

Evaluation of Teaching Effectiveness (Prof and Course Quality)

The first part of this self evaluation is a descriptive summary of my teacher quality rankings and course quality rankings. I report means, standard deviations, and histograms of the student evaluation data obtained from each university. Of my 76 courses, I have data on 44 courses (64%). One university omitted 24 evaluations with the remaining 8 missing from a combination of all other universities. I tried to compensate for the missing 24 evaluations by using excerpts of student learning comments from online classes. That information appears in the preceding text and does not influence the statistical analyses.

Lifetime Key Performance Snapshot

Instructor Quality Score	Course Quality Score	Dissertation Completion Rate	Courses Taught Total = 76	# Courses by Class Type:
90%	86%	100% (10/10)	Graduate (52) Undergrad (24)	In Person (15) Blended (42) Online (19)

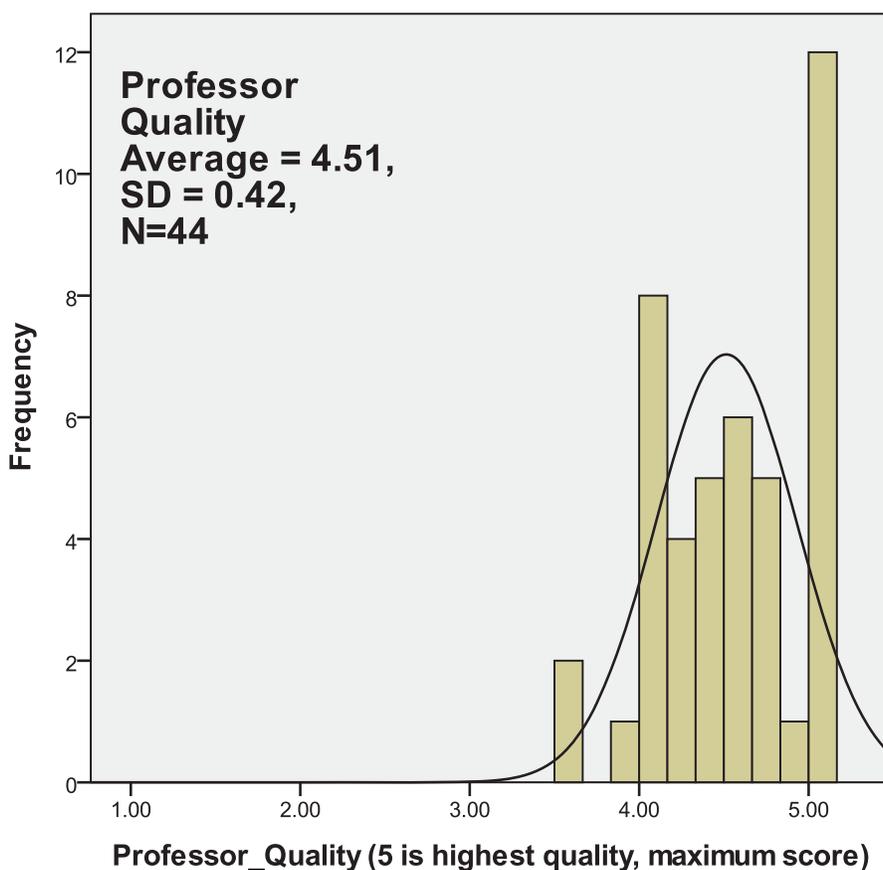


Figure 1. Professor Quality

This figure shows the variability of data around my average ranking of 4.5 out of 5. For schools using scales other than 1-5, I converted their values to a percentage and then multiplied that percent by 5 to arrive at a single standardized 1-5 point score range for all of my courses.

My conclusion is that students rate my lifetime teaching quality at 90% and that I am on the right track for improvement.

Does Course Quality differ among classroom formats? No.

A single histogram of instructor quality data is warranted because there were no significant differences between my instructor quality rankings among the class types (In Person, Blended, Online). I used a One-Way ANOVA to test for the equality of mean instructor quality scores and the analysis showed no significant differences. **My teaching quality is consistent across classroom formats.**

Does Instructor Quality differ among program types? No.

A single histogram of instructor quality data is warranted because there were no significant differences between my instructor quality rankings among the class types (PhD, MA, Undergraduate). I used a One-Way ANOVA to test for the equality of mean professor quality scores and the analysis showed no significant differences among scores across the different types of program. Even when grouping scores into graduate programs and undergraduate programs there was still no significant difference in my instructor quality. **My teaching quality is consistent across program types and student audiences.**

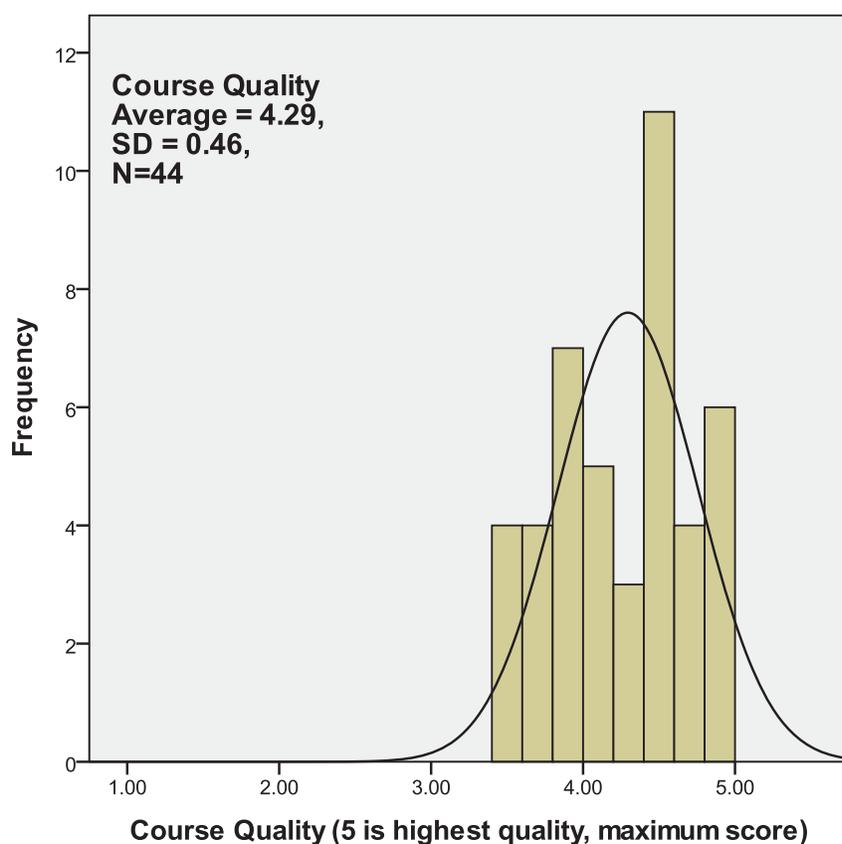


Figure 2. Course Quality

This figure shows the variability of data around my average course quality ranking of 4.29 out of 5. For schools using scales other than 1-5, I converted their values to a percentage and then multiplied that percent by 5 to arrive at a single standardized 1-5 point score range for all of my courses.

My conclusion is that students rate my lifetime course quality at 86% and

that I can do more with class content and design than with overall instructor quality.

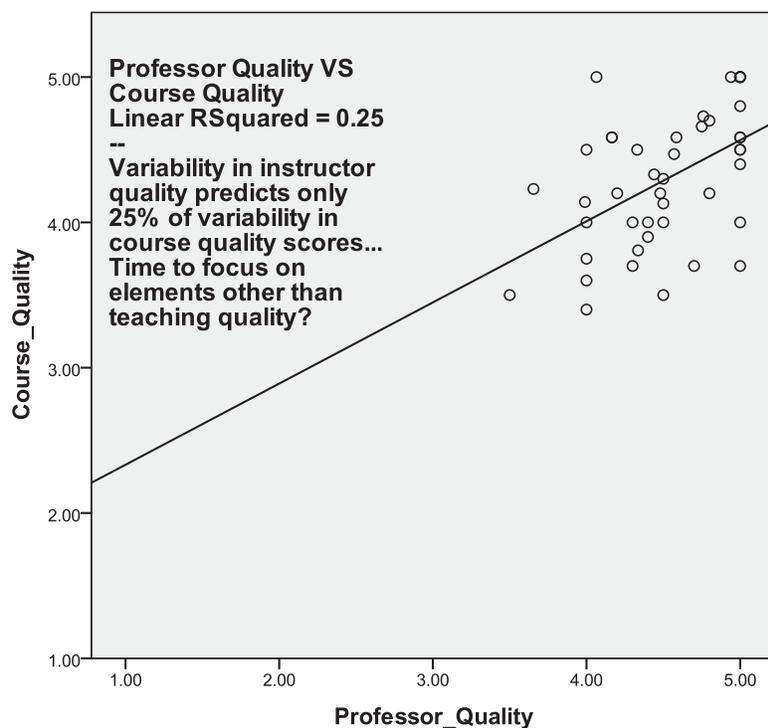
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Figure 3. The Relationship Between Instructor Quality and Course Quality



To understand the potential relationship between students rankings of my teaching quality and their overall impression of the class (course quality), I performed a regression analysis to provide the correlation ($r=0.50$, $p<0.001$) between those quality measures and then to see how well I can predict course quality assessment based on instructor quality scores. 75% of the variability in course quality scores is unexplained, leading me to believe that it is time for me to focus on course content and design elements. **Can I**

tighten the relationships between instructor and course ratings and efficacy?

Figure 3 provides another view of my instructor and course quality rankings and the good news is that the points cluster in the higher ranges of quality on both scales. This is just another view of the data presented in the snapshots and histograms, but it also leads to two additional questions.

The first question is what accounts for the 75% of unexplained variability? We know that student experiences, perceptions, motivations and work efforts will play a role, but I do not think student variables are the main issue. By and large, students want to learn and want to have a good time doing so. Most enjoy a challenge and even when a course is hard, they will like it when it is also valuable. Instead, I think the main areas for improvement is actual course design. Given the high variability in course elements such as, content, assignments, assessments, interactivity, formats, presentation methods, online learning design and choice of online learning software, it is these element which stand out as being most controllable and most useful to upgrade.

The second question is how to shift both metrics up. What steps and professional opportunities would be useful to help me improve course quality (relatively more room for improvement), and then instructor quality which is already high but can still improve? Importantly, I can take steps to reduce the variability in my behavior from class to class and then see how/if this has any effect on student rankings.

Measuring Professor Quality by Student Achievement

Doctoral Student Success: The national average for doctoral student graduation seems to be around 50%, but 100% of the students I have mentored have now graduated and obtained their PhD or PhD equivalent degrees. Based on my feelings in graduate school, at least 90% of the credit goes to students and some small remaining percent can be attributed to the dissertation chairs and committee members. Students respected the amount of effort I put into guiding their research design, analysis, and editing.

Undergraduate Student Success: Very few students fail my courses and when they do, it is always for not completing the work. Anyone who completes the work, without plagiarizing, has a great chance of success and I work with struggling students to help them complete and improve papers and discussion posts. I use revision assignments to let students recoup lost points for confusing exam questions and to recoup points from incorrect statistical calculations. Research is all about running as many calculations as is required to get the right answer. Single chance testing has its place, but I prefer to use multiple chance learning to help students get in the most useful repetition and correction of the ideas. This is how we trained people for success in our research laboratories and how music teachers train their students. While this

method may seem like it gives students an easy grade that does not happen. Instead, students are hard pressed to do the work required for revisions and even with additional chances, still find some calculations and problem solving exercises to be difficult. With this approach, students know that I want them to succeed and will work to fit their learning styles and methods of demonstrating knowledge.

General Student Success: If you look across the student comments, you will see evidence of how students apply the ideas in daily life and I have received many comments. This is my favorite indication of teaching efficacy. I also work to help people overcome fears of numbers, statistics, writing, and research, and while A's and B's in these courses indicate that students are getting the ideas and are getting over their fears, I do not have a fear reduction index, nor do I have a "respect for the topic" metric. There are a great many student outcomes, including employment, application of the ideas, etc, that I would like to measure as part of both short term and longitudinal research. I would be happy to join a department that enjoys measuring student achievements and valid measures of knowledge and growth.

Web and Teaching Resources

I enjoy creating a variety of student support websites and the can all be found in these primary locations.

- 1) <http://gogeco.org/student-home/>
- 2) <http://gogeco.org/university-course-supports/>
- 3) <http://www.pearltrees.com/pag101/classes/id7566766>
- 4) Embedded information maps (mind maps) via www.mindmeister.com. I give students links to these maps during each class and allow them to collaboratively edit the content with me from time to time.
- 5) Writing support sites: <http://gogeco.org/writing-quality/> and <https://docs.google.com/spreadsheets/d/1bq7X3znT4yPbTAR-ilj1tqu3Qhk7kFdL4sWZRA6adXc/edit?usp=sharing>

I enjoy using Wordpress based websites and online collaborative software such as Google Docs and Pearltrees.com as a form of self expression and as a joint learning tool for students. As students forget a horrifying amount of the information "gained" in any program of study, I believe it is important to show them how to create electronic forms of memory and to provide websites and hyperlink collections that start that work for them. By modeling how to collect information, improve retrieval, and therefore have multiple ways to cue memory and research efficiently, I hope to show students additional methods to maximize their positive change during school and to get the maximum value from their education. These same tools also promote lifetime learning because you don't need to fear the loss of information.

Teaching Materials and Methods

Each class requires me to use a different style of teaching and a different type of materials. I have a common set that I apply or modify for each class and have started upgrading this list based on research into students' individual preferences for learning materials, study materials, and study methods. I am starting to incorporate student self-evaluation and self-report measures into each class so that I can work towards a real-time understanding of what everybody is doing and what they are achieving with those methods. I report this information to students in aggregate, anonymous format so they can understand how their peers work.

Table of Teaching Methods and Materials

Primary Teaching Methods	Top Student Learning Methods (survey results)
In-Person Classes <ol style="list-style-type: none"> 1) Personal introduction discussions 2) Socratic Lecture with Power Point Support <ol style="list-style-type: none"> a. Structured introduction for each concept b. Supplement to course readings c. Punctuated with questions and group discussion opportunities 3) Lab-style demonstrations, whole group discussions, small group discussions, and small group in-class research and report exercises (peer to peer instruction) 4) Supplementary websites, videos, on-line collaborative software 5) Individual student consultations 6) Exams (short-answer, multiple choice) 7) Papers and Power Point presentations 	<ol style="list-style-type: none"> 1) Textbook 2) Written Notes & Review 3) PowerPoint & Review thereof 4) Flash Cards 5) In-class discussions & lab-style demonstrations & in-class, small group research & presentation exercises (peer to peer) 6) Student papers & presentations 7) Videos & supplementary websites 8) Online-collaborative software: whole class logs in and enters information, seeing what each person contributes 9) Individual teacher consultations
Online Classes <ol style="list-style-type: none"> 1) Personal introduction discussions 2) Assigned readings & selected videos 3) Threaded discussions 4) Announcements & links to web resources 5) Paper, project, and presentation assignments 6) Varied assessments (writing feedback, short answer exams, multiple choice) 7) Formative evaluations sent by university 8) Conference calls as needed 9) Wikis & other collaborative software 10) My student support websites www.gogeco.org 	<ol style="list-style-type: none"> 1) Textbook & assigned readings 2) Threaded discussions 3) [I don't know what notes students take in online classes...] 4) Instructor announcements and homework guidance 5) Peer to peer instruction 6) Weekly or semester research & argumentation papers and projects 7) Youtube & other supplementary websites including the Purdue Online Writing Lab
Blended courses combine each of the above	

Conclusion

Creating this document was an epic journey and I hope you found some useful information here. It has certainly increased my motivation to teach and to find a motivated group of professionals to work with in the future.

If you have any questions or would like to see copies of syllabi, presentations, or other course materials, please let me know.

Sincerely,

Paul Greenberg

