., Eisenberger, R., & Armeli, S. (2001). Affective commitment to an organization: The contribution of perceived organizational support. *Journal of Applied Psychology*, 86, 825-836.
- Robinson, S. L., Kratz, M. S., & Rousseau, D. M. (1994). Changing obligations and the psychological contract: A longitudinal study. *Academy of Management Journal*, 37(137-152).
- Rousseau, D. M. (1995). *Understanding psychological contracts in organization: Understanding written and unwritten arguments*. Newbury Park, CA: Sage.

- Schuster, J. H. & Finkelstein, M. J. (2006). *The American faculty: Restructuring academic work and careers*. Baltimore, MD: Johns Hopkins University Press.
- Rosenthal, R., & Rosnow, R. L. (1991). *Essentials of behavioral research: Methods and data analysis* (2nd ed.). New York: McGraw-Hill.
- Snijders, T. A. B. & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. Thousand Oaks, CA: Sage.
- Tierney, W. G. (1998). Tenure is dead. Long live tenure. In W. G. Tierney (Ed.), *The responsive university: Restructuring high performance*. Baltimore, MD: The Johns Hopkins University Press.
- Umbach, P. D. (2007). How effective are they? Exploring the impact of contingent faculty on undergraduate education. *Review of Higher Education*, 30(2), 91-123.
- Umbach, P. D., & Wawrzynski, M. R. (2005). Faculty do matter: The role of college faculty in student learning and engagement. *Research in Higher Education*, 46(2), 153-184.

Table 1. Variance components and inter-class correlations of dependent measures

	Instruction			Commitment to teaching		
	Active Learning	Educating Whole	Diversity	Time spent preparing	Time spent advising	Teaching workshop
Total Variance	1.00	1.00	1.01	1.01	1.01	
Variance within institutions	0.95	0.90	0.98	0.95	0.98	
Variance between institutions	0.04	0.10	0.03	0.06	0.03	0.20
Proportion between institutions	0.04	0.10	0.03	0.06	0.03	0.01

Note: See Snijders and Bosker (1999) for calculation of variance components of dichotomous outcomes (teaching workshop)

Table 2. Summary table of institution-level coefficients of the hierarchical model instructional practices and commitment to teaching

	Active learning		Preparing citizens		Diversity	
	Within Model	Full Model	Within Model	Full Model	Within Model	Full Model
Individual-level variables						
Part-time	-0.087 **	-0.092 **	-0.065 **	-0.064 **	-0.071 **	-0.070 **
Part-time slope model						
Doctoral		-0.038				
Master's		-0.033				
Community college		-0.182				
Other institution type		-0.137 +				
<i>Bachelor's institutions (reference group)</i>						
Private		0.026				
Urban		-0.065				
Suburban		-0.036				
<i>Rural (reference group)</i>						
Minority serving institution		-0.002				
Size		0.049				
Proportion part-time faculty		-0.003				
Intercept model						
Intercept	0.000	0.003	0.019	0.028	0.011	0.018
Doctoral		-0.099 *		-0.123 +		-0.093 *
Master's		-0.034		0.059		-0.052
Community college		-0.171 **		0.051		-0.043
Other institution type		-0.091		0.254 *		-0.148
<i>Bachelor's institutions (reference group)</i>						
Private		0.018		0.183		-0.047 +
Urban		-0.054		-0.095 *		0.022
Suburban		-0.076 *		-0.058		0.009
<i>Rural (reference group)</i>						
Minority serving institution		-0.039		0.057		0.043
Size		-0.001		-0.008		-0.013
Proportion part-time faculty		-0.010		-0.024		0.014
Variance Components						
Variance between institutions	0.024 ***	0.021 ***	0.061 ***	0.045 ***	0.01 ***	0.01 ***
Part-time slope variance	0.037 ***	0.038 ***	0.01		0.009	
Variance within institutions	0.858	0.858	0.817	0.818	0.729	0.73
Variance between explained	43.1%	50.1%	37.8%	53.8%	64.9%	66.7%
Variance within explained	10.1%	10.1%	9.3%	9.2%	25.4%	25.3%
Reliability-Intercept	0.719	0.697	0.865	0.829	0.588	0.577
Reliability-Slope	0.330	0.335	0.142		0.143	

Note: Level-1 controls include number of courses taught during the academic year, years teaching, age, gender, level of highest degree, race/ethnicity, academic discipline of appointment

Table 3. Summary table of institution-level coefficients from the hierarchical linear models model commitment to teaching variables.

	<u>Time spent preparing</u>		<u>Time spent advising</u>		<u>Teaching workshop</u>	
	Within Model	Full Model	Within Model	Full Model	Within Model	Full Model
Individual-level variables						
Part-time	-0.503 ***	-0.508 ***	-0.561 ***	-0.568 ***	-0.714 ***	-0.682 ***
Part-time slope model						
Doctoral		0.129		-0.003		-0.314 +
Master's		0.042		-0.047		-0.443 *
Community college		-0.286 *		-0.117		-0.610 *
Other institution type		0.220		0.532 ***		0.930 ***
<i>Bachelor's institutions (reference group)</i>						
Private		-0.173 *		0.017		-0.033
Urban		0.021		0.024		0.049
Suburban		0.043		0.122		-0.005
<i>Rural (reference group)</i>						
Minority serving institution		0.144 +		0.102		-0.007
Size		0.013		0.037		0.090
Proportion part-time faculty		0.011		-0.060 +		-0.042
Intercept model						
Intercept	0.034 +	0.041 *	-0.007	-0.013	0.040 **	0.060 ***
Doctoral		-0.247 ***		-0.410 **		-0.300 *
Master's		-0.110 *		-0.047		0.127
Community college		-0.090		-0.212 *		0.456 *
Other institution type		-0.226 +		-0.417 ***		0.145
<i>Bachelor's institutions (reference group)</i>						
Private		-0.053		-0.064		-0.062
Urban		-0.027		0.042		-0.026
Suburban		0.011		0.054		-0.116
<i>Rural (reference group)</i>						
Minority serving institution		-0.101		0.096 +		-0.270 +
Size		-0.036		-0.014		-0.065
Proportion part-time faculty		-0.088 ***		-0.055 +		-0.105 *
Variance Components						
Variance between institutions	0.046 ***	0.027 ***	0.025 ***	0.021 ***	0.185 ***	0.126 ***
Part-time slope variance	0.047 ***	0.029 **	0.04 ***	0.03 **	0.122 **	0.121 **
Variance within institutions	0.866	0.867	0.919	0.918		
Variance between explained	20.7%	53.1%	18.6%	31.4%	9.3%	38.2%
Variance within explained	8.7%	8.7%	6.0%	6.0%		
Reliability-Intercept	0.825	0.743	0.720	0.688	0.790	0.726
Reliability-Slope	0.376	0.281	0.331	0.279	0.243	0.241

Note: Level-1 controls include number of courses taught during the academic year, years teaching, age, gender, level of highest degree, race/ethnicity, academic discipline of appointment.

Teaching workshop is a dichotomous outcome; coefficients are represented as changes in probability.

Figure 1. The effect of proportion part-time faculty members on the time part-time and full-time faculty spend preparing for class.

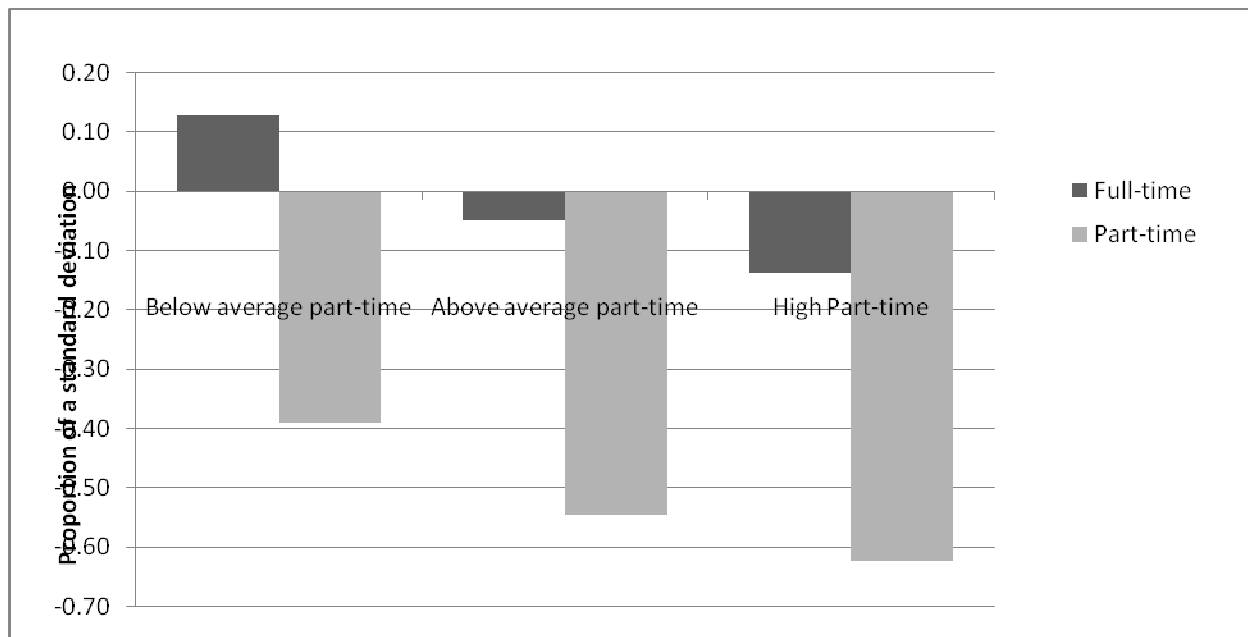


Figure 2. The effect of proportion part-time faculty members on the time part-time and full-time faculty spend advising.

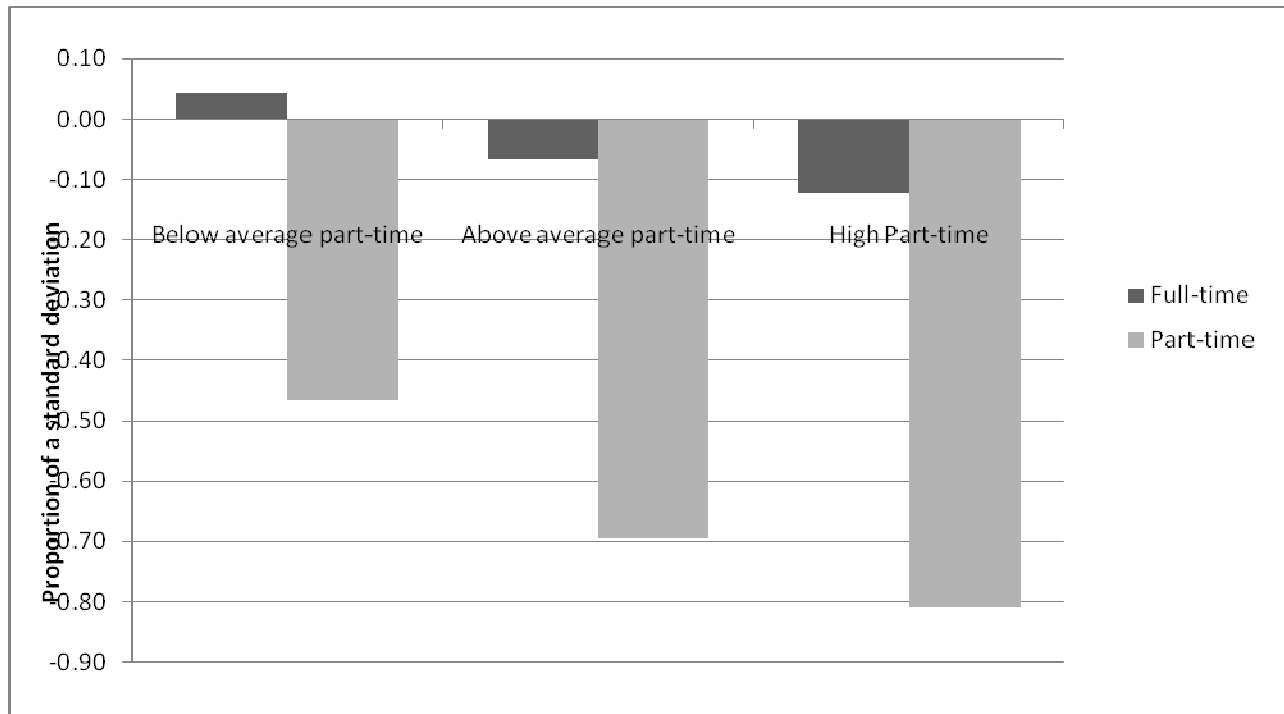


Figure 3. The effect of institutional type on the time part-time faculty spend preparing for class.

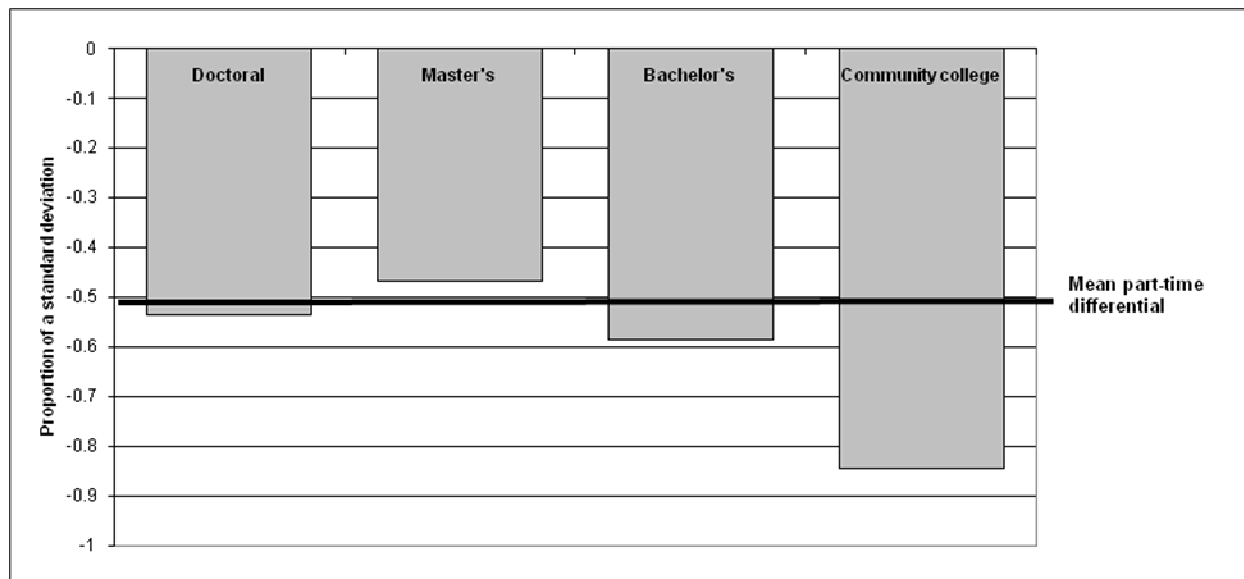
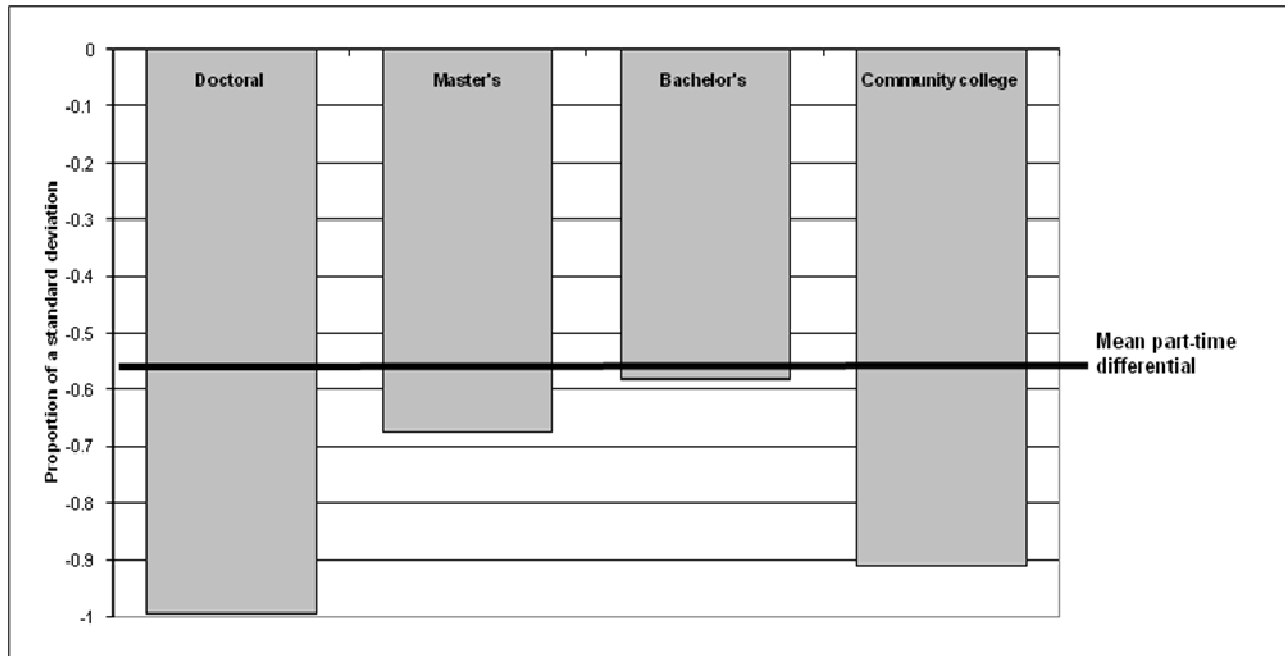


Figure 4. The effect of institutional type on the time part-time faculty spend advising.



Appendix A

Description of variables included in models

Variable	Mean	SD	Min.	Max.	Description
<i>Dependent measures</i>					
Active learning	-0.01	1.00	-1.98	3.62	This nine-item construct measures the frequency that faculty engage students in active learning. The items include the frequency that faculty have students participate in: Class discussions, cooperative learning, experiential learning, recitals/demonstra
Diversity	0.00	1.00	-0.79	2.37	This two-item construct measures the extent to which faculty members emphasize diversity in their instruction. The items include the frequency of readings on racial/ethnic issues and women's studies. Alpha=0.92.
Preparing citizens	-0.01	1.00	-2.41	2.41	This nine-item construct measures the emphasis faculty place on educating a well-rounded student. The items include the level of importance faculty place on: Helping develop personal values, instilling a commitment to community service, providing for emot
Time preparing for class	0.00	1.00	-1.87	3.00	Hours per week preparing for teaching
Time advising	0.00	1.00	-1.54	7.56	Hours per week advising or counseling students
Teaching workshop	0.50	0.50	0.00	1.00	Ever attended a teaching workshop (1=yes, 0=no)
<i>Institutional Characteristics</i>					
Proportion part time	0.00	1.00	-1.57	2.31	Proportion of faculty holding part-time appointments (Source: 01 IPEDS Fall staffing data)
Doctoral	0.30	0.46	0.00	1.00	Carnegie classification: 1=Doctoral Research-Extensive/Intensive, 0=all other
Master's	0.30	0.46	0.00	1.00	Carnegie classification: 1=Master's I and II, 0=all other
Bachelor's	0.27	0.45	0.00	1.00	Carnegie classification: 1=Baccalaureate-Liberal Arts/General=1, 0=all other
Community college	0.10	0.30	0.00	1.00	Carnegie classification: 1=Community college=1, all other=1
Other institution type	0.02	0.14	0.00	1.00	Carnegie classification: 1=Other, 0=all other
Private	0.58	0.50	0.00	1.00	Sector: 1=private, 0=public
Urban	0.50	0.50	0.00	1.00	Urbanicity: 1=urban, 0=all other
Suburban	0.22	0.42	0.00	1.00	Urbanicity: 1=urban fringe, 0=all other
Rural	0.28	0.45	0.00	1.00	Urbanicity: 1=rural, 0=all other
Minority serving institution	0.07	0.26	0.00	1.00	Hispanic-serving institution or Historically black institution=1, all other=0
Size	0.00	1.00	-0.70	5.19	Student headcount (Source: 01 IPEDS Enrollment data)
<i>Individual Characteristics</i>					
Part-time	0.15	0.35	0.00	1.00	1=part-time status, 0=all other
Asian Pacific American	0.03	0.18	0.00	1.00	1=Asian Pacific American, 0=all other
African American	0.02	0.14	0.00	1.00	1=African American, 0=all other
Latino/a	0.02	0.14	0.00	1.00	1=Latino/a, 0=all other
Other race	0.04	0.20	0.00	1.00	1=Other race/ethnicity, 0=all other
Highest degree: Ph.D./Ed.D.	0.69	0.46	0.00	1.00	1=Ph.D./Ed.D, 0=all other
Highest degree: 1st professional	0.02	0.15	0.00	1.00	1=Professional degree (e.g., MD, JD, DVM)
Highest degree: Master's	0.21	0.41	0.00	1.00	1=Master's degree, 0=all other
Highest degree: Bachelor's	0.02	0.15	0.00	1.00	1=Bachelor's degree, 0= all other
Highest degree: Other	0.05	0.22	0.00	1.00	1=Other highest degree type, 0=all other
Female	0.40	0.49	0.00	1.00	1=female, 0=male
Years since highest degree	0.00	1.00	-1.58	4.80	Years since highest degree
Age	0.00	1.00	-2.70	4.25	Age in years
Age ²	1.00	1.26	0.00	18.08	Age in years squared
Salary	0.00	1.00	-2.05	5.22	Number of courses taught in academic year
Number of courses taught	0.00	1.00	-2.39	7.79	Base salary converted to 12 month salary
Discipline: Hard-pure	0.23	0.42	0.00	1.00	Discipline of appointment (Biglan): 1=hard pure, 0=all other
Discipline: Hard-applied	0.07	0.26	0.00	1.00	Discipline of appointment (Biglan): 1=hard applied, 0=all other
Discipline: Soft-pure	0.43	0.49	0.00	1.00	Discipline of appointment (Biglan): 1=soft pure, 0=all other
Discipline: Soft-applied	0.16	0.37	0.00	1.00	Discipline of appointment (Biglan): 1=soft applied, 0=all other
Discipline: Other	0.11	0.31	0.00	1.00	Discipline of appointment (Biglan): 1=other disciplines, 0=all other