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Teaching Improvement: Disciplinary Differences in Faculty Opinions

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Improving teaching and learning at universities where faculty are rewarded primarily for research and scholarly activity is difficult. Faculty opinions about participating in teaching improvement activities at a research university were surveyed. This article presents survey results by college. Faculty opinions about incentives for participating in teaching improvement activities, promotion and tenure criteria, faculty development interests and outcomes for participating are included. Implications for faculty development are discussed.

It is difficult to improve teaching and learning, especially at research universities, when faculty rewards are for research and scholarly activity (Aitken & Sorcinelli, 1994; Diamond & Adam, 1993). Nevertheless, faculty development practices are becoming commonplace and refined at many institutions (Wright & O'Neil, 1994). Refinement of faculty development practices and targeting these practices to audiences who are most receptive may improve teaching and learning.

When discussing theories of faculty development, McKeachie (1991) expressed hope that, in the 1990's, more attention would be given to discipline-specific theories on teaching and learning. Likewise, Angelo (1989) suggested that recognizing faculty as teaching and learning experts in their disciplines and grouping faculty together

who share similar views may be an efficient way to promote improved teaching and learning.

Additionally, based on recent research findings, Armour, Fuhrmann, and Wergin (1990) created a profile of faculty by discipline to assist faculty developers. In the present study, an in-depth survey was conducted at the University of Arkansas to ascertain faculty opinions about the following aspects of instructional improvement: (1) the relative importance of promotion and tenure criteria, (2) outcomes of participating in instructional improvement activities, (3) incentives that would encourage them to participate, and (4) interests in faculty development practices. The purpose of this article is to examine disciplinary differences among faculty by college and distinguish those responses from the majority of the faculty.

Methodology

Data were collected using a 90-item questionnaire sent to a 50% random sample of faculty at the University of Arkansas, Fayetteville. Faculty members were selected using stratified random sampling by college and rank to provide subgroup representation. After two follow-up mailings, usable questionnaires were returned by 281 (70%) of the faculty. Because the rate of return was not 100%, the profiles of the questionnaire respondents and faculty as a whole by college and rank were examined.

As shown in Table 1, respondents were representative of the faculty as a whole by college and rank. Two-thirds (65.7%) of the respondents were tenured and 33.4% were nontenured. The age distribution of the questionnaire respondents was: 25-29 years (2.2%), 30-39 years (26.2%), 40-49 years (30.5%), 50-59 years (23.3%), and 60 and older (17.9%).

The survey instrument was based on the expectancy theory of motivation. Since 1964, this motivation theory and its revised versions have been used to explain employee motivation (Koontz, O'Donnell, & Weihrich, 1984; Pinder, 1984; Porter & Lawler, 1968; Vroom, 1964). In short, expectancy theory proposes that employees will be motivated by their expectancy that their actions will result in desired

Table 1
Respondents' Profile and University
Faculty Profile by Percent

Group	Questionnaire Respondents (<i>N</i> = 281)	University Faculty (<i>N</i> = 795)
Discipline/College		
Agriculture	18.5	16.0
Arts & Sciences	34.9	40.0
Education	18.2	14.3
Engineering	12.1	11.2
Professions	16.4	18.6
	100%	100%
Rank		
Professor	43.9	41.5
Associate Professor	23.8	25.7
Assistant Professor	18.9	20.4
Instructor	13.5	12.6
	100%	100%
Note. Professions includes Architecture, Business Administration, and Law. Total of 100% may include rounding.		

outcomes (Koontz et al.). This survey included major factors thought to influence faculty motivation to participate in instructional improvement activities. Those factors included the relative importance of promotion and tenure criteria, outcomes of participating in instructional improvement activities, incentives that would encourage them to participate, and their interests in faculty development practices. The questionnaire was developed from the literature and from a revision process using feedback from content experts. Content experts were faculty from the colleges and faculty development experts. The questionnaire was pilot tested prior to final revision.

Findings

The results from the faculty as a whole using the expectancy theory of motivation as a frame of reference were reported previously (Emery & Hammons, 1991). Reported here are the disciplinary differences by college which were explored using the chi square test of association with the .05 level designated as the reference for significant difference. These disciplinary differences are reported and contrasted with majority faculty opinions.

Promotion and Tenure Criteria

Table 2 contains a rank ordered list of the criteria by perceived importance in promotion and tenure decisions. Fifty percent or more of the faculty indicated that 8 of 16 criteria (from the Faculty Handbook) would be quite or extremely important for promotion and tenure. As expected, these criteria overwhelmingly pertained to research and scholarly activity. There were significant disciplinary differences in the top-ranked 4 of 8 of these criteria.

Evidence of research, either funded or unfunded, was ranked important by 96% of the agriculture faculty. In contrast, 78% of the education faculty perceived this as important. Likewise, agriculture faculty rated publication of articles and books (92%) and awards, including funding of research (84%), highest. Education faculty rated the importance of these criteria at 73% and 63%, respectively.

Evidence of performances, concerts, and other creative activities in the fine and performing arts was important to the 56% of the faculty who rated the item. It should be noted that differences by college were not examined because the item more directly related to arts and sciences and 64% (179) faculty marked the item "not applicable".

The eight criteria that were not considered important by a majority of the faculty pertained to teaching, service, and self-improvement. Faculty opinion was uniform except for disciplinary differences on one criterion. Evidence of service to the public through consulting or other activities in the area of academic or professional competence by the faculty member was important to 35% of the faculty. This criterion was more important to education (47%) faculty and less important to the professions (32%) faculty.

Table 2
Percent of Respondents Listing Promotion and Tenure
Criteria as Important

Criterion	All Faculty	Discipline/College					χ^2
		Agri	A&S	Educ	Engr	Prof	
Research, either funded or unfunded	86	96	86	78	79	91	26.41*
Publication of articles, books, other	82	92	82	73	79	88	26.82*
Awards, including funding of research	74	84	79	63	77	65	26.34*
Professional recognition, outside groups	74	64	81	78	62	75	24.32*
Papers at professional meetings	65	-	-	-	-	-	9.86
Performances, concerts	56	-	-	-	-	-	N/A
Directing student research projects	56	-	-	-	-	-	18.60
Technical reports on research projects	50	-	-	-	-	-	15.74
Innovation in teaching	44	-	-	-	-	-	13.37
Professional self-improvement	44	-	-	-	-	-	4.99
Teaching materials, course outlines, exams	43	-	-	-	-	-	13.59
Work in professional societies	41	-	-	-	-	-	13.12
Service to the public, consulting	35	37	29	47	35	32	21.71*
Service; public understanding of university	27	-	-	-	-	-	16.10
Participate in written or oral exams for honors or graduate students	25	-	-	-	-	-	12.93
Committee activities at the university	23	-	-	-	-	-	20.30

Note. Percents include extremely or quite important. Percents may include rounding.

Dashes indicate that data were not reported when no significant differences were detected.

$p = .05$; $N = 281$

Outcomes of Participation

A majority of faculty perceived that 3 of 8 outcomes would occur to some or a great extent if they participated in instructional improvement activities (see Table 3). Overall, faculty perceived that they would become more effective (71%), efficient (68%), and satisfied (63%) teachers. However, only a small percentage of faculty believed that their chances for extrinsic rewards like promotion (15%) and salary increase (14%) would improve. Additionally, 46% of the fac-

ulty indicated that participation in instructional improvement would cause them to sacrifice their scholarly activity.

TABLE 3
Percent of Respondents' Perceived Outcomes of
Participation in Instructional Improvement

Outcome	All Faculty	Discipline/College					X ²
		Agri	A&S	Educ	Engr	Prof	
Become a more effective teacher.	71	85	62	82	77	67	26.15*
Become a more efficient teacher.	68	-	-	-	-	-	16.08
Become more satisfied with teaching.	63	-	-	-	-	-	19.84
Sacrifice my scholarly activity.	46	44	46	28	62	59	25.02*
Chair would encourage participation.	37	-	-	-	-	-	12.73
Chances for promotion might improve.	15	-	-	-	-	-	8.97
Chances for salary increase might improve.	14	-	-	-	-	-	13.37
Colleagues might criticize participation.	13	-	-	-	-	-	7.53

Note. Percents include outcomes that would occur to some or a great extent. Percents include rounding.
 Dashes indicate that data were not reported when no significant differences were detected.
 p = .05; N = 281.

Significant disciplinary differences were found in two of these items. Agriculture (85%) and education (82%) faculty perceived more strongly that participation in instructional improvement might make them more effective teachers whereas arts and sciences (62%) faculty did not perceive this as strongly. Faculty also differed in their opinion on whether participation in instructional improvement would cause them to sacrifice their scholarly activity. Engineering (62%) faculty believed this outcome would occur more strongly than education (28%) faculty.

Incentives for Participation

As shown in Table 4, a majority of faculty indicated that 13 of 17 incentives would encourage their participation in instructional improvement activities to some or a great extent. Predictably, salary increment (88%), promotion (76%), and tenure (72%) were valued incentives. Additionally, incentives related to instruction and instructional improvement were highly rated. For example, recognition for outstanding teaching (79%), paid released time for faculty development (77%), and a summer grant to improve a course (73%) were valued incentives.

Faculty opinions differed among disciplines in 6 of 13 of these incentives. Paid released time for faculty development ranged as a valuable incentive from 90% of the education faculty and to 67% of the agriculture faculty. Travel funds to attend conferences were valuable to 68% of the faculty overall. Education (86%) and arts and sciences (76%) attached more value to this incentive and engineering (50%) the least value.

One course load reduction was valued by 62% of the faculty overall with significant differences noted. Education (75%) and arts and sciences (67%) indicated most strongly that this incentive would encourage their participation. Agriculture (46%) attached less value to this incentive.

Four incentives were not viewed as valuable by a majority of the faculty. However, significant differences suggested that three of these incentives might be useful with specific groups. Faculty who attached more value to these incentives were: funds to obtain media and secretarial help (education 65%, arts and sciences 51%), return to industry or industry-education exchange (engineering 62%, education 49%), and opportunity to work with persons skilled in media use (agriculture 48%, education 35%).

Faculty Development Interests

Table 5 shows the percentage of faculty who indicated moderate or a great deal of interest in each instructional improvement area if time and resources were available. Although there was variation in faculty responses, over 50% of the faculty expressed interest in nine

topics. At least one-fourth of the faculty expressed interest in 35 of 38 topics.

Table 4
Percent of Respondents Supporting Incentives for Participation in Instructional Improvement

Incentive	All Faculty	Discipline/College					χ^2
		Agri	A&S	Educ	Engr	Prof	
Salary increment	88	-	-	-	-	-	15.75
Recognition for outstanding teaching	79	-	-	-	-	-	13.31
Paid released time: faculty development	77	67	79	90	71	77	22.52*
Promotion in rank	76	-	-	-	-	-	12.08
Summer grant to improve a course	73	-	-	-	-	-	16.48
Tenure	72	-	-	-	-	-	15.39
Travel funds to attend conferences	68	60	76	86	50	58	25.36*
Funds to improve a course	66	-	-	-	-	-	11.16
Support & encouragement from the Chair	62	-	-	-	-	-	12.15
One course load reduction	62	46	67	75	59	62	24.20*
Support & encouragement from the Dean	58	-	-	-	-	-	10.08
Graduate assistant	56	-	-	-	-	-	16.35
Student assistant for 15 hours per week	55	-	-	-	-	-	12.18
Funds for media and secretarial help	47	46	51	65	35	32	27.74*
Faculty exchange with other universities	46	-	-	-	-	-	15.65
Return to industry/exchange program	35	29	23	49	62	42	34.58*
Work with person skilled in media use	35	48	31	35	35	29	21.57*

Note. Percents include incentives that would encourage participation to some or a great extent.

Dashes indicate that data were not reported when no significant differences were detected.
 $p = .05$; $N = 281$.

Significant disciplinary differences by college were found in 12 of 38 instructional improvement areas. Two of these topics, strategies for student problem-solving (62%) and selection of effective instructional media (52%), also received majority faculty support. Interestingly, there was no other overlap. Ten faculty development practices did not receive majority faculty support; however, disciplinary differ-

ences suggested that these topics might be useful to specific groups. Examples of these instructional improvement interests were: using a personal computer for wordprocessing (education 63%, arts and sciences 59%), grading student performance (agriculture 52%), professional and personal development plan or growth contract (education 58%), group teaching strategies for seminars, labs (education 51%, agriculture 50%), writing test items (engineering 50%), constructing examinations (professions 48%), using a personal computer for student evaluation (education 55%), using telecommunication media (education 43%), teaching strategies for adult learners (education 37%), and teaching strategies for nontraditional students (education 47%).

Discussion and Implications

Research is more important than teaching vis-a-vis the reward structure of the university (Fairweather, 1994; Wright & O'Neil, 1994). The findings in this study also support the primacy of research in the university reward structure. For a number of faculty to engage in teaching improvement activities, incentives must be provided. If time and resources are available, faculty would participate in a variety of instructional improvement activities. Moreover, nearly three-fourths of the faculty speculate that their performance as a teacher would improve if they participated.

Recent efforts to create profiles of faculty by discipline (Armour, Fuhrmann, & Wergin, 1990) and examine disciplinary journals on pedagogy (Weimer, 1993) suggest that disciplines or colleges may be useful avenues to support faculty. The results here suggest that opinions about faculty development differ somewhat by discipline or college and merit this attention as well. Besides the nature of the disciplines making up each college, there may be other factors which contribute to the differences among colleges. These factors include different interpretations of promotion and tenure criteria by colleges, different current funding levels by colleges for incentives for participation in instructional development activities, and different existing skills by college faculty in areas in which faculty desire assistance or instruction.

Table 5
Percent of Respondents Interested in Instructional Improvement Areas

Instructional Improvement Area	All Faculty	Discipline/College						X2
		Agri	A&S	Educ	Engr	Prof	X2	
Strategies for student motivation	72	-	-	-	-	-	16.71*	
Valid, useful, timely student rating system	69	-	-	-	-	-	17.90	
Strategies for student creativity	64	-	-	-	-	-	19.22	
Strategies for student problem-solving	62	69	51	76	64	64	22.04*	
Lecture delivery techniques	57	-	-	-	-	-	17.09	
Strategies for student confidence	57	-	-	-	-	-	14.83	
Use of transparencies, slides, videotapes	55	-	-	-	-	-	19.92	
Expert classroom visitation and diagnosis	54	-	-	-	-	-	9.20	
Selection of effective instructional media	52	67	54	61	35	34	25.94*	
Group discussion techniques	48	-	-	-	-	-	18.46	
Personal computer use for wordprocessing	48	33	59	63	32	39	28.11*	
Planning course content	47	-	-	-	-	-	11.97	
Faculty consult on course improvement	45	-	-	-	-	-	8.07	
Strategies for teaching large classes	44	-	-	-	-	-	18.77	
Strategies to promote value exploration	43	-	-	-	-	-	15.19	
Critique of student written work	41	-	-	-	-	-	18.16	
Grading student performance	40	52	30	37	47	46	23.37*	
Strategies to guide theses & dissertations	40	-	-	-	-	-	20.53	
Plan for professional and personal growth	37	33	36	58	35	27	24.43*	
Strategies for group seminars and labs	36	50	32	51	32	18	27.22*	
Videotaping and critique of teaching	36	-	-	-	-	-	14.12	

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Writing test items	36	42	28	25	50	48	29.48
Writing a course syllabus	35	-	-	-	-	-	10.99
Constructing examinations	35	44	28	28	41	48	23.51*
Strategies to guide independent study	34	-	-	-	-	-	18.95
Interdisciplinary teaching	34	-	-	-	-	-	16.50
Personal computer for student evaluation	33	15	34	55	29	30	30.75*
Use of telecommunication media	33	33	34	43	30	23	22.08*
Student advising and counseling	30	-	-	-	-	-	3.46
Preparing your own transparencies	30	-	-	-	-	-	8.95
Use of handouts, flipcharts	29	-	-	-	-	-	10.47
Select and write instructional objectives	29	-	-	-	-	-	18.13
Writing across the curriculum	28	-	-	-	-	-	17.78
Strategies for teaching adult learners	27	33	29	37	18	14	29.72*
Strategies for nontraditional students	26	25	28	47	12	14	27.52*
Team teaching	20	-	-	-	-	-	13.85
Using audiorecordings	17	-	-	-	-	-	17.58
Programmed instruction	16	-	-	-	-	-	10.37
<p>Note. Percent indicating moderate or a great deal of interest. Percents include rounding. Dashes indicate that data were not reported when no significant differences were detected.</p> <p>$p = .05$; $N = 281$.</p>							

Examination of faculty opinions by colleges may assist faculty developers to target resources and understand perspectives of these groups. Agriculture faculty express more strongly than others that evidence of research, publication of books and articles, and awards, including research proposals, are important in promotion and tenure decisions. Interestingly, they also indicate most strongly that they might become more effective teachers if they participate in instructional improvement activities. Selecting instructional media and grading student performance are of particular interest to agriculture faculty.

Arts and sciences faculty express more strongly than other groups that evidence of performances, concerts, and other creative activities and professional recognition by outside agencies, groups, or other individuals in the discipline are important in promotion and tenure decisions. They are second only to agriculture in describing the importance of research and awards like research proposal funding. A majority of arts and sciences faculty value supportive incentives like paid released time for professional development, travel funds to attend conferences, one course load reduction, and funds to obtain media and secretarial help. The usefulness of these incentives to encourage their participation in instructional improvement is second only to education.

Predictably, education faculty present the strongest interest in faculty development practices that were not of interest to a majority of the faculty. These include use of a personal computer for wordprocessing and student evaluation, teaching strategies for nontraditional students, group teaching strategies for seminars, use of telecommunication media, and a personal development plan. Education faculty express interest in paid released time for professional development, travel funds to attend conferences, one course load reduction, and funds to obtain media and secretarial help.

Engineering faculty indicate that return to industry or industry-education exchange is a useful incentive to encourage their participation in instructional improvement. They express particular interest in writing test items and grading student performance.

Faculty in professions which include architecture, business administration, and law strongly indicate that evidence of publication of books and articles is very important in promotion and tenure decisions. They are second only to agriculture in citing its importance. Faculty in professions report interest in writing test items, constructing examinations, and grading student performance.

Although these profiles of faculty are specific to one institution, there are implications for faculty developers at other institutions. The survey process can be used to study faculty attitudes toward instructional improvement on any campus where faculty are expected to teach and engage in scholarly activity. This may provide an indication of incentives to encourage participation in instructional improvement and identify areas of interest.

Examining faculty opinions as a whole and then by discipline or college is recommended. Specific incentives may be meaningful to faculty in one college even though they are not desirable to the faculty as a whole. Likewise, interest in instructional improvement areas may differ among colleges. This information may help faculty developers target their efforts and resources toward receptive faculty.

Further research is needed to determine if faculty opinions are similar on other campuses. This may contribute to creating profiles by disciplines or colleges to identify instructional improvement barriers, incentives, and interests of faculty.

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