

## Perceived Knowledge and Priorities and Needs among Veterinary Medicine Faculty

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**Abstract:** Training for health professions typically does not include preparation for meeting the teaching, research, and scholarship responsibilities that a veterinarian assuming an academic faculty position will need. To address this matter, well-executed research on veterinary faculty is needed. This study reports survey findings from faculty at a southeastern United States veterinary school that measured the relationship between knowledge and priorities for further training, level of satisfaction with current faculty development opportunities and mentoring, and perceptions of what additional training/resources that might advance careers. Overall, 57% (n = 75) of the faculty participated. Agreement between knowledge and indicated priority was measured using McNemar's test for paired binary data and Fisher's exact test. There were significant differences between participants' ratings of their knowledge needs and priorities on almost all items. Slightly less than two thirds rated the mentoring as fair or poor. Also, participants reported several unmet needs that were essential to their development including training, support, learning how to write grant proposals, garnering funded research grants, and time. The findings provide information about the development needs of this faculty and hold implications for guiding change in the preparation of veterinary medical professionals who anticipate seeking positions in academia.

**Keywords:** Academic Faculty, Faculty Development, Retention, Survey Research, Vitality

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### I. Introduction

Academic faculty rarely have optimal preparation that enables them to fully assume the roles of teaching, research, and service. It is widely acknowledged that teaching in the health professions requires knowledge and competencies that are beyond disciplinary expertise. Educational training in teaching is considered essential to academic excellence, educational innovation, and professional growth of individuals and institutions.<sup>1</sup> While most faculty may be knowledgeable about scientific research protocols or clinical education, they are often unprepared for didactic teaching and conducting educational research within the university setting. To address the need for appropriate training and ensure retention, professional schools are turning to faculty development initiatives in the form of orientation, mentoring, and resource provision to effectively integrate and support new faculty.<sup>2</sup>

Faculty development has been described in various ways. Steinert and Mann defined it as "a planned program, or series of programs, to prepare faculty members for their various roles at both individual level and organizational level" (p. 317).<sup>1</sup> Morzinski referred to it as informal and formal experiences designed to assist faculty to better perform educational and leadership roles.<sup>3</sup> Steinert's more narrow definition of faculty development, focuses primarily on improving teaching effectiveness.<sup>4</sup> The authors of this paper suggest that essential and optimal faculty development accrues from the provision of a coaching-mentoring, on-site collegial approach that assists faculty in their efforts to: 1) develop research skills aimed at augmenting their productivity; 2) expand their instructional repertoire in order to facilitate active and engaged student learning; 3) develop collaboration skills to work with others across disciplines and specialties; and 4) acquire the skills, knowledge and attitudes that foster vitality, satisfaction, and success in the span of one's career. The primary aims of faculty development programs are to enhance teaching skills,<sup>5, 6</sup> sustain faculty vitality,<sup>5</sup> reinforce or alter attitudes toward teaching and educational research,<sup>7</sup> promote organizational change,<sup>8</sup> and support curriculum revision.<sup>9</sup> However, to optimize the utility and relevance of these programs, they should be based on the documented needs of individuals and institutions.<sup>1</sup>

Calls for increased attention to the training and development of academic faculty have been driven by a variety of factors. Society has increasingly demanded accountability at all levels of education from which professional schools are not immune.<sup>10, 11</sup> Efforts aimed at the professionalization of teaching and quality assurance have been influential. Regional and national regulatory and accreditation bodies<sup>12</sup> have issued similar calls. Perhaps even more important is the recognition of the crucial role that faculty play in teaching and

training the next cadre of clinicians and academicians. The development of these work groups is inextricably dependent on the skills and quality of preparation that they receive from current university faculty. A more pressing agenda lies in conducting systematic and scholarly studies that demonstrate how faculty development: 1) enhances teaching expertise which in turn impacts students' outcomes in critical thinking skills, cultural competence, communication, team work, patient-centered care and the development of interprofessional competencies; 2) promotes research productivity; and 3) aids in advancing leadership skills.

### ***1.1 Faculty Retention and Faculty Development Programs in Veterinary Medicine***

The number of studies on faculty retention and faculty development programs in veterinary medicine is relatively sparse. In a study of retention among academic veterinary surgeons, Adams et al. concluded that "reasons for moving from academia to practice besides financial considerations included undesirable location of university hospitals; lack of interest in research; and a belief that university administration was not supportive of surgery specialists. Many academic surgery specialists were frustrated by the requirement for productivity in research, teaching, and service for promotion in tenure-track positions" (p. 404).<sup>13</sup> In a review on the retention of veterinarian scientists, Freeman concluded that retention is a three-pronged stool that includes money, marketing, and mentoring.<sup>14</sup> Chew, Watanabe, Buchwald, and Lessler examined the prevalence and characteristics of mentorship among junior faculty in clinician-scientist and clinician-educator tracks.<sup>15</sup> These studies asked what, if any, role faculty development initiatives might play in averting attrition.

One study of veterinary medicine assessed veterinary faculty satisfaction with day-to-day activities, professional development needs related to teaching, research, career planning, administration, professional development support, resources, and activities through the Association of Academic Veterinary Medicine Colleges.<sup>16</sup> They found an association between job satisfaction and academic rank. Faculty with higher academic rank and/or tenure reported greater levels of satisfaction. Many of the respondents expressed moderate to high interest in learning more about: 1) teaching methods, such as effective questioning, feedback giving, principles of learning and motivation; 2) research design and grant proposal writing; 3) career planning activities including mentoring and time management; and 4) administration such as tips for fostering innovation, enhancing faculty productivity and improving the work environment. Limitations of their study were the use of a non-validated survey and the absence of discussion about its psychometric properties.

Faculty development programs have been reported to reduce the time necessary to ensure individuals' development as fully functioning members of an academic institution.<sup>17-19</sup> However, also important is that such initiatives are tailored to meet the needs of faculty, which invariably differ across individuals and institutions. To declare that faculty development initiatives meet the needs of both new and experienced faculty, assessing their professional needs is recommended. Thus, while the emergence of faculty development programs over the last decade is laudable,<sup>5</sup> affirming the congruence between faculty needs and program delivery is essential. Assessment is one mechanism that can address this issue.

The purpose of this study was to determine the faculty development needs of veterinary medicine faculty at one school located in the southeastern United States and measure: 1) the relationship between faculty's ratings of knowledge and priorities for further training; 2) their ratings of the quality of current faculty development opportunities, and mentoring; and 3) their perceptions of what additional training and resources might advance their careers. We hypothesized that there would be no significant differences among participants between their ratings of knowledge of teaching, scholarship, and leadership and career advancement subscales and prioritizing their needs for additional training in teaching, scholarship, and leadership and career advancement subscales.

## **II. Methods**

All fulltime faculty (n = 131) at a veterinary medical school located in the southeastern United States were invited to take the faculty development needs assessment, a 37-item questionnaire that measured participants' knowledge of and priorities in teaching, scholarship, and leadership and career advancement. The use of this survey has been reported in dentistry health and dental hygiene professional schools but no other professional schools.<sup>20, 21</sup> However, Haden et al. used a survey with similar aims.<sup>16</sup>

Participants were asked to: 1) rate the quality of the institution's faculty development opportunities, 2) the frequency of their participation, 3) rate their perceptions of the mentoring they received, and 4) list ways they felt mentoring could be improved. Next, they were asked to rate their knowledge of items related to teaching, scholarship, and leadership and career advancement using a Likert response scale where: (1) = none, (2) = very little, (3) = some, (4) = approaching mastery, and (5) = mastery/could teach others. They were also asked to indicate their priority for each item in relation to their own needs using a Likert response scale where: (1) = low, (2) = medium, and (3) = high. Finally, they were asked to list three needs, that if fulfilled would advance their career.

An Office of Educational Affairs' committee at the University of Florida's Jacksonville College of Medicine originally developed the survey in response to a request that they create a needs assessment to help plan a new faculty

development curriculum. After receiving institutional review board approval (IRB# U-755-2014) the researchers sent a pre-invitation letter to participants informing them of the survey using the professional and encrypted version of Survey Monkey. The rate of return was 57%, n = 75.

### 2.1 Statistical Analysis

Summary statistics were computed for all items in the survey. Knowledge and priority scores (lower knowledge=1,2,3 versus high knowledge=4,5) and priority scores (lower priority=1,2 versus high priority=3) were dichotomized. The level of agreement between knowledge and indicated priority was tested using McNemar's test for paired binary data. A significant *p*-value indicated that there was a lack of knowledge in an area and that it was not prioritized for future training or the converse (i.e., high knowledge in area and high priority given for future training). Fisher's exact test was used to examine the relationship between level of participation in faculty development and satisfaction rating. SAS version 9.3 (Cary, N.C.) and level of significance, set at .05, was used for all data analysis.

The respondents listed up to three current needs that they believed would advance their careers. The items were open coded and categorized by the authors independently. The most frequent categories coalesced into four themes. Operational definitions were created from the free responses by paying special attention to the way the responses overlapped/conflicted and the overarching concept they illustrated. Data were extracted to exemplify each of the themes.

### 2.2 Psychometrics of the Survey Instrument

Cronbach's alphas were computed to measure the internal consistency of the items in the knowledge and priority subscales as well as in the teaching, scholarship, and leadership and career advancement subscales for both knowledge and priority (See **Table 1**). As shown in the table, the overall alpha coefficient for the knowledge subscale was 0.88, for the priority subscale, it was .79. The alpha coefficients for teaching, scholarship, and leadership and career advancement subscales for knowledge ranged from .76 to .81, and ranged from .41 to .79 for the priority subscales. All of the internal consistency measures were strong with the exception of the items in the scholarship priority subscale.

**Table 1: Internal Estimates of Reliability of Subscales by Cronbach Alpha ( $\alpha$ )**

	Knowledge	Priority
Overall	0.88	0.79
Teaching	0.78	0.79
Scholarship	0.76	0.41
Leadership & Career Advancement	0.81	0.79

## III. Results

### 3.1 Participation in faculty development programs

The majority of participants (74%, n = 55) reported that they had never engaged in faculty development or had only attended one to two sessions per year. Less than one fifth, 19% (n = 14) rated these opportunities as poor, while 53% (n = 40) reported that them as fair. There were no significant difference between participants' ratings of and level of participation in the school's faculty development programs (see **Table 2**).

**Table 2: Perceptions of Faculty Development by Level of Participation**

Level of participation	Current State of Faculty Development Program				
	Poor	Fair	Good	Very Good/Excellent	Overall %
Never	43%	29%	21%	7%	19%
1-2/year	15%	59%	24%	2%	55%
3-4/year	13%	63%	19%	6%	21%
5 to more than 8/year	0%	50%	25%	25%	5%
Overall %	19%	53%	23%	5%	

### 3.2 Perceptions of Mentoring

The majority of participants rated mentoring opportunities as poor (21%, n = 16) or fair (40%, n = 30), while 28% (n = 21) rated mentoring opportunities as good. Less than 15% (n = 8) rated mentoring as either very good or excellent. When asked how mentoring could be improved, 36 responses representing nearly half of the participants were received. Of those responses, seven reported that the school had no mentoring, 13 stated that mentors needed to be trained and the remaining 26 recommended that the college administrators commit and prioritize developing a formalized, structured approach that would benefit both mentors and mentees. Participants suggested allocating designated time for mentor meetings. They also recommended that the college take the time to understand the current teaching culture, provide support consistent with faculty needs, and offer incentives to acknowledge improved faculty performance.

**3.3 Priorities in Teaching, Scholarship, and Leadership and Career Advancement**

There were statistically significant differences between participants' knowledge of and priority for eight of the nine teaching items (*Teaching effectively*,  $p = 0.023$ , *Providing constructive feedback to learners*,  $p = 0.002$ , *Using effective assessments*,  $p < .0001$ , *Enhancing small group teaching*,  $p = 0.028$ , *Using emerging technology in the classroom*,  $p < .0001$ , *Selecting appropriate teaching methods*,  $p < .0001$ , *Designing courses*,  $p < .0001$ , and *Developing an educational portfolio*,  $p = 0.0018$ ) (see **Table 3**).

Statistically significant differences between participants' knowledge of and priority were observed for three of five of the scholarship items including: *Grant proposal writing in discipline research*,  $p = 0.0007$ , *Documenting educational outcomes*,  $p < .0001$ , and *Writing an education manuscript*,  $p < .0001$ . Statistically significant differences between participants' knowledge of and priority were observed for eight of the 11 leadership and career advancement items including: *Managing time*,  $p = 0.0411$ , *Demonstrating leadership skills*,  $p = 0.0079$ , *Managing conflict*,  $p = 0.0035$ , *Utilizing negotiation skills*,  $p < .0001$ , *Preparing for promotion and/or tenure review*,  $p < .0001$ , *Creating a teaching portfolio*,  $p < .0001$ , *Mentoring peers*,  $p < .0001$ , and *Peer observation of teaching with feedback*,  $p < .0001$ . (see **Table 3**).

**Table 3: Relationship between Participants' Knowledge and Priority for Training**

Item	% Lower Knowledge	% High Priority	p-value <sup>(1)</sup>
<b>Teaching</b>			
Teaching effectively	61%	79%	0.023*
Providing constructive feedback to learners	82%	52%	0.002*
Using effective assessments	92%	49%	<.0001*
Enhancing small group teaching	72%	52%	0.028*
Using emerging technology in the classroom	94%	28%	<.0001*
Selecting appropriate teaching methods	89%	51%	<.0001*
Enhancing my classroom teaching	77%	71%	0.4497
Designing courses	82%	25%	<.0001*
Developing an educational portfolio	95%	16%	0.0018
<b>Scholarship</b>			
Grant proposal writing in discipline research	76%	42%	0.0007*
Conducting literature searches	27%	42%	0.0679
Developing research designs	68%	52%	0.0705
Documenting education outcomes	95%	25%	<.0001*
Writing an education manuscript	89%	27%	<.0001*
<b>Leadership &amp; Career Advancement</b>			
Balancing work and personal responsibilities	74%	69%	0.5637
Managing stress	75%	61%	0.0833
Managing time	78%	61%	0.0411*
Demonstrating leadership skills	72%	45%	0.0079*
Sustaining passion for teaching	66%	59%	0.5050
Managing conflict	77%	48%	0.0035*
Utilizing negotiation skills	85%	18%	<.0001*
Preparing for promotion and/or tenure review	80%	37%	<.0001*
Creating a teaching portfolio	95%	12%	<.0001*
Mentoring peers	83%	32%	<.0001*
Peer observation of teaching with feedback	89%	22%	<.0001*

Note: (1) p-value from McNemar's test

\* Denotes statistically significant difference between level of knowledge and priority given.

**Table 4:** Summary of Items that Participants Indirectly Identify as High Need and High Priority

Item	% Lower Knowledge	% High Priority	p-value <sup>(1)</sup>
<b>Teaching</b>			
Teaching effectively	61%	79%	0.02333*
Providing constructive feedback to learners	82%	52%	0.0018*
Using effective assessments	92%	49%	<.0001*
Enhancing small group teaching	72%	52%	0.0280*
Selecting appropriate teaching methods	89%	51%	<.0001*
Enhancing my classroom teaching	77%	71%	0.4497
<b>Scholarship</b>			
Grant proposal writing in discipline research	76%	42%	0.0007*
Developing research designs	68%	52%	0.0705
<b>Leadership &amp; Career Advancement</b>			
Balancing work and personal responsibilities	74%	69%	0.5637
Managing stress	75%	61%	0.0833
Managing time	78%	61%	0.0411*
Demonstrating leadership skills	72%	45%	0.0079*
Sustaining passion for teaching	66%	59%	0.5050
Managing conflict	77%	48%	0.0035*

Note: (1) p-value from McNemar’s test

\* Denotes statistically significant difference between level of knowledge and priority given.

### 3.4 Knowledge and Priorities for Further Training in Teaching, Scholarship, and Leadership and Career Advancement Skills

Any item in the Knowledge and Priority columns with a percentage of more than 40%, was rated as a high need and high priority. In this analysis, six teaching, two scholarship, and six leadership and career advancement items were identified. Teaching items included: *Teaching effectively*, *Providing constructive feedback to learners*, *Using effective assessments*, *Enhancing small group teaching*, *Selecting appropriate teaching methods*, and *Enhancing my classroom teaching*. Scholarship items included: *Grant proposal writing in discipline research* and *Developing research designs*. Leadership items included: *Balancing work and personal responsibilities*, *Managing stress*, *Managing time*, *Demonstrating leadership skills*, *Sustaining passion for teaching*, and *Managing conflict*.

The significant differences observed among participants between their ratings of knowledge of teaching, scholarship, and leadership and career advancement subscales and prioritizing their needs for additional training in teaching, scholarship, and leadership and career advancement subscales resulted in rejecting the null hypothesis.

#### 3.4.1 Unmet needs

The respondents listed 162 current needs that they believed would advance their careers. In rank order from highest to lowest, categories that represented at least 20% of the responses included: training (n=38), support (n=29), writing and garnering grant funding (n= 20), and time (n=17). Training referred to requests for further education in conducting research, teaching, and preparation for promotion. Faculty requested assistance in learning how to conceptualize and conduct educational research and training in how to teach online. Support referred to administrative, clerical, and technological support, someone to delegate tasks, and university or college support for online teaching, including the provision of teaching assistants. Writing and garnering grant funding referred to assistance in learning how to write grant proposals and obtaining funded research grants. Time referred to having more dedicated time to: 1) write papers and proposals, 2) devote to scholarship, 3) think of new ideas, 4) complete ongoing projects and develop new ones, and 5) improve clinical and didactic teaching.

## IV. Discussion

Findings in this study showed that there were statistically significant differences between knowledge needs and priorities. Overall the findings showed that of the 25 survey items, participants reported a desire for further training in 24 teaching, scholarship and leadership activities, suggesting that they have a considerably high number of faculty development needs.

The limitations of this study are due to the use of a survey and self-report measures. The response rate was 57%, which has the potential to bias results. Inherent biases are also possible due to social desirability bias.<sup>22</sup> However SDB was not assessed in this study. Thus, future use of this survey should be conducted alongside a measure of social desirability bias

to discern if there was a significant difference in ratings among those respondents who might demonstrate social desirability bias and those who do not. Also unknown is why faculty report these needs. For example, were these needs prioritized because they were expectations for a promotion to the department chair, or because faculty sought additional professional development for intrinsic reasons? Other limitations of this analysis is that: (1) it did not differentiate between veterinarians and basic scientists, (2) measure potential associations by rank, years of experience, new or experienced faculty, (3) compare the distribution of faculty efforts to teaching, research, clinical care or some combination, or (4) determine if differences in ratings might have been associated with particular demographic variables.

The findings in this study are similar to what Haden et al. reported.<sup>16</sup> With respect to teaching topics, faculty in both studies reported the need to learn more about giving feedback. Concerning research, they reported a need to learn more about research design and writing grant proposals. With respect to leadership and career advancement, participants indicated a need to learn how to manage time. The necessity for robust systematic scholarly studies that support the investment of resources allocated to faculty development programs has been cited as a limitation. Empirical and other studies call for faculty development programs that are responsive to both individuals and institutions. As Bell pointed out, context-specific faculty development programs would likely benefit faculty and students alike.<sup>23</sup> The present study is a step towards building a body of research, which might ultimately support the implementation of faculty development initiatives. Perhaps the Association for Academic Veterinary Medical Colleges (AAVMC) will heed appeals and take the next step by conducting a national study of all veterinary medicine faculty using a validated measure to assess their perceived knowledge and priorities as it relates to faculty development.

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