

Using Data from Teaching Evaluations to meet Assessment Criteria and Improve Teaching Effectiveness

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Abstract

Using data as a catalyst for initiating changes for improving program performance is critical in any effective assessment strategy. Successful assessment programs typically measure performance and implement improvement strategies in the identified areas of student learning, student services, and in increasing measure, teacher effectiveness. In spite of the long running debate over their usefulness (Centra, 1993), Student Evaluation of Teaching (SET) has long been a major component in most assessment strategies involving teaching effectiveness. The U.S. Department of Education's Educational Resources Information Center system cites more than 2,000 articles on research that focus on student evaluations. Assuming that the primary goal of such instruments is to improve teaching effectiveness, this paper explores one department's use of statistical analysis of faculty teaching ratings from graduating seniors. This information was used by the department chair to develop appropriate professional development activities and provide performance feedback to individual faculty.

Project Background

Successful academic programs must include performance assessments to ensure the implementation of program improvements. (Selding, 1995) noted that colleges and universities were moving to concerted and sustained efforts to improve teaching in programs. Since most academic accreditation standards require both student evaluation of the program and application of improvement strategies for teaching effectiveness, continual improvements related to these areas continue to be important to institutions of higher learning. (Halloran, 2010) even points out that government in some countries now demand that universities be judged on their

performance in teaching to meet both regulatory and funding requirements.

The existing research regarding issues that impact

teaching effectiveness is extensive. One such issue is faculty recognizing the need for improvement. (Blackburn, 1980) found in interviews with almost 300 college teachers, that 92% of the teachers believed their own teaching was above average. It may be that within a department, faculty members hold these same beliefs and do not actively engage in efforts to improve their teaching effectiveness. This research project statistically compared faculty members' ratings on senior surveys for the Department of Technology and Engineering with the intent of potentially using this statistical data to improve performance.

Survey Description

The graduating senior survey was strongly encouraged but not a mandatory requirement for graduation. A majority of graduating Department of Technology and Engineering students complete the survey but it cannot be stated that all did. The rating scale for the teaching effectiveness of a faculty member ranges from A (excellent), to D (very poor). There is also an E rating (no opinion) if the student did not have the faculty member as an instructor. In order to compare the mean rating of each faculty member, points of 4, 3, 2, and 1 were assigned for answers A through D respectively. The rating of E, no opinion, was considered a non-rating and was not counted. Since an ordinal rating scale was used, the distinction has to be made that the subjects taking the survey may not have felt that the difference between each step is equal. An A rating may have been considered twice as good as a B rating to some subjects but only marginally better to others. For the purpose of this comparison it was

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assumed that each step in the ratings scale was equal.

Statistical Analysis

Minitab was selected as the software package for data analysis. An analysis of variance (ANOVA) determined if there was a statistically significant difference in the average ratings of the faculty members. T tests were utilized to compare faculty members' older ratings to their newer ratings to determine if differences over time were statistically significant. Finally, the variances in ratings for faculty members were compared.

One faculty member had a mean rating that was significantly ($\alpha = .05$) higher than those of all other faculty members and the smallest variation in rankings. Comparison of most recent ratings with ratings from earlier years generally revealed that the ratings have decreased over time but the decrease was not statistically significant for most faculty members.

Use of Findings

The data clearly indicated that one faculty member received higher ratings from students than other faculty members in the Department of Technology and Engineering. A check of grading patterns for this faculty member revealed that the grades students received were no better than grades received from other faculty members within the department. This fact negates any tendency to suggest that the higher ratings might be the result of easier grading. Upon extensive review, it was apparent that the highest rated faculty member incorporated teaching strategies that relate well to departmental students. The consistency of this faculty member's ratings (small standard deviation) was especially intriguing. With the idea that this highly rated faculty member might be able to share some insight with the other members of the department, the department head asked this faculty member to develop and deliver a "Best Practices in Teaching" seminar for the department. The faculty member developed and delivered the seminar and feedback was solicited from faculty members to assess its usefulness. The seminar centered around three key points; course structure and organization, feedback to students, and real-world application. .

The second significant discovery was that the scores for the highest rated faculty members have decreased slightly over a period of years. Each of these faculty members was made aware of these findings and asked to examine their practices to determine if some change in their approach to teaching may be contributing to the lower ratings. During these discussions it was noted that our student population has changed significantly from non-traditional to traditional age students during this time period which may

be a contributing factor. Faculty members were encouraged to include teaching methodologies that match the learning styles of these younger students. As a result, the department acquired twenty-five ipads that are provided to students for portions of selected classes to increase the engagement of the students as active learners.

The third finding was that the scores for the lowest rated faculty members were not changing significantly up or down. These faculty members were made aware of the findings to encourage these faculty members to explore ways to improve teaching effectiveness since excellence in teaching is a major criterion for success in a regional institution.

Feedback from Faculty Members and Conclusion

A short survey was administered to all faculty members following the seminar to help assess the effectiveness of the professional development opportunity. Some questions were designed to gather information about the overall effectiveness of the information presented, the format of the seminar, and the time allotted for discussion. One question asked whether faculty members were likely to incorporate an idea presented in the seminar into a class. Survey results were encouraging. All faculty members agreed, and the majority strongly agreed that the seminar should be helpful in improving teaching effectiveness and that they were likely to incorporate at least one idea from the seminar into a class that they teach. Preliminary results from the project indicate that systematic review and analysis of available data can be useful in developing effective strategies for improving teaching effectiveness. A longitudinal study will be needed to determine if teaching effectiveness in the department was actually strengthened as a result of this project.

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