

## Improving Student Evaluations by Demonstrating Concern for Students

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### Abstract

With regards to tenure, newly-minted professors normally must focus on two main areas: research and teaching. While history has provided useful metrics to evaluate research (refereed journal publications, funded proposals, theses advised, etc), proper assessment of teaching is more elusive. For example, many institutions use some sort of quantitative student evaluation at the end of the semester for a course instructor and these values are normally a required part of a tenure dossier. However, such evaluations can be affected by things unrelated to teaching such as whether the instructor bought pizza for the class prior to administering the assessment or the physical attractiveness of the instructor. In an effort to improve student evaluations (and feedback) in a more meaningful way, the author will present several steps suggested at recent workshops and implemented over the past year by the author to demonstrate concern for students. These steps include: adding a recitation portion of a class to answer class questions and “talk” about student issues, forcing students to pick up their first exam in my office, giving the students a biography of myself and having them complete the same, taking digital photographs of all of the class members in order to learn (and remember) their names very quickly and getting intra-semester feedback. A simple assessment via the comparison of faculty evaluations pre and post-intervention (plus student comments) show improved overall scores in these areas as well as a marked improvement in the student’s opinion of the “excellence” of the instructor at teaching.

## Introduction

The tenure track period for an assistant professor is both difficult and frustrating. Difficult, in the sense that six and seven-day work weeks are the norm. Frustrating, in the sense that very often the tenure requirements are not listed anywhere but in the minds of other tenured-faculty in the form of a “profile”. At any rate the evaluation process for tenure, in a very broad sense, is based in two main areas: research and teaching, not necessarily in that order. While one can look at various metrics to evaluate progress on research (refereed journal publications, funded proposal, thesis advised, etc.), it is more ambiguous to evaluate teaching. The easiest way (and, unfortunately, the most popular) to assess teaching is to look at the student evaluations of the course instructor. Such a situation is very unsatisfying because things unrelated to teaching such as whether the instructor purchased pizza for the class on the day of the evaluations or if the professor is perceived as physically attractive [1] can affect the numerical scores on the student evaluations. While pizza or good looks might equal higher scores, it likely won't change student comments on the evaluation (and, possibly, suppress them).

Is there a way, as an instructor, to improve student evaluation scores and student comments in a meaningful way? In this work, the author will demonstrate that there is, through techniques learned at the 2002 ASEE Chemical Engineering Summer School. [2] All of the techniques used have the same basis, which is “*showing concern for your students*”. Note that this is not a new idea, but has been discussed in the past by several authors. [3] In what follows, the author will provide a before and after look at student evaluations and comments in two courses in Chemical Engineering, Introduction to Chemical Engineering Analysis (ChE 2010) and Chemical Engineering Thermodynamics II (ChE 3020).

## Course Changes

In the Spring of 2001 the author taught ChE 3020 and in the Fall of 2001 the author taught ChE 2010. During the Summer of 2002, the author attended the ASEE Chemical Engineering Summer School and adopted techniques from a variety of workshops and presentations in order to show concern for the student. The author implemented these changes in the Fall of 2002 for the ChE 2010 course and the Spring of 2003 for the ChE 3020 course. Note that the author did not teach the ChE 3020 course during the Spring of 2002.

The specific changes the author made to these courses in order to show concern for the students are as follows:

1. *Provide a biography of the instructor to the student (in the syllabus) and ask, as the first homework assignment, the same of the student. [4]*

Such an approach, right from the beginning, demonstrates in a clear way that the instructor wants to know more about the student. While most students will give back what is asked for in one paragraph, several students take this as an opportunity to reflect on their life and career choice (in five pages!). As an additional benefit, the instructor can determine from reading the biographies whether or not some situations exist in a student's life that can affect their performance in class (single parent, disability, off-campus job, etc.)

2. *Have the students pick up the first exam or first quiz by coming to your office.*

There are certain students, no matter how much you beg them about this, who will never come to your office to discuss a problem or concept they don't understand. Basically, they are intimidated to come to the professor's office. If you get them to your office under the pretense of "getting your quiz back", you can, at this point, ask them about something (in an informal way) which was contained in the biography they submitted (as opposed to the generic "How are things going?"). This will open up the lines of communication, demonstrate your concern for their well-being and, perhaps, put them more at ease in your office. The benefit is, of course, they will be more likely to come to your office to discuss things they don't understand in the course (or on other matters!) in the future.

3. *Adding in an informal, one-hour, recitation portion to the class once a week.*

Consider the recitation to be a "surge tank" in the concept delivery process. First, try and find a time that is convenient for most of the students. It is best not to ask them since you'll never please everyone – just look at the normal schedule for students in that semester and pick the most convenient hour. Next, it would be best if the recitation were on, say, the day before homework is normally due. Never introduce new material during recitation since it is not a "scheduled" course. Rather, make it a place where students self-select about attending and can leave at any point. This provides ample opportunity for those who need to can work on the board to show you where their conceptual errors are. While this can sometimes be done during the actual class, what happens is that those who know what they are doing will tune out this 5 (or 20) minute diversion. Thus, the recitation provides "extra time" for those students who need it. Since you won't be covering any new material, you can easily digress into other areas (not course-related). The author has often used this "focused-group" to discuss, in an informal-setting, curricular issues, student concerns, etc. Such an endeavor often leaves students with the impression that "their opinion matters".

4. *Taking digital photographs of the students.*

Some instructors can remember names quickly, while it takes others much longer. In order to facilitate this process, take a digital photograph of your students so you can quickly put a name to the face. Not remembering the name of a student quickly gives the impression that they are “just a number” while conversely using a student’s name shows them that they are important in your eyes.

5. *Get intra-semester feedback from the students on the course.*

If the end of semester student evaluations is the first time a student gets to give you feedback on your class, you have missed ample opportunities to modify the course during the semester. In some written format, be it an open-ended question or a survey, ask the students for feedback on the course during the first month. If an issue arises that you didn’t consider, you have the time to make it right in the student’s eyes and improve the course. After this occurs, the student is empowered in the idea that they have an impact on how the course is taught and that their opinions matter.

**Results**

It must be stressed at this point, prior to presenting the results, that there were no major differences in the courses pre and post implementing the five steps (re: the intervention) above with regards to pedagogy and course material. The same type, number and quality of homework and exams were given. While it is naïve to think that all of the changes in the student’s evaluations between the years are a result of an overt concern for students, it is likely that this is the primary reason.

The student’s provide end of semester evaluations on IDEA Center forms that ask 47 questions and allow a space for student comments. Of the 47, there are two questions that most closely map on to assessing the results of the intervention described in this work.

These are as follows:

**Q1:** *The instructor displayed a personal interest in students and their learning.*

**Q2:** *Overall, I rate this instructor an excellent teacher.*

The data is presented in Table 1 for both of courses, pre and post-intervention. The scores provided are means for the number of respondents with the standard deviation given parenthetically. The scale is presented in Table 2.

**Table 1: Mean scores on the relevant questions, pre-and-post intervention.**

	<b>ChE 2010 (pre) N = 21</b>	<b>ChE 2010 (post) N = 25</b>	<b>ChE 3020 (pre) N = 25</b>	<b>ChE 3020 (post) N = 15</b>
<b><i>Q1</i></b>	4.5 (0.5)	4.7 (0.6)	3.8 (1.0)	4.7 (0.5)
<b><i>Q2</i></b>	4.0 (1.0)	4.7 (0.6)	3.2 (1.0)	4.8 (0.4)

**Table 2: The scale used to evaluate Table 1.**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b><i>Q1</i></b>	Hardly Ever	Occasionally	Sometimes	Frequently	Almost Always
<b><i>Q2</i></b>	Definitely False	More False Than True	In Between	More True Than False	Definitely True

It is clear from Table 1 that, in both courses, the student's rated the author's teaching skills (Q2) at a higher level as a result of the intervention. Additionally, their impression of the author's concern for them increased in both courses, especially so in the ChE 3020 course. While such

measures provide a quantitative assessment of this intervention, it is also useful to explore the student comments that were provided for all four of these course offerings.

### **ChE 2010 (pre)**

- *“The required attendance is petty”*
- *“Blah”*
- *“I like beans!”*

### **ChE 2010 (post)**

- *“Dr. Visco deserves more credit than he gets. He is an exceptional teacher and cares tremendously for his students.”*
- *“Dr. Visco is a very good teacher. He is eager to answer questions. It is very easy to go see him.”*
- *“Dr. Visco is a very good teacher. I would recommend him to anyone.”*

### **ChE 3020 (pre)**

- *“Homework was excessive.”*
- *“WebCT is very helpful.”*
- *“Dr. Visco was apparently uninformed to the fact that this is an undergrad class and I don't have 20 hrs per week to spend on HW for this class.”*
- *“...a T.A. would be much cheaper...”*

### **ChE 3020 (post)**

- *“Dr. Visco shows how a teacher should perform his job on all levels and aspects. I just wish that there were more professors like Visco.”*
- *“Dr. Visco strives to push each student to meet their maximum potential. .Visco also actually cares about his students and their progress...which motivates as well.”*
- *“I think that I learned more in this class than any other ChE class so far. This instructor has an excellent teaching method.”*

Certainly there is a big different in the quality and tone of the comments pre and post intervention.

### **Conclusions**

In this work, a series of five steps were discussed that allows the professor to outwardly demonstrate concern for his/her students. These steps were implemented in two courses that the author taught last year and the results pre-and-post intervention was presented. Not only did the post-intervention students report that the instructor showed an improved concern for them, but their impression of the teaching “excellence” of the instructor showed a very large improvement. This quantitative result was corroborated by some student comments.

### **Bibliography**

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