

Food Animal Clinical Course Evaluations are Influenced by Student Career Goals

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Abstract

In response to concerns expressed by faculty members that the preponderance of students interested in small animal practice negatively impacts results of food animal course evaluations, a study was undertaken to examine the relationship between student career goals and student evaluations of courses and course content. All student evaluations available for a food animal medicine, surgery and production medicine clinical course taught at the University of Missouri College of Veterinary Medicine from January 23, 2002 to June 7, 2005 were compiled. One component of the survey was student perceptions of the course and course content. These perceptions were linked to student career goals. Median scores for course content differed significantly among students with small animal, mixed animal and large animal career goals ($P = 0.002$). Specifically, the grade for course content differed among students with an expressed career in small animal practice and students with an expressed career in large animal practice ($P < 0.05$). Median scores for the course in general also differed significantly among the three defined groups ($P = 0.044$); however, none of the specific pair-wise comparisons were significant ($P > 0.05$).

Résumé

Les professeurs s'inquiètent ouvertement du fait que le grand nombre d'étudiants intéressés par la pratique des petits animaux aurait un impact négatif sur l'évaluation des cours portant sur les animaux de production. Une étude a donc été menée afin d'examiner la relation qui existe entre les objectifs de carrière des étudiants et l'évaluation des cours et du contenu des cours. Toutes les évaluations des étudiants pour les cours de médecine des animaux de production, de chirurgie et de production clinique enseignés à l'Université de Missouri College of Veterinary Medicine du 23 janvier 2003 au 7 juin 2005 ont été compilées. Une des composantes

de l'enquête se penchait sur la perception des cours et de leur contenu. Ces perceptions étaient liées aux objectifs de carrière des étudiants. Les scores médians pour le contenu des cours étaient significativement différents selon que les étudiants s'orientaient vers la pratique des petits animaux, la pratique mixte ou la pratique des grands animaux ($P = 0.002$). Plus particulièrement, le score pour le contenu du cours différait entre les étudiants se dirigeant vers la pratique des petits animaux et ceux se dirigeant vers la pratique des grands animaux ($P < 0.05$). Les scores médians pour un cours en général différaient aussi entre les trois groupes ($P = 0.044$). Toutefois, aucune des comparaisons deux à deux n'était significative ($P > 0.05$).

Introduction

Student evaluations of courses and instructors are commonplace at veterinary colleges. Student evaluations are often used to identify strengths and weakness of specific courses, and to evaluate the effectiveness of instructional strategies.^{1,2,4,5} Administrators may use results to target specific courses or instructors for scrutiny or intervention. Student evaluation scores are often used both in the tenure and promotion process and in determination of merit pay. Finally, student surveys are the basis for most awards and recognitions for meritorious instruction. Consequently, the validity of student survey instruments is a critical issue in evaluating and formulating veterinary school curricula.

The impetus for this study was the perception expressed by a number of food animal faculty that course evaluations were biased because the vast majority of veterinary students have a predominant interest in either mixed or small animal practice. The purpose of this study was to determine whether results of course evaluations were associated with expressed student career goals. Specific outcomes measured included student perceptions regarding course content, and student perceptions regarding the course as a whole.

Materials and Methods

All student evaluations generated for a food animal medicine, surgery and production medicine clinical course taught to third and fourth year veterinary students at the University of Missouri College of Veterinary Medicine from January 23, 2002 to June 7, 2005 were compiled. The course evaluation instrument, a web-based computer survey, is completed during the last week of a six-week instructional block which includes in-house medicine and surgery, production medicine and traditional ambulatory service. Participation in the course evaluation process was voluntary. Part 1 of the survey instrument included 30 separate questions and anonymous student responses that were compiled and reported as summary statistics. In part 2 of the survey, students were asked 1) their expected grade in the course; 2) the number of hours they studied per week outside the course; 3) the grade they would give the course content (A, B, C, D, or F); 4) the grade they give the course in general (A, B, C, D, or F); and 5) their goal after graduation (large animal practice, mixed animal practice, small animal practice, or other). In this second portion of the survey (part 2) responses were linked, permitting correlation of student career goals and their responses to the four preceding questions. It should be noted that this portion of the survey has not been used extensively in either course or instructor evaluation, and its inclusion in the survey is believed to be a coincidental hold-over from previous hard copy survey instruments. It should be noted that no conscious effort was, or ever has been, made to identify student career goals.

Responses which identified "other" as the student career goal were deleted because the number of responses ($n = 3$) was deemed insufficient to permit meaningful analysis. Student assigned grades for course content and the course in general were converted to a numeric scale (A = 4, B = 3, C = 2, D = 1, F = 0). Thereafter, these grades were compared among students expressing career goals in large animal, mixed animal or small animal practice using a Kruskal-Wallis analysis of variance. The choice of a non-parametric analysis was dictated by the ordinal nature of the measured endpoint grades. Furthermore, preliminary analyses confirmed that grades were not normally distributed. In instances where a significant difference was observed among the three career goal defined groups, all possible pair-wise comparisons were performed using the Dunn method.

Results

Sixty-two (62) responses, excluding three students expressing "other" as a career choice and one student response which did not identify a career goal, were provided to the survey. These responses included 26 stu-

dents with an expressed interest in small animal practice, 30 students with an expressed interest in mixed animal practice, and six students with an expressed interest in large animal practice. The overall response rate for the survey instrument was 32%.

Median (range) scores for course content for students with small animal, mixed animal and large animal career goals were 3 (4, 2), 4 (4, 1) and 4 (4, 4), respectively. Scores differed significantly among the three defined groups ($P = 0.002$). Specifically, the grade for course content differed among students with an expressed career in small animal practice and students with an expressed career in large animal practice ($P < 0.05$). None of the other pair-wise comparisons (small animal vs. mixed animal, mixed animal vs. large animal) were significant.

Median (range) scores for the course in general for students with small animal, mixed animal and large animal career goals were 3 (4, 2), 4 (4, 1) and 4 (4, 4), respectively. Scores differed significantly among the three defined groups ($P = 0.044$); however, none of the specific pair-wise comparisons were significant ($P > 0.05$).

Discussion

Results of this study raise serious concerns. Student career goals were significantly related to evaluations of both course content and the course in general. Students with career goals focused on small animal practice gave significantly lower scores for course content than did students with large animal focused career goals. The significance of association suggests that student career goals will bias the results of instructional evaluations. These results are particularly problematic, given the relative paucity of students with career goals focused on large animal practice. Only six respondents expressed goals in large animal practice. In direct contrast, 30 of 62 respondents expressed a career goal in the area of small animal practice. The validity of student evaluation instruments is directly challenged by the results of this study.

The lack of significant pair-wise comparisons in the scores evaluating the course as a whole is probably a reflection of the limited size of the dataset, which included only 62 responses, and only six responses were from students with large animal career goals.

This study does not identify the source or cause of the observed bias, and several possible explanations are available. The first possible explanation is that student goals inherently create differential patterns of participation and perception that impact their perception of instructional efficacy. The second explanation is that pre-veterinary experiences and preparation differ dramatically among students of varying career goals, and

these differences impact perceptions of educational quality. We presume that students interested in careers in large animal practice are more likely to have completed a pre-veterinary curriculum which included significant content in the areas of livestock husbandry. This differential preparation may increase the palatability of instructional efforts in large animal practice by improving student preparation and providing a contextual framework for further instruction. Finally, instructors may either consciously or unconsciously provide instruction of divergent quality based on their perception of student career goals. Regardless of which hypothesis is true, the apparent bias in observed student perceptions raises serious concerns which warrant responses from veterinary educators.

Although the collection of student career goal data in the described instrument could best be viewed as accidental, rather than planned, the divergence of perceived instructional quality suggests information of this type may have substantial value in evaluation of instruction. Consequently, this type of information should continue to be collected in a systematic and rigorous manner which preserves anonymity. A more systematic evaluation process which links student evaluations with other data sources might provide new and powerful perspectives. Data regarding the content of pre-veterinary coursework, job experience and a variety of demographic variables could be linked to student evaluations, providing unique insights. For example, does the presence or absence of pre-veterinary coursework in livestock husbandry and nutrition relate to student perceptions of course instructional quality? Whatever data sources are mined, the creation of a firewall protecting student anonymity will be a critical component of such a system.

The recent Food Supply Veterinary Medicine Coalition (FSVMC) reports documented the impact of student goals and perceptions on student career goals.³ Recognition that these same perceptions and attitudes impact the instructional experiences was both logical and expected.

Conclusions

Student course and instructor evaluations are attractive because they provide apparently hard numeric data describing instructional efficacy. The present report substantiates that instruments of this type are subject to potential bias. Appropriate application of evaluative data probably requires that we recognize the inherent biases in these instruments and view data of this type as qualitative, rather than quantitative. If we recognize the potential for bias, minor shifts in scores are cause for further consideration, rather than targeted intervention.

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