

# Evaluating Students' Course Evaluations: A Retrospective Study

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**ABSTRACT.** The purpose of this retrospective study was to investigate the influence of several factors on students' course evaluation scores. Scores from the past five years were collected from all the professors in the Pharmaceutical Sciences Department, and then examined with respect to differences between graduating classes, the percentage of A and B grades given, average grade given, and difference between professors co-teaching in the same course. The results of this study indicate that students' evaluation scores are not influenced significantly by any one of these factors, but rather are influenced primarily by the students' perception about the professor.

## *INTRODUCTION*

Students' course evaluation scores are perceived at many educational institutions as one of the methods to assess a professor's teaching ability. In academia, the quality of teaching, service, and research are main components which are examined for promotion and tenure. Therefore, students' evaluation scores are considered to be important when evaluating faculty for promotion or tenure. The effectiveness of students' course evaluations are greatly enhanced, however, if peer (1, 2, 3), administrative (1, 2), and self-evaluations

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(1, 2, 4) are also performed as often as student evaluations. The self-evaluation is important because it reflects the professor's perception as opposed to those of students. In one study (5), this self-evaluation was found to correlate well with the students' evaluations when the students were in a regular curriculum tract (vs. problem-based curriculum where the material was presented in a case-study format).

There is no single standard format, however, for such an evaluation process. Each pharmacy school has developed and modified an evaluation procedure over the years. At our School of Pharmacy, we have used the same evaluation form since 1987.

There are several factors that may potentially influence students to score professors or courses in a particular way (2). These factors may include professor's popularity among the students, grades given by the professor, the difficulty of the course materials, the difficulty of the tests given, the class expectation of the profession of pharmacy, and the way the course materials were presented (e.g., the use of audiovisual aids vs. blackboard) (6), among others.

In this retrospective study, data from the past five years of the students' course evaluation scores were collected and analyzed. The objectives of this study were: (1) to examine the relationship between the scores and such variables as the graduation year of the class, professor's performance, professor's attitude, or course grades; and (2) to study whether the scores are reliable means to estimate a professor's ability in teaching.

## METHODOLOGY

### *Collecting Students' Evaluation Scores*

Every professor in the department of Pharmaceutical Sciences was asked to submit their students' course evaluation scores, the number of A and B grades given in every course, and the average course grades. All ten faculty with teaching responsibility in the department submitted this information. One set of data was eliminated and not included in the study as a way to maintain confidentiality.

### ***The Form***

The course evaluation form (Form No. 20-S-WS, Scantron) contains 20 questions (Table 1). The students indicate their agreement or disagreement by marking A = strongly agree, B = agree, C = neutral or undecided, D = disagree, and E = strongly disagree. The questions probe the students' perception of the instructor's performance, dependability and attitude, supplemental instructional materials, such as textbooks, examinations, and grading.

### ***Processing the Data***

After the data was collected from the instructors, the A to E scale answers were converted to a 1 to 5 scale, where A = 5 and E = 1. The mean for every question and the overall mean and standard deviation for each course was then calculated. The means were used for correlations with the different factors. For confidentiality, every course and every professor was randomly assigned a number.

### ***Computer Software***

For calculating means of the different questions, the overall means and standard deviations, and for plotting the data, a commercial spreadsheet program was used (Quattro-Pro, Borland, Inc., Scotts Valley, CA).

## ***RESULTS AND DISCUSSION***

The relationship between teaching experience and evaluation scores is shown in Figures 1 and 2. The results indicate that there is no significance difference in the evaluation scores collected during the first year of teaching and those of subsequent years (Fig. 1). However, the variation, as presented by standard deviation, appears to be greater during the first year of teaching (Fig. 2). This may be due to the fact that the professor becomes more focused and more comfortable with teaching, and that his/her presentations become more organized over the years. The general notion that some grad-

TABLE 1. Course Evaluation Questionnaire.

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**Instructor's Performance:**

1. Learning objectives have been clearly defined.
2. Learning objectives in this course have been achieved.
3. The instructor demonstrates a command of the subject.
4. Lectures are presented in a well-organized manner.
5. The instructor speaks with appropriate enunciation, pace, and loudness.
6. Overall, the instructor has been effective in helping me develop a better understanding of the subject.

**Instructor's Dependability:**

7. The instructor is conscientious about beginning and ending lectures on time.
8. The instructor has been available to help students outside the classroom.
9. The instructor's help outside the classroom has been useful.

**Supplemental Instruction Materials:**

10. The quality and effective utilization of audiovisual aids contributed to my understanding in this course.
11. The textbook and/or assigned readings were valuable learning aids.
12. The handouts provided in this course were valuable educational supplements.

**Instructor's Attitude:**

13. The instructor treats students in a considerate and professional manner.
14. The instructor recognizes student's difficulties in understanding new material.
15. The instructor helps students overcome difficulties in learning new material.
16. Questions and comments are encouraged in class.

**Examinations and Grading:**

17. Grading procedures have been clearly defined.
  18. The instructor clearly indicates what materials the tests will cover.
  19. The examinations fairly reflect lecture material and reading assignments.
  20. There is sufficient time allotted to complete each examination.
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uating classes are "harder" in their evaluations than others was also tested. Figure 3 shows that there is no significant difference among the graduating classes in their evaluation scores. Therefore, even though the composition and the "character" of the class, as perceived by the faculty, change from year to year, the differences between classes do not result in significant differences in the evaluation scores. As shown in Figure 4, the average scores for individual questions do not differ from each other, suggesting that students do not discriminate between questions but scored professors on overall perception of general performance. Furthermore, in a team-taught course (e.g., course number 13), questions 17 and 20 of the evaluation form, when answered, should yield similar scores for all the professors co-teaching the same course. However, the results from course number 13 indicated that one of the professor's scores were markedly lower than the other three instructors (Fig. 5 and 6). This indicates that students appear to evaluate on a general perception rather than answering each question by itself. It was suggested that for faculty evaluation of team-taught courses, the use of several evaluations immediately following each topic was a better indicator than a one final overall evaluation for the course (7). Using "topic" evaluations rather than "course" evaluation may help the student to evaluate each presentation in more detail and from this the professor gains a better insight on how the students feel about particular material in the course. Another area of concern among faculty is the expectation that there is a good correlation between grades and course evaluations. Figures 7 and 8 show the relationship between grades and evaluations. Contrary to this expectation, and despite the hint of a trend in visual inspection of the data, the average course grades or percentage of A and B grades given did not correlate (1, 2) with the evaluation scores, indicating that a grade is not a major factor in influencing the evaluation scores.

Based on the results of this study, using the students' evaluation scores alone to assess a professor's teaching performance may not be a reasonable practice. Students' evaluation scores should be used along with peer reviews, administrative reviews, and students' performance on national and state examinations, as indicators for teaching quality.



FIGURE 3. Average Evaluation Scores (by Year of Graduation).

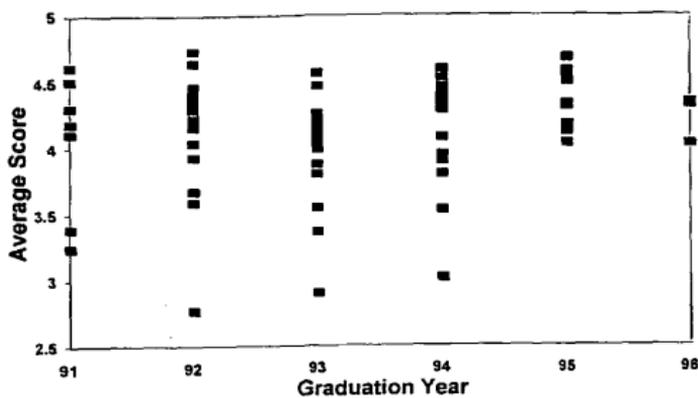


FIGURE 4. Average Evaluation Scores (of All Professors).

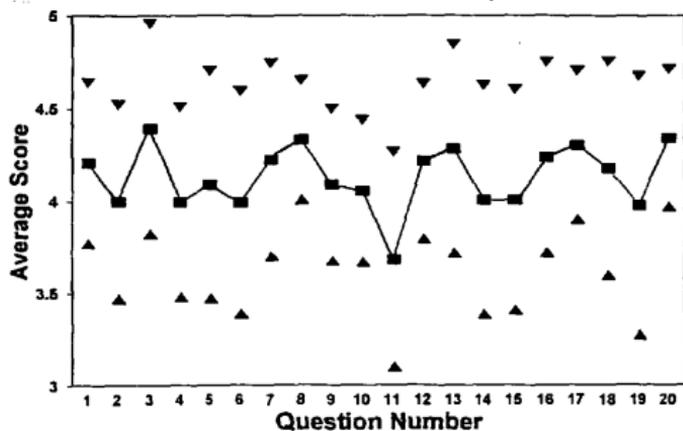


FIGURE 5. Evaluation Scores on Question 17 (for Course 13 versus Professor Number).

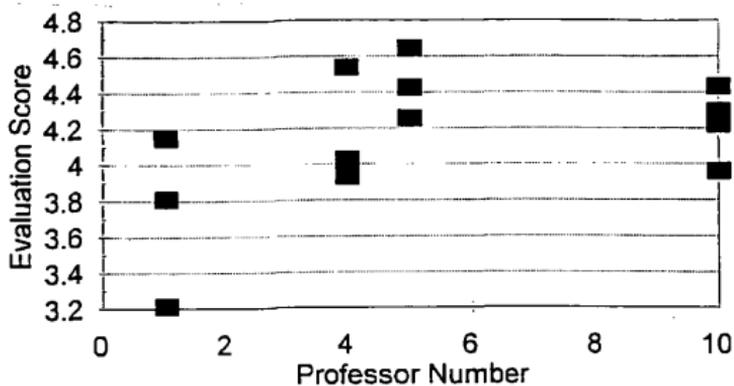


FIGURE 6. Evaluation Scores on Question 20 (for Course 13 versus Professor Number).

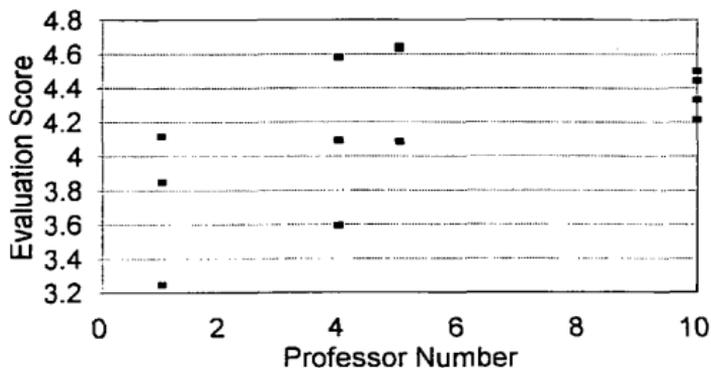


FIGURE 7. Average Evaluation Scores (versus Percent of A's and B's).

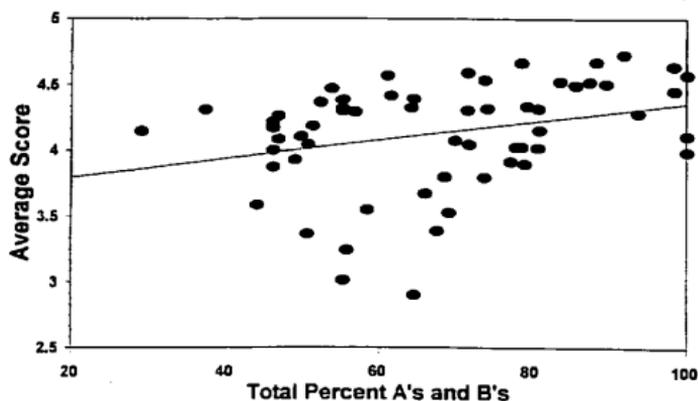
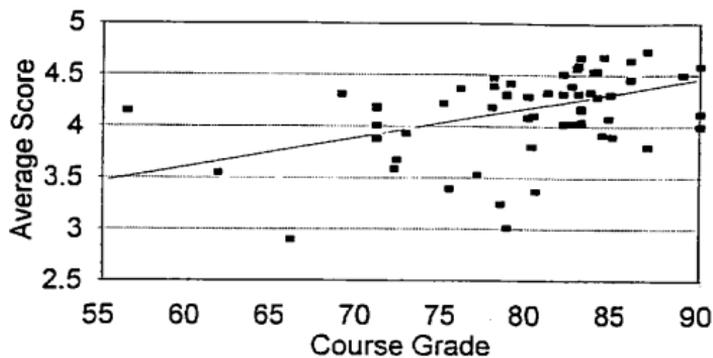


FIGURE 8. Average Evaluation Scores (versus Course Average Grade).



### CONCLUSION

Students' course evaluation scores primarily measure students' perception about the professor. However, no individual factor such as high grades given by the instructor or the length of time teaching the course was shown to be a significant determinant.

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