

The Relationship Between Experience and Self-Perceptions of Knowledge and Relevance of Teaching Competencies of Faculty in a College of Agricultural and Life Sciences

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There has been a call for faculty at academic institutions to improve the quality of their educational programs. Previous research findings have found that the size and focus of the institution impacts the quality and resources given to instructional activities. However, it has been noted that traditionally research-focused institutions now are beginning to appreciate the role and importance of their academic programs. Researchers designed this study to describe the differences existing among faculty's self-perceived knowledge and relevance of teaching competencies to deliver academic programs. A web-based questionnaire designed with three distinct set of questions regarding instructional and teaching needs was administered to a convenience sample of College of Agricultural and Life Sciences faculty at the University of Florida. Faculty reported low self-perceptions in the area of distance delivery. Characteristics such as faculty appointment and rank were found to impact perceptions toward teaching as well. Recommendations for further research and programmatic development were provided.

Keywords: higher education, faculty perceptions, faculty knowledge, faculty preparation, teaching competencies

Introduction

Faculty at institutions of higher education are being challenged to improve academic quality (Dill, 1998, 2003; Eaton, 2006; Education Commission of the States, 1995). According to Dill (2003), academic quality is “equivalent to academic standards, that is the level of academic achievement attained by higher education graduates” (p. 1). A study conducted by Kuh (1999) articulated some of the reasons why academic quality has become a concern. Kuh found despite spending less time on learning activities, students in the 1990s were earning higher grades than their 1960s counterparts. Significantly less growth was

reported for the later students in five areas of student learning outcomes, including personal development and an understanding of science and experimentation. Kuh argued faculty were partially to blame for the decline, stating:

The faculty side is not requiring too much from students in terms of reading and written work in exchange for a decent grade—at least a B—provided that students don't make a fuss about the class or ask for too many meetings outside of class or too many comments from faculty on students' written work or exams (1999, p. 114).

A historically pro-research culture may be partly to blame for a lack of emphasis on teaching and its relationship to academic quality. Both Boyer (1990) and the Boyer Commission Report (1998) noted it has been common practice for faculty to be judged for promotion and tenure on their research productivity rather than their teaching abilities.

Faculty are typically well prepared to perform the research aspects of their positions, but have little formal preparation for their teaching responsibilities (Roberts & Simpson, 2008; 2009). Recognizing the current situation, the Association of Public and Land-Grant Universities (APLU) recently called for the implementation of “faculty development, informed by research, on cognition in the teaching/learning process” (APLU, 2009, p. 8). The study reported in this article begins answering the APLU’s charge by examining how the experience of faculty influences their knowledge of teaching.

This topic is of particular relevance to university faculty in agricultural education, as these faculty are often charged with providing professional development for their peers in other agricultural and life sciences disciplines. This is evidenced by the *National Research Agenda: Agricultural Education and Communication* (Osborne, 2007), which designated enhancing the effectiveness of agricultural and life sciences faculty as a priority area for research. The results of this research will help agricultural education faculty provide relevant professional development, thus meeting the APLU’s (2009) call for action.

Theoretical Framework

The fundamental theory guiding this study is experiential learning, which asserts that learning is a result of reflecting on experience (Dewey, 1938). More specifically, this study was framed by how experience influences knowledge and perceptions of teaching. Bransford, Brown, and Cocking (2000) proposed that teaching is learned through (a) personal experiences, (b) interactions with peers, and (c) formal teacher preparation programs. This study examined how various indicators of personal experience relate to faculty knowledge of teaching competencies. Understanding this phenomenon can allow for better targeted professional development

activities within colleges of agricultural and life sciences, thus improving the quality of instruction and ultimately increasing student learning.

Dewey (1938) presented a concept called the continuity of experience to explain how personal experience influences learning. According to Dewey, each current experience is influenced by previous experiences. Thus previous experience, and the related cognitive schema (Bransford et al., 2000), serve as the foundation for current knowledge and action. Accordingly, current experiences will serve as the foundation for future experiences.

The most influential personal experience providing the foundation for teaching is the years a faculty member spent as a *student*. Darling-Hammond and Bransford (2005) cautioned that the first-hand experiences of novice teachers acquired through their years as students provide many misconceptions about effective teaching. Darling-Hammond and Bransford’s position supports the notion that people tend to teach the way they were taught. This phenomenon has been called an apprentice of observation (Lortie, 1975). Darling-Hammond and Bransford asserted that observations alone may not capture the complex nature of effective teaching. In other words, students may not recognize all the factors that went into planning and delivering an effective teaching session. Further, basing the way one teaches off one’s own experiences becomes even less relevant as the difference in age between the teacher and students increases. Fayne and Ortquist-Ahrens (2006) discovered that newly hired faculty found their own experiences as students to be very different than the experiences of the students they taught.

In contrast, personal experiences as a *teacher* can be very valuable. Teaching experience can come in formal settings, like college or K-12 classrooms, as well as informal settings like athletic coaching or other community activities. The teaching experiences of college faculty vary greatly (Roberts & Simpson, 2008; 2009). Several indicators provide some basis of determining teaching experience of college faculty. These include the number of years of college teaching, having “other” teaching experience, faculty rank, and percentage of formal academic appointment focused on teaching.

Another source of personal experience is that of independent reading and research. Faculty are typically well-prepared as researchers and it seems that they apply this skill set to learn more about teaching. Roberts and Simpson (2008; 2009) found that newly hired faculty frequently engage in independent research and reading. Although faculty may not follow all the way through to dissemination, it would appear that Boyer's (1990) notion of the Scholarship of Teaching is being embraced by faculty.

Another source of personal experience related to teaching is attending professional development activities. When examining the effects of these activities, Whittington (1998) discovered that faculty development can make a difference in the teaching practices. Over a nine month period, selected faculty participated in a series of workshops that taught them to teach at higher levels of cognition. After completing this series of workshops, faculty actually elevated the cognitive levels of their teaching, which indicates that faculty can gain valuable experience through professional development.

Current Teaching Knowledge and Experiences

In addition to studying the personal experiences of faculty, researchers have examined the teaching knowledge of college of agriculture faculty. Wardlow and Johnson (1999) found faculty in the College of Agriculture, Food and Life Sciences at the University of Arkansas perceived their level of competence to be "good to excellent" for such traditional teaching activities as "lecture, demonstration, preparing teaching materials, and motivating students" (p. 53). Lower teaching competency scores were associated with activities such as "alternative teaching activities, using cooperative learning and case studies, and faculty peer observation" (Wardlow & Johnson, 1999, p. 53). Wardlow and Johnson concluded there is a need for in-service training focused on felt needs, as well as educational technologies.

Wingenbach and Ladner (2002) examined faculty from the College of Agriculture and Life Sciences and the College of Education at Mississippi State University. They found that faculty from both colleges had greater self-perceived competence in traditional teaching methods than in emerging methods and technologies. Their study also revealed that

faculty who had formal pedagogical preparation had a greater desire to learn about emerging educational technologies. Faculty were most interested in learning about encouraging critical thinking; motivating students; using hands-on and problem-solving activities; and learning about alternative teaching methods. They were least interested in learning about preparing a course syllabus; developing a teaching portfolio; revising a course; and preparing effective lesson plans.

One of the more systematic examinations of current teaching knowledge and experiences of faculty in agricultural and life science classrooms has been led by Whittington (Ewing & Whittington, 2007; Lopez & Whittington, 2001; Whittington, 1998; Whittington, Stup, Bish, & Allen, 1997). Whittington's work has focused on the cognitive level at which faculty teach. This body of work generally shows that faculty ascribe to teach at higher levels of cognition, but generally teach at lower levels of cognition.

Previous research gives us a partial picture of previous personal experiences, current teaching knowledge, and experiences of college of agricultural and life science faculty. The current study seeks to add to this body of knowledge by examining the relationships between previous personal experiences and current knowledge and experiences. This knowledge may lead to tailored professional development activities for faculty with varying amounts of teaching experience. Ultimately, as portrayed in Figure 1, this could lead to increased student learning.

Purpose and Objectives

The purpose of this study was to describe the differences existing among faculty's self-perceived knowledge and relevance of teaching competencies. The objectives guiding the study were to describe:

1. Faculty self-perceived knowledge and relevance of teaching competencies,
2. Differences which exist among faculty self-perceived knowledge and relevance of teaching competencies as analyzed by demographic variables, and
3. Relationships which exist between faculty self-perceived knowledge and relevance by

formal appointments in teaching, research and extension.

Methods

This quantitative study was descriptive in nature with the intent of providing a detailed analysis of the factors impacting faculty's perceived knowledge and perceived relevance of teaching and instructional strategies in higher education. This study was a component of a larger study examining faculty's perceptions of teaching and instructional strategies. The researchers used a convenience sample of College of Agricultural and Life Sciences faculty at the University of Florida with 17 academic departments represented by 522 faculty with a formal teaching appointment. Departments included both social science and bench science disciplines.

A web-based questionnaire was administered using SurveyMonkey. Specific data was collected using three distinct set of questions regarding instructional and teaching needs: (a) teaching competencies, (b) preferences toward professional development in the area of teaching, and (c) demographic information. To meet the objectives of this study, data collected in question set (a) and (c) were used in the analysis.

There were 23 Likert-type questions included in the teaching competencies portion (section a) of the questionnaire. Questions were developed from compilation of assessments previously administered through the college's teaching resource center at the University of Florida. Using the constant-comparative method (Glaser & Strauss, 1967) researchers systematically analyzed questions to determine those which would be most demonstrative of teaching competence. The five point Likert scale ranged from 1 = *Low Knowledge/Low Relevance* to 5 = *High Knowledge/High Relevance*. Faculty then self-reported their perceived knowledge of the 23 teaching competency statements, as well as the perceived relevance of those competencies to their position. The intent of this study was to establish the variance existing among the different faculty groups as the variance related to self-perceived knowledge and perceived relevance of teaching competencies.

Validity of the instrument was established through an expert panel review of educators who were not directly affiliated with the study. Recommendations indicated a revision and after modification both content and face validity were deemed appropriate for the intent of the study. Using a test-retest procedure, researchers were able to document a reliability coefficient of .84.

Demographic data collected categorized faculty respondents by official institutional reported rank (Lecturer, Senior Lecturer, Assistant Professor, Associate Professor, or Professor), years of college teaching experience at current institution or other college/university, and other teaching experience (Yes/No).

Using the Tailored Design Method (Dillman, Smyth, and Christian, 2009), researchers notified participants by email in January 2009 of the study. Two days later an email notice was sent with the link to the SurveyMonkey questionnaire. Two notices were sent to non-respondents via email at one week intervals. Those with invalid emails ($n = 7$) and self-exclusion ($n = 26$) were removed from the study, resulting in a possible 489 participants. An additional 19 individuals opted out and the final response rate for the study was 46.8% ($n = 220$). Thirty-two responses were discarded due to incomplete information, reducing the total number of usable responses to 188. Researchers determined that the convenience sample of respondents would be appropriate for inferential statistics as required by the research objectives.

Researchers used methodology established by Miller and Smith (1983) to address concerns regarding non-response error. Using a Chi-square test, researchers identified a significant difference among faculty's "rank" ($\alpha = .05$, set a priori). Significantly fewer professors responded than would have been expected based on their proportion in the population. Based on this finding, the researchers guard against any generalizations beyond the respondents of the study.

There were three different statistical analyses conducted to report findings for each of the three research objectives. Objective one used descriptive statistics to report respondents' self-perceived knowledge and relevance of teaching competencies to their position. The researchers used a multivariate statistical analysis, including F -tests, significance (p at $\alpha = .05$, *a priori*), and partial eta squared to show effect size for

objective two. Results were interpreted by defining small, medium, and large effect sizes at the .10, .25, and .40 levels, respectively (Cohen, 1992). Lastly, Pearson product-moment correlation coefficients were used to report the direction and magnitude of relationships between self-perceived knowledge and relevance teaching competencies and formal percentages of teaching, research and extension appointments with significance reported by p ($\alpha = .05$, *a priori*). The magnitudes of Pearson product-moment correlation coefficients (r) were categorized by: $r = 1.0$ (perfect); $r = 0.99-0.70$ (very high); $r = 0.69-0.50$ (substantial); $r = 0.49-0.30$ (moderate); $r = 0.29-0.10$ (low); and $r = 0.09-0.01$ (negligible) (Miller, 1998).

Findings

Objective 1. Describe faculty self-perceived knowledge and relevance of teaching competencies.

The researchers used descriptive statistics to analyze faculty self-perceived knowledge and relevance of teaching competence. Self-perceived knowledge of effective lecturing ($M = 3.63$, $SD = .97$) was the highest rated competency. Faculty also tended to rate themselves knowledgeable about clarity in teaching ($M = 3.54$, $SD = 1.04$) and graduate advising ($M = 3.51$, $SD = 1.31$). They were least likely to perceive themselves as knowledgeable about distance education basics ($M = 2.30$, $SD = 1.29$).

Faculty reported effective lecturing ($M = 4.17$, $SD = 1.36$) as the most relevant competency. Faculty also tended to highly rate the relevance of teaching critical thinking ($M = 4.05$, $SD = 1.22$), clarity in teaching ($M = 4.02$, $SD = 1.24$), and graduate advising ($M = 4.02$, $SD = 1.23$). The competencies perceived to be the least relevant were teaching large classes ($M = 2.55$, $SD = 1.58$), undergraduate advising ($M = 2.58$, $SD = 1.61$), teaching in lab settings ($M = 2.75$, $SD = 1.67$), distance education basics ($M = 2.78$, $SD = 1.63$), and teaching multicultural classrooms ($M = 2.99$, $SD = 1.45$).

Objective 2. Describe differences which exist among faculty self-perceived knowledge and relevance of teaching competencies as analyzed by demographic variables.

Objective 2 findings are reported using a multivariate analysis where competencies were grouped by self-perceived knowledge or relevance and then analyzed by demographic variable. The researchers arranged these groups in recognition that teaching knowledge in one area may impact teaching knowledge in another (effective lecturing/effective teaching fundamentals) and likewise with reported relevance.

Rank

Mean scores for each of the rank categories were reported for both perceived knowledge and relevance. High and low scores are reported for each rank category. For the construct of self-perceived knowledge, respondents in rank 1 (lecturer, $n = 5$) scored teaching in lab settings lowest ($M = 1.80$, $SD = .83$) and clarity in teaching highest ($M = 4.20$, $SD = .48$). Senior lecturers (rank 2, $n = 2$) scored distance education basics ($M = 1.00$, $SD = .00$) lowest, as did all other rank categories: assistant professors (rank 3, $n = 55$) ($M = 2.27$, $SD = 1.30$), associate professors (rank 4, $n = 44$) ($M = 2.59$, $SD = 1.35$), and professors (rank 5, $n = 55$) ($M = 2.29$, $SD = 1.24$). High scoring teaching competencies for senior lecturers included clarity in teaching ($M = 4.00$, $SD = .00$), cooperative learning ($M = 4.00$, $SD = .00$), using experiential learning ($M = 4.00$, $SD = .00$), and using web-based technologies ($M = 4.00$, $SD = .00$). The high score reported by assistant professors was effective lecturing ($M = 3.36$, $SD = 1.01$) and was also the high score for associate professors ($M = 3.82$, $SD = .79$). Professors scored knowledge highest in graduate advising ($M = 3.89$, $SD = .98$).

Relevance of teaching competencies for lecturers ranged from low for graduate advising ($M = 2.60$, $SD = 2.19$) to high for two different competencies: clarity in teaching ($M = 4.80$, $SD = .45$) and effective lecturing ($M = 4.80$, $SD = .45$). Senior lecturers ($n = 2$) scores ranged from low for distance education basics ($M = 1.50$, $SD = .71$) and graduate advising ($M = 1.50$, $SD = .71$) to high for effective teaching fundamentals, clarity in teaching, effective lecturing, learning styles of students, questioning techniques, cooperative learning, active learning strategies, getting students engaged in learning, using experiential learning, better teaching through better testing, creating the perfect course syllabus, and undergraduate advising. All scored

high ($M = 5.00$, $SD = .00$). For assistant professors, scores ranged from low for undergraduate advising ($M = 2.51$, $SD = 1.38$) to high for graduate advising ($M = 4.43$, $SD = .89$). Relevance of teaching large classes was scored low by associate professors ($M = 2.95$, $SD = 1.66$) and relevance of effective lecturing scored high ($M = 4.33$, $SD = .97$). Lastly, professors scored relevance of teaching large classes low ($M = 2.06$, $SD = 1.36$) and graduate advising high ($M = 4.06$, $SD = 1.86$).

The multivariate analysis for rank and self-perceived knowledge was significant ($F(4, 183) = 1.86$, $p < .05$). The partial Eta squared was .24, indicating a medium effect, showing that rank accounted for 2.4% of the variance in self-perceived knowledge. Analysis for rank and perceived relevance was significant ($F = 1.31(4, 177)$, $p < .05$). Partial Eta squared was .19, indicating a small effect, showing that rank accounted for 1.9% of the variance in relevance.

Years of College Teaching Experience

There were six distinct categories for years of college teaching experience. The first group (category 0) indicated respondents had less than one year of experience ($n = 10$). Self-perceived knowledge of teaching competence for this group ranged from low for using web-based technologies for managing courses ($M = 2.50$, $SD = 1.80$) to high for clarity in teaching ($M = 3.90$, $SD = .99$). The second group's (category 1) experience ranged from 1–3 years ($n = 28$). This group scored self-perceived knowledge of distance education basics low ($M = 2.39$, $SD = 1.27$) and effective lecturing high ($M = 3.79$, $SD = .63$). Four other groups also scored effective lecturing high: group 2 (4–6 years experience, $n = 15$, $M = 3.73$, $SD = .80$), group 3 (7–10 years experience, $n = 24$, $M = 3.67$, $SD = 1.27$), group 5 (16–20 years experience, $n = 12$, $M = 3.33$, $SD = 1.07$), and group 6 (over 20 years experience, $n = 25$, $M = 3.48$, $SD = 1.01$). Group 3 also scored graduate advising high ($M = 3.79$, $SD = 1.18$), as did group 5 ($M = 3.33$, $SD = 1.16$). Clarity in teaching scored high for group 4 (11–15 years, $M = 3.60$, $SD = 1.10$). Knowledge of distance education basics was the low score for groups 3 ($M = 2.17$, $SD = 1.34$), 4 ($M = 1.95$, $SD = 1.05$), 5 ($M = 2.17$, $SD = 1.34$), and 6 ($M = 2.32$, $SD = 1.32$).

Perception of relevance of teaching competencies for novice instructors (less than 1 year) ranged from low for teaching in lab

settings ($M = 2.27$, $SD = 1.56$) and undergraduate advising ($M = 2.27$, $SD = 1.56$) to high for effective teaching fundamentals ($M = 4.00$, $SD = 1.55$). Those with 1–3 years experience (group 1) scored relevance of teaching large classes low ($M = 2.22$, $SD = 1.45$). Other groups scoring undergraduate advising low were group 2 (4–6 years, $M = 2.86$, $SD = 1.79$), group 4 (11–15 years, $M = 2.39$, $SD = 1.29$), and group 5 (16–20 years, $M = 2.00$, $SD = 1.33$). Group 1 (1–3 years) scored graduate advising high ($M = 4.44$, $SD = .93$), as did group 6 (over 20 years, $M = 4.20$, $SD = 1.00$). Other high scores for relevance included clarity in teaching (group 2, 4–6 years, $M = 4.50$, $SD = .76$), effective lecturing (group 3, 7–10 years, $M = 4.42$, $SD = 1.02$ and group 5, 16–20 years, $M = 4.00$, $SD = 1.05$), teaching critical thinking (group 4, 11–15 years, $M = 4.22$, $SD = 1.00$) and active learning strategies (group 2, 4–6 years, $M = 4.50$, $SD = .65$).

Multivariate analysis showed there were no significant difference between years of teaching experience and self-perceived knowledge of teaching competencies ($F(6, 151) = .831$, $p > .05$). Analysis to determine significant differences across relevance scores by years of collegiate teaching experience showed no significant differences ($F(6, 150) = .875$, $p > .05$).

Other Teaching Experience

Other teaching experience was reported as a dichotomous variable, No (0, $n = 39$) or Yes (1, $n = 75$). Low scores of self-perceived knowledge for faculty with other teaching experience and those without were reported for distance education basics ($M = 2.15$, $SD = 1.29$ and $M = 2.27$, $SD = 1.27$, respectively). However, when looking at high scores for these groups, those with no other teaching experience scored self-perceived knowledge of graduate advising highest ($M = 3.69$, $SD = .97$), while those with other teaching experience scored effective lecturing highest ($M = 3.65$, $SD = .98$). For relevance of teaching competencies, faculty with no other teaching experience scored teaching large classes lowest ($M = 2.08$, $SD = 1.55$), while those with teaching experience scored distance education basics lowest ($M = 2.58$, $SD = 1.67$). Graduate advising was scored as most relevant for faculty with no other teaching experience ($M = 4.30$, $SD = .91$) and

with other teaching experience ($M = 4.19, SD = 1.12$).

Multivariate analysis showed no significant differences between these groups. Self-perceived knowledge by other teaching experience resulted in $F(1, 135) = 1.42, p > .05$. Relevance by other teaching experience resulted in $F(1, 134) = 1.27, p > .05$.

Objective 3. Identify relationships which exist between faculty self-perceived knowledge and relevance by formal appointments in teaching, research and extension.

There were a total of 45 individual statements that were significant with 23 statements related to self-perceived knowledge and 22 statements related to relevance. Pearson Product Moment correlation coefficients for self-perceived knowledge ranged from low ($r = 0.10-0.29$) to moderate ($r = 0.30-0.49$), while relevance coefficients ranged from low to substantial ($r = 0.50-0.69$). Because of the number of statements with significant differences, findings are presented in tabular format (see Table 1).

Table 1
Pearson Product Moment Correlation Coefficients for Self-Perceived Knowledge by Teaching, Research and Extension Appointment ($n = 185$)

Statement	Knowledge			Relevance		
	T	R	E	T	R	E
Effective teaching fundamentals	.36*	-.15*	-.17*	.54*	-.31*	-.23*
Teaching large classes	.39*	-.25*	.10	.42*	-.35*	-.05
Teaching in lab settings	.19*	.02	-.25*	.31*	-.09	-.24*
Teaching in multicultural classrooms	.37*	-.22*	-.16*	.46*	-.20*	-.26*
Clarity in teaching	.44*	-.24*	-.17*	.51*	-.18*	-.34*
Effective lecturing	.35*	-.20*	-.11	.47*	-.16*	-.29*
Learning styles of students and faculty	.37*	-.19*	-.16*	.51*	-.30*	-.20*
Questioning techniques	.38*	-.15*	-.20*	.51*	-.20*	-.31*
Teaching critical thinking	.30*	-.02	-.26*	.45*	-.10	-.38*
Cooperative learning	.37*	-.20*	-.15*	.48*	-.21*	-.25*
Peer evaluation	.37*	-.11	-.21*	.40*	-.21*	-.19*
Active learning strategies	.39*	-.17*	-.19*	.53*	-.25*	-.27*
Getting students engaged in learning	.35*	-.16*	-.18*	.49*	-.20*	-.33*
Using experiential learning	.35*	-.35*	.02	.48*	-.32*	-.14
Using technology in teaching	.24*	-.07	-.15*	.40*	-.13	-.30*
Using web-based technologies for managing courses	.34*	-.13	-.24*	.40*	-.19*	-.23*
Distance education basics	.24*	-.06	-.19*	.19*	-.13	-.04
Better teaching through better testing	.47*	-.16*	-.30*	.49*	-.16*	-.34*
Using student evaluations to improve teaching	.38*	-.08	-.28*	.50*	-.23*	-.29*
Creating the perfect course syllabus	.49*	-.19*	-.29*	.55*	-.25*	-.31*
Undergraduate advising	.49*	-.28*	-.20*	.60*	-.39*	-.22*
Graduate advising	.01	.22*	-.22*	-.02	.14	-.12
Academic Dishonesty	.21*	.01	-.22*	.33*	-.12	-.24*

Note. * $p < .05$.

Conclusions

Objective one provided findings as they relate to faculty’s self-perceived knowledge and relevance of teaching competencies. With that, low scores showed that faculty do not consider

themselves to be knowledgeable in the area of distance education basics. This may be problematic due to the increasing use of distance delivered courses at higher education institutions (Born & Miller, 1999). The relevance score for this concept was not scored high either,

indicating that faculty are not concerned about distance education basics. This may be a growing issue as requirements for course delivery grow and expand to be more far reaching, especially beyond the traditional classroom. Faculty's level of resistance to distance education has been a constant concern and this finding reiterates this idea (Murphrey & Dooley, 2000; Wingenbach & Ladner, 2002). Traditional teaching methods, like effective lecturing, are still considered important as it was scored high for self-perceived knowledge and relevance. Faculty in the study were more comfortable using traditional methods versus those which are more contemporary or challenging, like distance education.

Objective two was reported by segmenting respondents into different demographic categories: rank, years of college teaching, and other teaching experience. In reviewing the findings of objective two there is one clear and consistent message across all demographic variables: faculty's self-perceived knowledge and relevance of distance education basics is low. However, senior lecturers reported a moderate level of knowledge for using web-based technologies for managing courses (WebCT, E-Learning, etc.).

As Wardlow and Johnson (1999) found, faculty's perception of knowledge, as it relates to traditional teaching methods, was also scored high with senior lecturers (those who have a high level of teaching responsibility). As one would expect, they scored graduate advising as low relevance. The responsibilities of professors do shift as is seen with scores showing low relevance of teaching large classes, but high for graduate advising. All groups recognized the importance of effective lecturing as being relevant to their positions.

Overall, there were significant differences in these groups' self-perceptions of knowledge of teaching competencies, as well as relevance. This does indicate that as faculty progress through the ranks of teaching, including those non-tenured (lecturer and senior lecturer), that needs change and perceptions of importance are based on teaching and other administrative responsibilities coinciding with changes in rank.

The researchers designed categories to align with milestones to address differences based on experience. Again, groups scored distance education basics low, with four of six groups

scoring it the lowest in self-perceived knowledge. Those earlier in their careers found that they perceived themselves prepared for the teaching basics, effective teaching fundamentals, clarity in teaching and effective lecturing. Moreover, advising differences indicated that teaching faculty are either not required to advise undergraduate students (as it was scored low) or have other academic support personnel fulfilling that role, but do advise graduate students. Other important areas to point out are high scores for teaching critical thinking and active learning strategies; these high scores of self-perceived knowledge indicate that teachers, regardless of their number of years experience see the importance of these skills to the teaching and learning process. There were no significant differences among the scores.

The intent of objective three was to show relationships which exist between percentage of teaching appointment and self-perceived knowledge and relevance of teaching competencies. Of the 23 individual knowledge statements, significant correlations were reported 57 times across teaching, research, and extension appointments. Likewise, there were 58 significant correlations relating to relevance. Percentage of appointment across teaching, research, and extension influences self-perceptions of teaching knowledge and relevance. While each competency was classified as a teaching competency that does not negate the relevance of those to faculty with research or extension appointments demonstrated by the significant negative correlations among these two groups, as is contrasted with significant positive correlations with teaching appointment.

Discussion

Based on these findings it is not difficult to immediately recognize differences which exist among faculty with varying appointments. Teaching, while historically not considered as scholarly as research, is complex and diverse. Faculty members' teaching roles are varied and may include academic advising and other student development activities. Collectively, these activities impact the quality of instruction being practiced. Faculty typically do not have formal preparation for their teaching roles. The de facto approach is often to fall back on their

tried and true favorite styles of instruction, but what problems arise when the styles do not align with student needs or institutional expectations? While faculty may enjoy the benefits of traditional lecturing and demonstrate competence (perceived), what response does that elicit in the student learning – is being a passive recipient of information considered good teaching scholarship?

Further complicating this issue, as faculty appointments and responsibilities continue to be divided (typically unequally), there will be greater struggles in balancing time between teaching, research, and extension duties and responsibilities. In the future, institutions of higher education will need to be prepared to address the complex issues which arise from faculty misbalancing these areas. Administrators will need to develop innovative and strategic approaches to assist faculty and develop creative ways to reward faculty who excel in balancing these workloads.

Recommendations

Recommendations for this study focus on development efforts available for agricultural and life sciences faculty.

Additional Research

Areas for additional research include: continue to explore the teaching competencies of faculty through student evaluations and peer evaluations (360° approach); further identify why faculty have the perceptions regarding

relevance of teaching competencies; continue to investigate the role of distance education at higher education institutions to establish or justify the low relevance scores; further investigate the negative correlations between research and extension appointments as they relate to teaching competencies; identify results of faculty development programs in the areas outlined in this study; and explore the role of academic support personnel to determine what responsibilities align with different roles.

Programmatic recommendations include: develop peer mentoring programs which capitalize on demographic differences, especially the expertise of senior lecturers; invite and/or extend courtesy invitations to research and extension faculty to attend workshops related to teaching; host specific workshops with their perceived needs in mind; institute clearer guidelines or expectations as they relate to the importance or role of distance education; provide panel discussion or brown bag opportunities to faculty based on rank, for educational and networking purposes; and include those with advising responsibilities to share in workshops to further enhance their advising, especially as it relates to graduate advising.

This study provided a means for establishing differences which exist among faculty based on demographic. While few significant differences exist between groups at the demographic level, other findings and conclusions support the continued need for professional development and networking opportunities for faculty.

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