

The Relationship between Quality of Teaching and Student Evaluations: The Case of an Academic Course in Endocrinology

Gad Degani

Department of Biotechnology, Tel Hai College MIGAL Galilee Research Institute, South Industrial Zone, Kiryat Shmona, Israel

Email: gad@migal.co.il

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Abstract

The purpose of the research was to examine the relationship between student attendance of lessons, success on exams, and student evaluations of teaching regarding courses taught by a lecturer in the field of endocrinology. The methodology consisted of recording attendance of lectures, examining exam results, and reviewing the results of the student evaluations of teaching. The results indicated significant differences in course attendance by department of study. In the animal sciences, only 57% of the students attended the lectures; in the nutrition department and the master's degree program, the attendance rate was 87%. No significant difference was found between the grades of the animal science students who attended lectures and those of the students in the nutrition department and master's-degree program (due to the similar and high attendance rates, they were considered as one group). The grades of the animal science students who did not attend lectures were significantly lower than those of the other groups ($p < 0.05$). No significant difference was indicated between the college-wide mean score on the student evaluations of teaching and those in two of the study programs examined (nutrition and master's degree). However, the student evaluations of the Introduction to Endocrinology course taught in the animal sciences were significantly lower than the college-wide mean, and compared with the two other endocrinology courses, in the nutrition department and the master's degree program. The research results support findings of previous studies that student evaluations of teaching actually examine student satisfaction and interest in the course, which are correlated with the student's academic level and investment in studies. The findings also corroborate the results of previous research conducted at Tel Aviv University, which shows that evaluation surveys administered to students do not indicate the actual quality of a lecturer's teaching.

Keywords

Student Satisfaction, Achievement in Endocrinology, Science Studies, Student Evaluations

1. Introduction

The hiring of lecturers at academic colleges is not based on clear-cut criteria, but rather on the academic degree that the candidate has earned. Promotion of academic rank is fundamentally similar to that customary in research universities. Earlier research [1] [2] showed that the scientific achievements of full professors at Tel Hai College did not differ significantly from those of their colleagues in the same disciplines at research universities.

However, there is a vast difference between universities and colleges regarding the expectations of faculty members. At research-oriented universities, a researcher who does not produce a given volume of publications within a set period of time may be dismissed from the faculty, but in academic colleges, the requirement for promotion from the rank of lecturer to senior lecturer is more flexible. A senior lecturer at an academic college may receive tenure, and in some cases even become the department chair. In the colleges (and particularly those located in the periphery), there is strong competition for students, and the teaching staff is weaker and less organized than in universities. The long teaching hours in the academic colleges and the explicit and implicit pressure to be a good instructor create a constant state of job-related anxiety among lecturers. In many cases, the students are aware of this pressure on the lecturers; as a result, it is more difficult for the lecturers to reach high academic ranks, and their sense of security seems to be lower than that of lecturers in research-oriented universities.

The teaching evaluations customarily used in colleges, in general, and in academic colleges in particular, in effect make the students judges of their lecturers. The colleges have no instruments with which to examine the quality of teaching. In fact, the name of these evaluations was changed from "Student Surveys of Teaching" [3] [4] to simply "Teaching Quality," as though the students had the tools necessary for examining the quality of the lecturer's teaching. In a summary article, Professor NiraHativa [5] discussed different views on the subject, and proposed a more accurate name for the type of survey employed at Tel Hai College. Instead of "teaching quality," the author suggested the more specific description of "a survey of students regarding teaching."

On the face of it, Tel Hai, as well as all the other colleges, might be satisfied with the researcher's general conclusions, but these surveys don't actually say anything about a lecturer. Hativa showed that on average, the student evaluations of teaching were not affected by course difficulty, the level of grades, or a desire to take revenge on the lecturer. This is true. However, in my opinion, teaching should be evaluated in terms of the aims of teaching, and not student satisfaction. In order to highlight the author's claims, I present some of the conclusions presented in her articles, which she confirmed in her research (Hativa, Many, & Dayagi, 2010):

What does Tel Aviv University's teaching survey measure? It measures student satisfaction with teaching. Thus, the survey administered at the university is entitled the "Survey of Student Satisfaction with Teaching." It does not measure the quality of instruction; students are incapable of evaluating important aspects of instruction, such as, for instance, whether the course material is up to date and whether it includes the main ideas of the relevant research. It measures neither what the students learned nor the level of their knowledge. There are various tests for measuring learning, and it is inaccurate and unfair to determine the status of a lecturer based on the results of student evaluations.

The purpose of the present brief research was to examine a single field of instruction of one lecturer at an academic college. The objectives were a) to examine the correlation between student attendance, degree of success on the course exam, and the student evaluations of the lecturer, and b) to examine whether the lecturer in question met the academic criteria of the international academic community, based on comparison of the results with those in the databanks and literature.

2. Method

The research was conducted regarding three courses in endocrinology:

- Molecular Endocrinology and Its Use in Agriculture, taught in the first year of the master's-degree study

- program.
- Introduction to Human Endocrinology, taught in the third year of bachelor's-degree studies in the Department of Nutritional Sciences.
 - Introduction to Animal Endocrinology, taught in the third year of bachelor's-degree studies in the Department of Animal Sciences.

Based on the criteria for admission to the different programs, the master's degree students are of the highest level, followed by those enrolled in the Department of Nutritional Sciences, and finally, those in the Department of Animal Sciences. In all courses, attendance was mandatory and recorded. The presentations and syllabi for all three courses were uploaded onto the college portal. Students who missed more than four lectures were defined as absent from the course.

For the statistical analyses, we used an ANOVA test of the differences in scores among the groups, a T test, and an F test. We also analyzed the significance of differences in the mean grades of the students who attended lessons (*i.e.*, missed no more than three lessons) compared with those who missed four or more lessons within each group.

3. Results

The results regarding attendance of the lectures indicated a significant difference by study program. In the Department of Animal Sciences, only 57% of the students attended the lectures. In the Department of Nutritional Sciences and the master's degree program, 87% attendance was recorded. The mean grades of the students in the different groups, based on a multiple-choice exam, are presented in **Figure 1**. No significant difference was found between the students of animal sciences who attended the lectures and the students in the nutritional science and master's degree programs (because of the high percentage of attendance, we did not separate these two groups). The mean grade of the students in animal sciences who did not attend lectures was significantly lower than that of the other groups ($p < 0.05$).

The results of the student evaluations of teaching in the different courses are presented in **Figure 2**. In considering these data, caution should be exercised, because of the low rate of response (20% - 41%). There was no significant difference between the mean score on the evaluation surveys in the college as a whole and the mean scores for two of the courses in the years examined, based on both the F tests, which compared the scores of each course with the college-wide mean, and the ANOVA tests, which compared the evaluations of the two courses with those of the college as a whole ($p > 0.05$). However, the evaluations of teaching for the parallel

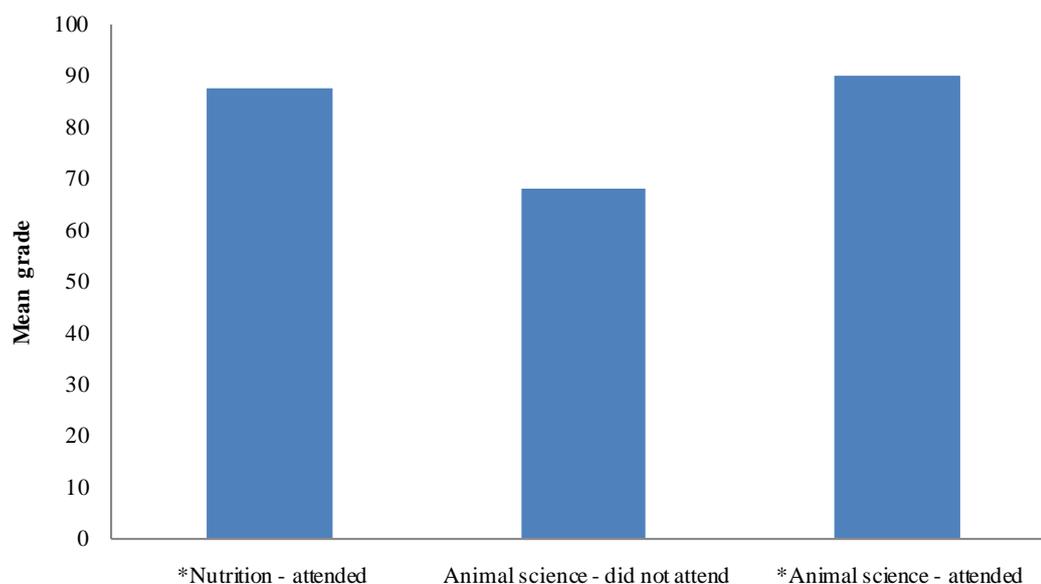


Figure 1. Mean grades of students—introduction to animal endocrinology and introduction to human endocrinology. the asterisks indicate significant differences between the means. The ANOVA test indicated a significant difference between the three groups.

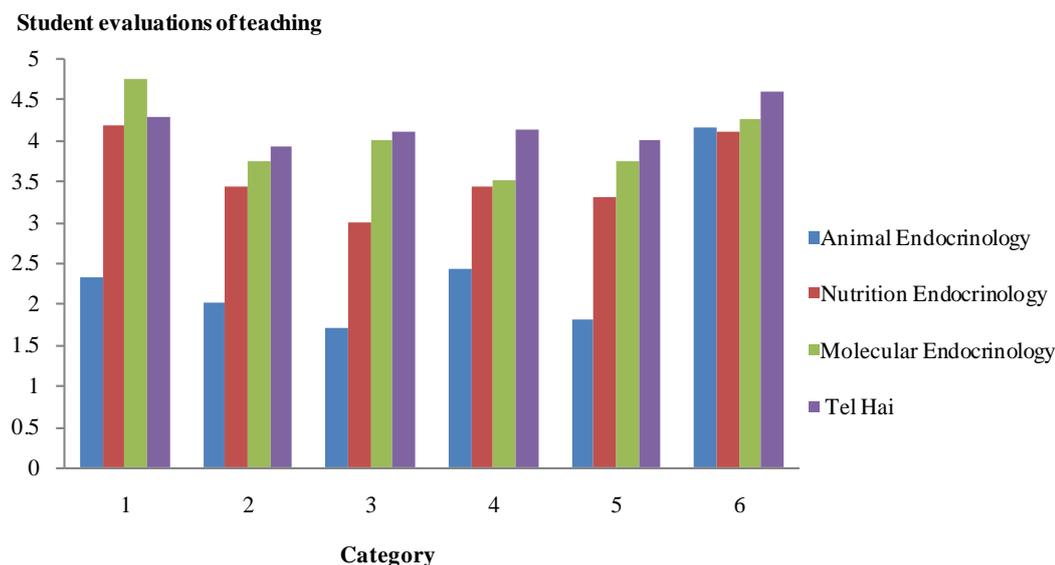


Figure 2. Student evaluations of teaching. Means of student evaluations of teaching in the three endocrinology courses compared with the college-wide means. 1 = To what extent were the course assignments consistent with the material taught? 2 = To what extent were you satisfied with the course in general? 3 = To what extent were the lecturer's explanations clear? 4 = To what extent did the lecturer organize the course? 5 = To what extent did the lecturer teach in an interesting way? 6 = To what extent did the lecturer demonstrate a good attitude to the students?.

course taught to the students of animal sciences were significantly lower than the college mean ($p < 0.05$), and differed significantly from those in the two other courses. This finding is addressed in the discussion.

No significant difference was found between the student evaluations of teaching in the two courses, Human Endocrinology (Nutrition) and Molecular Endocrinology (master's degree) ($p > 0.1$). In contrast, the evaluations of the Introduction to Animal Endocrinology course differed significantly from the college average ($p < 0.05$) and from the evaluations of the other two courses ($p < 0.05$), Human Endocrinology (Nutrition) and Molecular Endocrinology (master's degree).

4. Discussion

The results of this research indicate that the students who attended lectures in the three courses—all in the same field (endocrinology) but with different focuses—earned similar grades on the course examinations. In contrast, the mean grade of the students in the Department of Animal Sciences who did not attend lectures was significantly lower in comparison to those who attended. There are several possible explanations for this finding; however, they are speculative in nature and further research on this subject is required.

The first possibility is that the students in the Department of Animal Sciences had a low level of interest in endocrinology. This explanation is supported by the low rate of students in this department that attended the lectures, relative to the students in the two other courses, Human Endocrinology in the Department of Nutritional Sciences, and Molecular Endocrinology in the master's degree program.

Another possibility, which requires examination in further research, is that the academic level of the lectures was too difficult for the students of animal sciences. Specifically, the syllabus was not limited to a description of the action of the hormone, but also included explanation of the entire mechanism, down to the molecular level. This possible explanation is not supported by the achievements of the students in the Department of Animal Sciences who attended the lectures; their grades were no lower than those of the students in other departments. This suggests that the teaching was appropriate, and those who attended the lectures achieved significantly higher grades compared with their classmates who attempted to learn the material from the online presentations alone.

Thus neither the present research nor earlier studies [1] [2] support the notion that the lecturer lacked knowledge in the subject of the course, and that this was the reason students failed to attend. The inherent problems of

student evaluations of teaching, as found in previous research [3]-[5], make it very difficult to base conclusions about teaching quality on the results of such surveys. Furthermore, in considering the student evaluations of teaching, colleges do not separate the responses of students who attended lessons from those who did not. Finally, the number of students who complete the questionnaire is generally low, and therefore it is very difficult to draw conclusions from the results.

5. Conclusions

In conclusion, the results of the student evaluations of teaching regarding the course in the Department of Nutrition and the master's degree program did not differ significantly from the college-wide mean. The question, then, is why the students in the Department of Animal Sciences are less satisfied with the parallel course taught by the same lecturer. A logical explanation is that the subject does not interest them. A large percentage of these students, compared with those in the other departments, are refrained from attending the lectures, and this may be the reason that they give it low ratings. The findings do not prove this explanation, as the evaluation survey does not differentiate between respondents who attend lectures and those who do not.

The student evaluations of teaching regarding the same course in other departments, where attendance rates were higher, which did not differ from the mean ratings in the college as a whole, also suggest that the ratings in the Department of Animal Sciences might be associated with the low rate of students who attended the lectures. To sum up, the results of the present research support the findings presented in previous literature (Hativa, 2008, 2016), that student evaluations of teaching examine student satisfaction and interest in the course, which is associated with the student's academic level and investment in studying. The research also supports the findings of studies conducted at Tel Aviv University, that student evaluations of teaching do not indicate the actual quality of a lecturer's teaching [3] [4].

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