

QUALITY OF INSTRUCTION

Perceptions of Students and Instructors at Penn State's University Park Campus



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Foreword

Penn State has a long history of supporting teaching excellence and scholarship that informs efforts to advance teaching quality. The research results reported here are another excellent example of this work and will prove to be a valuable resource for faculty, administrators, review committees, and instructional developers for years to come.

One of the most important aspects of this study is that it provides readers with a unique view of both student and faculty perceptions about the quality of instruction at Penn State's University Park campus. An oft repeated refrain from faculty is that students today are different from in the past. The results included in this report both contradict and support that claim.

There are remarkable similarities, and a few interesting differences, in student and faculty perceptions of important elements in quality teaching. One of the most important findings is that students and faculty strongly agree that instructor knowledge, organization, fairness, enthusiasm, interest, and their contributions to the classroom climate are important factors in teaching quality. Interestingly, these are also the topics that faculty most frequently ask about on the Student Ratings of Teaching Effectiveness (SRTE). In fact, this publication will be an invaluable source of additional insight for faculty as they interpret their own or others' SRTE data. For example, knowing what students view as most important may change how faculty and administrators view questions about these topics on the SRTEs.

Readers will not be surprised that faculty and students diverge most over the importance of using technology to enhance instruction. The difference may simply represent a generation gap, but the magnitude of the gap was surprising. Only 3-12% of the students felt the use of various technologies was of little or no importance. However, 20-35% of the instructors responded in this way.

Another area where faculty and students appear to diverge is in the value of practices that promote critical thinking. The percentages of students that rate critical thinking practices as important are consistently lower than faculty. This may reflect that students, particularly

in their first-year, are not exposed to critical thinking or it may mean that they do not recognize critical thinking practices when they do occur in their courses.

Faculty will probably be quite surprised that students consider incorporating group work and peer evaluation into grades to be important at higher rates than faculty. Disappointingly, both faculty and students rate many of the collaborative learning practices to be of little or no import. Given that active and collaborative learning have been overwhelmingly endorsed in the research literature as improving students' learning, we will surely want to investigate this topic further.

The importance of this report as the only current source of systematic data about faculty views of teaching quality cannot be overstated. Faculty will not be surprised that 98% of students think that student ratings should be given a great deal or some weight in evaluating teaching effectiveness. However, many faculty and administrators will be very surprised that the comparable percentage for faculty is 87%, but with the largest percent in the "some weight" category.

The results provided here may also dispel or relieve faculty concerns about student ratings. For example, the second half of the survey asked students to answer questions about a particular course. These results show that the amount of work does not appear to be related to students' course ratings. Furthermore, the results also show that perceptions of the amount learned show a strong and direct relationship to course evaluations.

Finally, many of the results presented here can be used as the basis of advice for faculty and will certainly be used to inform what kinds of resources and programming offered by the Schreyer Institute for Teaching Excellence. This will be an invaluable resource for anyone who works with faculty to improve their teaching and their students' learning.

I hope you enjoy reading this report, and get as much out of it as I did!

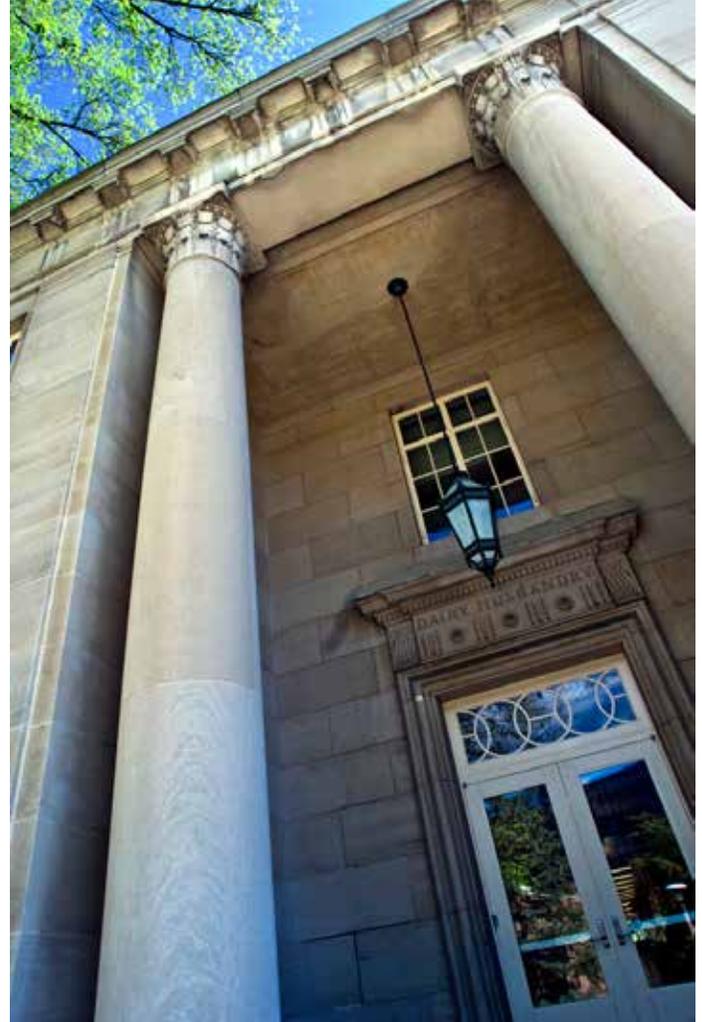
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Introduction

Undergraduate teaching is a central part of the University's mission and a major reason for the existence of the academic community that is Penn State. Students, teachers, administrators, and the public are all interested in maintaining and enhancing the quality of instruction. To that end, a wide range of activities are, and historically have been, directed to this goal. Workshops, newsletters, seminars, mentoring programs, and formal instruction offered by the University through the Schreyer Institute for Excellence in Teaching and Teaching and Learning with Technology, as well as other venues, seek to provide information and guidance in the most effective methods of instruction as well as the use of new and emerging technologies. Informal "bag lunches" and discussion groups, organized by colleges, departments, and interested faculty provide direction and advice to novice and experienced peers.

How "good" is the teaching of undergraduates at Penn State? While student evaluations of teaching effectiveness are sought for individual courses/instructors, there has been little effort to consider the overall quality of instruction at the University as a whole, and to explore the factors associated with positive outcomes. An exception to this generalization is a study conducted in 1996 which surveyed undergraduate students and instructors at Penn State's University Park campus, concerning the relevance of various pedagogical practices for instructional quality, and student evaluations of the teaching quality on campus.

In the years since that assessment, much has occurred. The University has grown in size, complexity, and diversity, with changes in the composition of the student population, a burgeoning array of new courses/programs, the development of new teaching styles, widespread technological advancements, a greater number of part-time and temporary instructors, and increasing emphases on the engagement of the academy in issues in the larger society. In this environment, it is important to re-examine the findings of the previous study.



Purpose of the of the Analysis

Drawing upon new data obtained from surveys of students and instructors at the University Park Campus of Penn State carried out in 2011, this report addresses the following research questions:

- What are the elements that students and instructors believe are most important to achieving quality teaching?
- How frequently do these occur in University Park classrooms today?
- How do University Park students rate the quality of the instruction they receive?
- What factors influence students' ratings of teaching quality in a course?
- How have the perceptions of students and instructors changed since the 1996 survey?

The Data

Surveys of students and instructors, carried out during spring semester 2011 provided data for this analysis. For the student survey, 7,500 undergraduates enrolled at University Park during both fall semester 2010 and spring semester 2011 were chosen at random from the 31,103 individuals meeting these criteria. Thus, all of the targeted students had at least one semester of college experience from which to develop their opinions about factors contributing to teaching quality. These students were contacted early in spring semester 2011 using their Access Account email addresses and invited to participate in an online survey dealing with their perceptions of instructional quality. Three subsequent email reminders were sent at approximately one week intervals to encourage response. A total of 219 had changed status between the time of initial selection and data collection, and were excluded from the sample. Of the remaining 7,281 students, 1,837 completed the survey – a 25% response rate. Respondents differed from the relevant student population in regard to the distributions of gender and class standing. Women and freshmen were over represented in the sample data; males and seniors were underrepresented¹ (Table 1. All tables are in the Appendix)

1 The analysis reported here was also carried out using weighted data to adjust for sample bias in regard to these factors. The findings from this latter analysis did not differ in any substantive way from that reported here which used unweighted data.

Also during spring semester 2011, all instructors who had taught one or more course at University Park during the fall semester 2010 were invited to participate in a similar survey. Included were faculty members of varying ranks, staff, and graduate students serving as instructors or teaching assistants. The protocol for soliciting participants was identical to that used in the student study. All instructors were invited via email to participate, with reminders sent to those who had not completed the survey. Of the 3,953 instructors asked to participate, 1,537 did so – a 39% response rate.² Of the total, 80% of the instructors were faculty or staff members; 20% were graduate students/teaching assistants. Analyses to address each of the above research questions are considered in this report.

Perceptions of Instructors and Students Concerning the Importance of Various Elements for Teaching Quality

Included in both the student and instructor surveys was a list of 39 teaching practices and behaviors indicative of instructional quality. The listing included items drawn from course evaluation forms from other institutions and those utilized in the 1996 study of students and instructors at University Park. Additional items, including those dealing with collaborative learning and instructional technology – aspects of pedagogy that have come into common use in the last decade – were included in the 2011 study.

Both students and instructors were asked to indicate how “important” each of the 39 practices was in determining the quality of instruction of college teaching. Importance was measured on a scale of 1 to 5, where 1 meant “not important” and 5 was “very important.” For this analysis, codes 4 and 5 were combined to represent a response of “important,” with codes 1 and 2 meaning “little or no importance.” The response patterns of students and instructors to each of the 39 items were compared and the differences tested for statistical significance (Table 2). Unless otherwise indicated, only those differences significant at the .05 level are described. Factor analysis suggested the items could be interpreted when clustered to describe elements of the following eight dimensions or factors.

2 It was not possible to assess the representativeness of the instructor sample, since comparable information on relevant characteristic included in the sample data were not available in the Data Warehouse.



- Instructor is ***Knowledgeable/Prepared***
- Instructor is ***Clear/Understandable***
- Instructor is ***Fair***
- Instructor is ***Enthusiastic and Interested*** in teaching
- Instructor promotes a ***Positive Social Atmosphere*** in the class
- Instructor promotes ***Critical Thinking***
- Instructor uses ***Technology*** for teaching
- Instructor uses ***Collaborative Learning*** techniques

Knowledgeable/Prepared

Instructor's knowledge of the subject matter and preparedness to present that knowledge to students would appear to be the most basic attributes for an instructor. Five items assessed the perceived importance of the instructor being organized and knowledgeable in presenting the course material:

- Instructor demonstrates a thorough knowledge of the subject matter.
- Instructor is well prepared.
- Presentation of material is well organized.
- The course content is well developed.
- Instructor uses class time wisely.

These practices were viewed as important elements of quality teaching by the overwhelming majority of both students and instructors. More than nine of every ten respondents in both groups endorsed the importance of the instructor demonstrating knowledge of the subject matter and presenting it in a well-organized fashion.

- There was no difference in the proportion of students and instructors (95%) reporting that it was important for the instructor to demonstrate a thorough knowledge of the subject matter;
- Instructors were significantly more likely than students (97% vs. 93%) to feel it was important for the instructor to be well prepared
- 91% of students and 93% of instructors indicated it was important for the instructor to present materials in a well-organized fashion – a difference that was not statistically significant.
- Students (88%) in the sample were slightly less likely than instructors (91%) to endorse the importance of well-developed course content, but this difference was not significant.
- Slightly smaller percentages felt that it was important to use class time wisely, with 85% of students and 88% of instructors responding in this way.

Clear/Understandable

If one is to teach, it would seem that the ideas being conveyed must be clear and understandable. Three items asked about the importance of the instructor being clear//understandable in his/her presentation:

- Instructor makes the subject matter understandable.
- Instructor explains material clearly.
- Instructor provides various ideas with clarity.

Both students and instructors in the survey concurred with the importance of this ideas, with 90% or more of both groups indicating that each of the three items dealing with clarity were important to instructional quality. However, the differences between students and instructors in their responses, while not great, showed that instructors were somewhat more likely than students to feel that these elements were important to quality teaching.

- 93% of the students and 97% of the instructors judged both “Instructor makes the subject matter understandable” and “Instructor explains material clearly” as important elements of quality of instruction. Virtually no one (fewer than 2% of the students and less than 1% of the instructors) reported that either of these items was of little or no importance (ratings of 1 or 2).

- 90% of the students and 93% of the instructors reported that “providing various ideas with clarity” was important; less than 1% of the instructors and 2% of the students reported this was of little or no importance

Fair

Fairness would be expected to be a critical element in quality teaching. Evaluation of student performance is part of the instructor’s role. Grades have become markers for assessing knowledge and can have long-range implications for students as they move forward. The importance of instructor fairness in a course was addressed by asking each respondent to indicate how important it was for each of the following to occur:

- Methods of evaluating student work are fair.
- Instructor is impartial in assigning grades.
- Grades are based on students’ understanding of the materials stressed in the course.
- Instructor clearly defined student responsibilities in the course.
- Feedback on exams and other graded material is valuable.

As anticipated, for both students and instructors, fairness on the part of the instructor was seen as an important element in quality teaching. However, instructors were somewhat more likely than students to report it was important to be impartial in assigning grades and to use methods of evaluation that were fair.

- 91% of students and 93% of instructors reported it was important that methods used for evaluating student work were fair – a statistically significant difference.
- However, “fairness” was not necessarily seen as simply “impartiality” in assigning grades, especially by students. Although 92% of the instructors indicated that such impartiality was important, just 83% of the students responded in this way.
- Asked about the importance of grades being based on student’s understanding of the materials stressed in a course, approximately 87% of both students and instructors reported this was important.
- Nearly 90% of both students and instructors reported that it was important for the instructor to clearly define student responsibilities in a course and to provide valuable feedback on exams and other graded material.

Enthusiastic/Interested

To assess the importance given to having a teacher who is enthusiastic and interested in teaching, six items were included on the survey:

- Instructor seems to enjoy teaching.
- Instructor is enthusiastic about teaching the course.
- Instructor is genuinely interested in the subject matter.
- Instructor has a genuine interest in students as individuals.
- Instructor makes material interesting.
- Instructor demonstrates the importance of the subject matter.

Both instructors and students supported the idea that the quality of instruction is enhanced if instructors are enthusiastic, interested in the subject matter and enjoy the task of teaching. Instructors were somewhat more likely than students to report that enthusiasm, making the material interesting and underscoring the importance of the course material were important.

- Approximately 85% of both students and instructors reported it was important for an instructor to enjoy teaching.
- Although both students and instructors overwhelmingly felt that enthusiasm about teaching the course was important, instructors were somewhat more likely than students to endorse this idea (91% for students vs. 95% for instructors).
- 89% of both groups felt it was important for the instructor to be interested in the subject matter.
- However, only about 75% of both instructors and students felt it was important to have a genuine interest in students as individuals
- Instructors were more likely than students (89% vs. 80%) to feel that it was important for the instructor to demonstrate the importance of the subject matter, and to make the material interesting (86% vs. 83%).

Positive Social Atmosphere

How important to quality education is a friendly, positive relationship between instructor and student both in and outside the classroom? Five items asked about the importance of maintaining a positive social atmosphere in the class:

- Instructor is accepting of students from different backgrounds.
- Instructor is sensitive to the diverse needs and interests of students.
- Instructor is accessible to students outside class.
- Instructor is easy to talk to.
- Instructor maintains a classroom atmosphere conducive to learning.

Although all of these items were endorsed by large percentages of both students and instructors as being important, there were significant student-instructor differences in their responses.

- Instructors were more likely than students to report that it was important for the instructor to be accepting of students from different backgrounds (90% vs. 85%), sensitive to the diverse needs and interests of students (81% vs. 74%), and accessible outside class (79% vs. 75%).
- Conversely, instructors were less likely than students to report that it was important for the instructor to be easy to talk to (71% vs. 82%), while 3% of the students and 5% of the instructors reported this was of little or no importance.
- 94% of the instructors and 87% of the students in the surveys reported that it was important for the instructor to maintain a classroom atmosphere conducive to learning. Only about 1% of both groups felt this was of little or no importance.

Critical Thinking

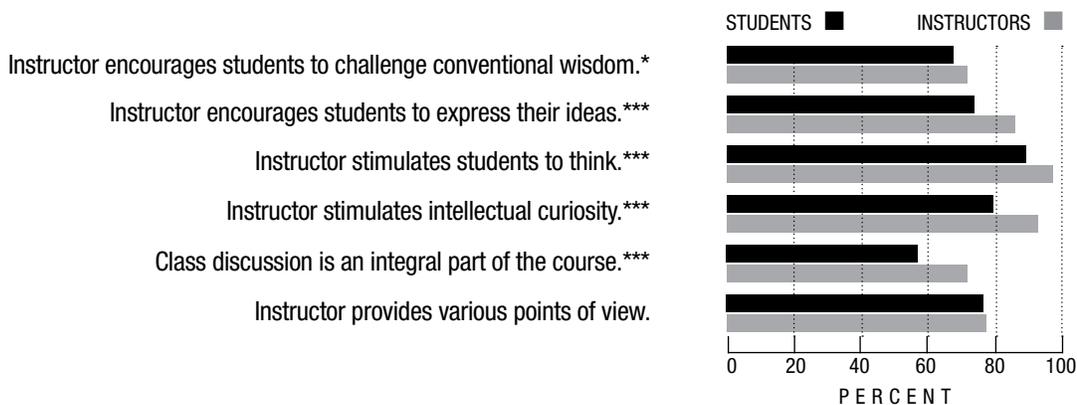
A university education implies more than the acquisition of specific information. It also implies learning critical thinking skills. How important do students and instructors feel it is for teachers to utilize instructional elements in the classroom that focus on developing critical thinking? Six items on the surveys addressed this question.

- Instructor encourages students to challenge conventional wisdom.
- Instructor encourages students to express their ideas.
- Instructor stimulates students to think.
- Instructor stimulates intellectual curiosity.
- Class discussion is an integral part of the course.
- Instructor provides various points of view.

The majority of both students and instructors felt these behaviors were important, but instructors were significantly more likely than students to endorse the importance of five of the items. For the sixth item (instructor presenting various points of view) there was little difference between student and instructor responses.

- Instructors were more likely than students to deem as important encouraging students to challenge conventional wisdom (72% vs. 68%); 7% of both groups reported this was of little or no importance.

Percentages of students and instructors rating as “Important” practices related to Critical Thinking.



* Statistically significant at .05 level

*** Statistically significant at .001 level

- 86% of the instructors but just 74% of students felt it was important to encourage students to express their ideas; 6% of the students and 3% of the instructors indicated this was of little or no importance
- Instructors (98%) were more likely than students (90%) to report that it is important for instructors to stimulate students to think, and to stimulate their intellectual curiosity (93% for instructors, 80% for students).
- 72% of instructors but only 57% of the students felt it was important for class discussion to be an integral part of a course, while 12% of the students and 7% of the instructors felt this was of little or no importance.
- Students (78%) and instructors (77%) did not differ significantly in their likelihood of rating as important the presentation of various points of view (5% of both groups felt it was of little or no importance).

Technology

Technology has transformed many aspects of college teaching – both in and out of the classroom. The survey asked four questions dealing with the importance of the use of technology for enhancing the quality of instruction at the university.

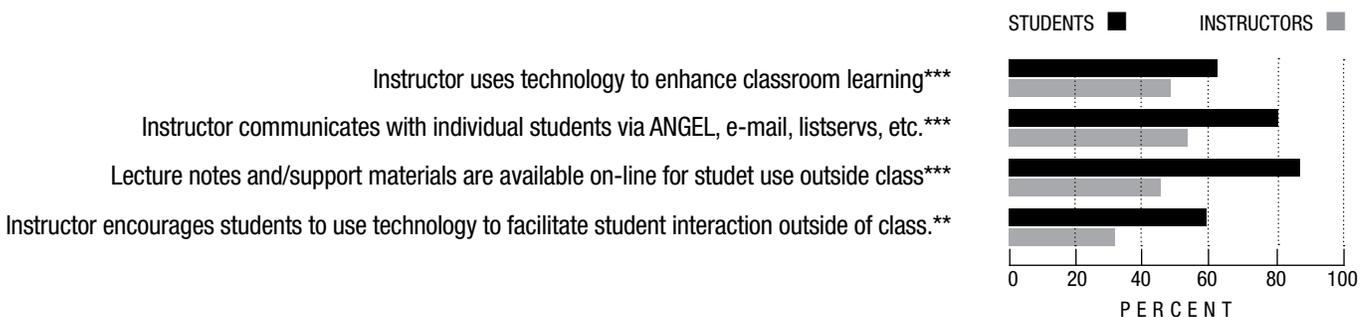
- Instructor uses technology to enhance classroom learning.
- Instructor communicates with individual students via ANGEL, e-mail, listserves, etc. outside of class.

- Lecture notes and/or support materials are available on-line for student use outside of class.
- Instructor encourages students to use technology to facilitate student interaction outside of class.

In response to each of these questions, students were much more likely than instructors to report that technology use was important for the quality of instruction they received.

- 48% of the instructors, but 63% of the students reported it was important for the instructor to use technology to enhance classroom learning; 12% of the students and 20% of the instructors felt this was of little or no importance.
- Just over half (54%) of the instructors compared with 81% of the students indicated it was important for instructors to communicate with individual students via ANGEL, e-mail, listserv, etc. Only 5% of the students, compared to 20% of the instructors felt this was of little or no importance.
- 46% of the instructors, but 87% of the students felt it was important to provide lecture notes and/or support materials on-line for student use. Just 3% of the students but 28% of the instructors felt this was not important
- Less than a third of the instructors surveyed rated the use of technology as important to facilitate student interaction outside of class (32%); 59% of the students rated this as important. Moreover, 35% of the instructors and 12% of the students reported this was of little or no importance.

Percentages of students and instructors rating as “Important” practices related to Use of Technology.



** Statistically significant at .01 level

*** Statistically significant at .001 level

Collaborative Learning

In recent years, there has been increasing discourse on the importance of engaging students in the learning process, not only by requiring their participation in group activities, but also in course planning, grading, and goal setting. Students and instructors were asked to report how important each of five elements were in contributing to quality teaching:

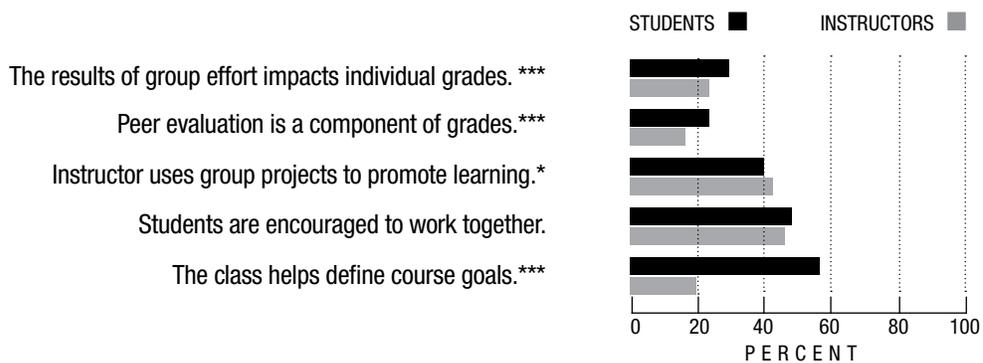
- The results of group effort impact individual grades.
- Peer evaluation is a component of grades.
- Instructor uses group projects to promote learning.
- Students are encouraged to work together.
- The class helps define course goals.

Overall support for the importance of most of these activities was low among both instructors and students, although students were more supportive than instructors for several elements.

- 30% of the students, compared with 24% of the instructors, felt it was important that the results of group efforts impact individual grades; 42% of both groups reported this was of little or no importance.
- 24% of the students, but only 17% of instructors believed it was important for peer evaluation by students to be a grade component; 50% of the students and 54% of the instructors rated this as of little or no importance.



Percentages of students and instructors rating as “Important” practices related to Collaborative Learning.



* Statistically significant at .05 level
 *** Statistically significant at .001 level

- 40% of the students and 43% of the instructors reported it was important to use group projects to promote collaborative learning.
- Instructors (46%) and students (48%) did not differ significantly in their views of the importance of students being encouraged to work together.
- 57% of the students felt it was important for the class to help define course goals; only 20% of the instructors did; 15% of the students and 49% of the instructors saw this as of little or no importance.

Applied Learning and Study Abroad

In addition to the pedagogical practices suggested as possible elements of quality teaching, two questions on the surveys asked how important it was for students to be required to participate in extra-classroom learning through internships or volunteer work and how important it was to require as part of their degree programs that they study abroad or participate in other international experiences. Although both students and instructors were more inclined to support internships/volunteer work than international experiences, there were differences in the response patterns of students and instructors.

- Students (56%) were more likely than instructors (47%) to report that, as part of their degree programs, they should be required to apply their learning through internships or volunteer activities.
- Instructors (36%) were more likely than students (31%) to report that it was important for students to be required to study abroad or to engage in other international activities as part of their degree programs.

Summary and Discussion

In today's environment, students and instructors alike face a rapidly changing learning environment. Widespread use of technology, diverse and innovative teaching styles, and unique classroom experiences both supplement and challenge traditional instructional methods. Some have argued that in higher education the notion of the instructor as a "sage on the stage"³ is (and should be) replaced by a "guide on the side" who



strives to build the students' lifelong learning capacity. In such a setting, the definition of what constitutes quality instruction at the college level changes, and may be more complex as students and instructors bring different experiences and expectations to the learning process.

For many key elements, students and instructors were in agreement on their importance. Thus, both groups overwhelmingly emphasized the importance of clarity in presentations, knowledge of subject matter, preparation and organization, fairness in evaluating student work, and instructor enthusiasm about teaching the course. These elements are the cornerstones of pedagogy, and students and instructors alike see them as such. These conditions will need to remain at the forefront of the college learning environment and quality teaching efforts. What may be different and changing is how to accomplish these common pedagogical goals.

Also important were the dimensions where instructors and students differed in their opinions.

Among the largest such differences were those related to the use of technology. Students were much more likely than instructors to feel technology usage was important for instructor-to-student communication outside of class, for enhancing learning in the classroom, and for facilitating student interaction outside class. Students were also much more likely than instructors to report they felt it was important students to contribute to defining course goals – something that less than one in five instructors indicated was important

The area of critical thinking and inquiry also showed notable student-instructor differences. Al-

³ King, A. (1993). "From Sage on the Stage to Guide on the Side." *College Teaching* 41(1): 30-35.

though a majority of both students and teachers felt that developing critical thinking skills was important, instructors were significantly more likely than students to assign importance to stimulating intellectual curiosity, encouraging students to express their ideas, and including class discussion as an integral part of the course. This suggests that, while students viewed expertise and interaction with instructors as important, they were also somewhat less likely than instructors to believe that going beyond the course materials to dissect and critically examine the ideas were important components of instructional quality. There was also little support among either students or instructors for the importance of collaborative learning practices. However, students desired technological benefits associated with their courses (lecture notes posted online, and communication linkages with the instructor and classmates outside the classroom setting). The use of these technologies may contribute to the development of a passive learning environment in which students seek easy and conventional answers. If so, this, partnered with lower levels of emphasis on critical thinking skills and little value given to engagement in collaborative work, could leave students ill prepared for the challenges they will face in the future. Instructors may want to consider these conditions as they organize course activities and materials, inside and outside the classroom.

Students' Views of Instructors' Use of Specific Elements of Quality Teaching

At Penn State, as at most colleges and universities, students are asked to provide an overall evaluation of the quality of instruction they receive in each of the courses in which they were enrolled during the semester. This student rating of teaching effectiveness provides a convenient index administrators can use in evaluating instructor performance and may enter into the judgments of peers and students concerning the quality of instructors and classes. However, such overall evaluations fail to capture the extent to which specific practices occur in the teaching/learning situation. How often do instructors actually engage in actions and policies that are deemed by students (and instructors) to be components of quality teaching? The answer to this question can have both diagnostic and prescriptive value in fostering quality instruction.

To determine the extent to which the above elements were exhibited in their courses, students were asked how frequently the instructor in a randomly selected course in which they had been enrolled during the previous (Fall 2010) semester engaged in each of these actions. Selection of the course to be evaluated was done by asking each student to list all of the classes in which he/she had been enrolled the previous semester. One of these was then randomly selected by the survey software. Online courses were omitted from the current analysis both because the number of such classes evaluated by the student respondents was small and because it was anticipated that differing modes of instruction would be relevant in that setting. This reduced the analysis sample to 1785 cases.

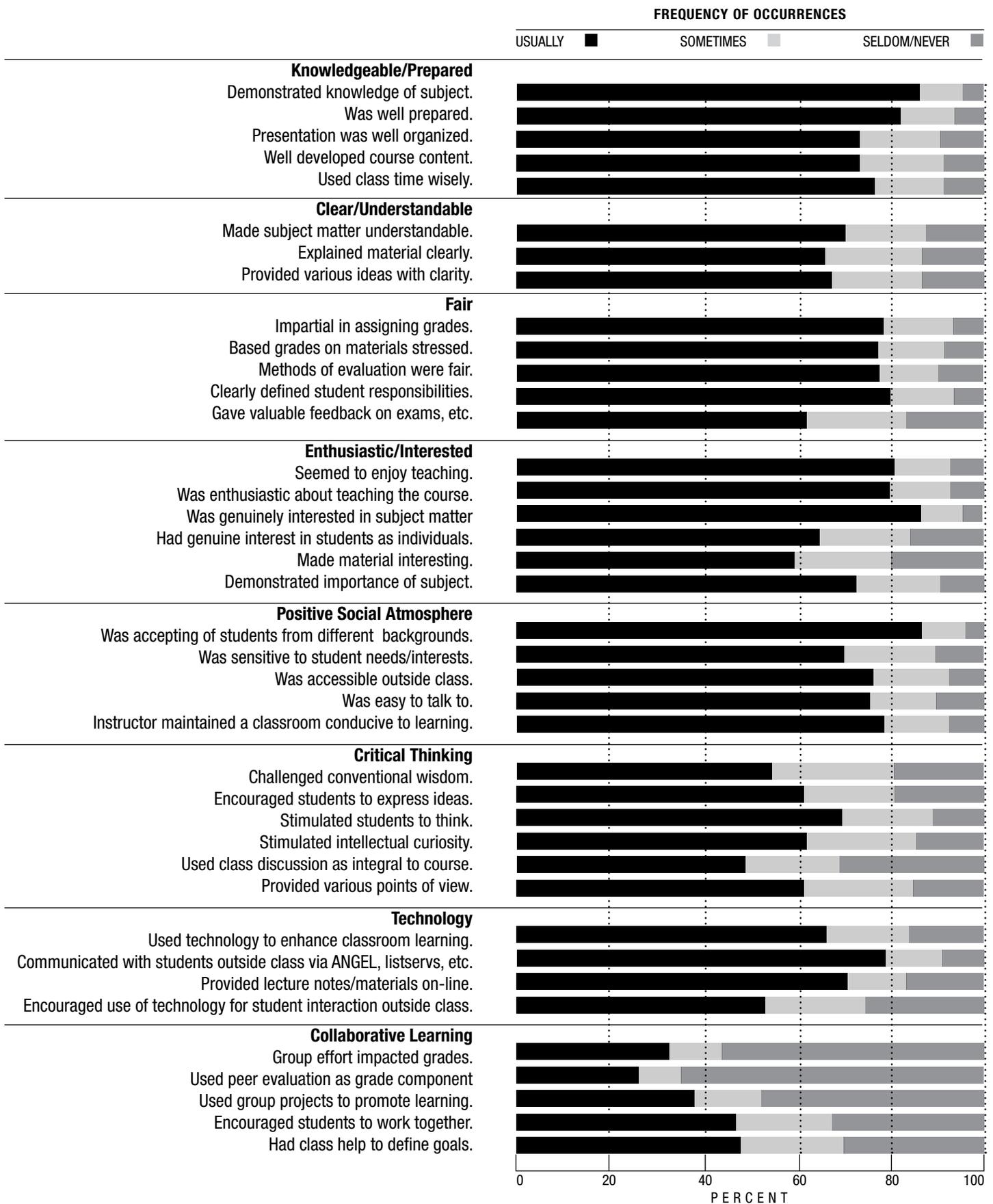
Respondents were asked to report the frequency of occurrence of each of the 39 practices in the selected course on a scale from 1 to 5. Scores of 4 or 5 on the rating scale, were interpreted as indicating the behavior occurred "usually" in the class; ratings of 3 were taken to mean "sometimes;" while ratings of 1 or 2 were interpreted as meaning the behavior occurred "seldom or never." The percentages of students reporting how often each of these elements occurred in the course were compiled (Table 3).

The Instructor was Knowledgeable/Prepared

More than 7 of 10 students reported their instructor in the evaluated course was knowledgeable, prepared, and organized in presenting the course material.

- 86% of the students responded that the instructor in the course usually demonstrated thorough knowledge of the subject matter; only 4% reported this seldom or never was the case.
- 82% answered the instructor was usually well prepared; 6% responded this was seldom or never true.
- 74% felt the presentation of material was usually well organized; 9% responded this seldom or never occurred.
- 73% reported the course content was usually well developed; 9% indicated this was seldom or never the case.
- 77% felt the instructor usually used class time wisely; 9% said such usage happened seldom or never.

Percentages of students reporting various frequencies of occurrence of specific pedagogical practices



The Instructor was Clear/Understandable

Most students indicated the instructor in their evaluated course was clear in his/her presentations; but more than 1 in 8 felt this seldom or never occurred.

- 70% indicated the instructor usually made the subject matter understandable; 13% said this was true seldom or never, with the remainder (17%) reporting this occurred only sometimes.
- 66% felt the instructor explained material clearly at least usually; 13% said this seldom or never occurred.
- More than two-thirds (68%) reported the instructor usually presented various ideas with clarity; 13% indicated this was seldom or never true.

The Instructor was Fair

More than three-fourths of the students reported their instructor was usually fair in arriving at grades. However, they were somewhat less inclined to report that instructor feedback on assignments was valuable.

- 79% of the students indicated the instructor usually was impartial in assigning grades; 7% said this seldom or never happened.
- 77% reported grades were based on students' understanding of the materials stressed in the course; 8% reported this seldom or never was the case.
- 78% indicated that methods of evaluating work were usually fair; 10% said this seldom or never was the case.
- 80% felt the instructor usually clearly defined student responsibilities in the course; 6% reported this seldom or never occurred.
- Only 62% indicated that feedback on exams and other graded material was usually helpful; 17% reported that was seldom or never true.

The Instructor was Enthusiastic/ Interested

Students were likely to report that their instructors were usually enthusiastic, seemed to enjoy teaching, and were interested in the subject matter. However students were less likely to report their instructors usually demonstrated the importance of the subject matter, were interested in students as individuals, and made the material interesting.

- 81% of the students indicated the instructor usually seemed to enjoy teaching; 7% said this occurred seldom or never.

- 80% said the instructor usually was enthusiastic about teaching the course; 7% reported this was seldom or never the case.
- 87% of the students reported the instructor usually showed genuine interest in the subject matter; only 4% did so seldom or never.
- Just 65% reported the instructor demonstrated a genuine interest in students as individuals, while 16% saw this as happening seldom or never.
- 60% reported the instructor usually made the material interesting, but one in five (20%) said this seldom or never occurred.
- 73% felt the instructor demonstrated the importance of the subject matter; 9% indicated this occurred seldom or never.

The Instructor Developed a Positive Classroom Atmosphere

Maintaining a positive and accepting social climate is generally viewed as conducive to learning.

More than three-quarters of the students reported that the instructor usually evidenced these affective elements, suggesting that most instructors sought to foster a positive learning environment for their students. A slightly smaller percentage indicated the instructor was sensitive to diverse student needs and interests.

- 87% of the students reported the instructor was usually accepting of students from different backgrounds; 4% felt this happened seldom or never.
- 70% indicated the instructor was usually sensitive to the diverse needs and interests of students; 10% said this seldom or never occurred.
- 76% indicated the instructor was usually accessible to students outside class; 8% reported this was seldom or never true.
- 76% felt the instructor was usually easy to talk to; 10% indicated this seldom or never occurred.
- 79% reported the instructor maintained a classroom atmosphere conducive to learning; 8% said this was seldom or never true.

The Instructor Encouraged Critical Thinking

The development of critical thinking skills implies gaining awareness of alternative perspectives, and the ability to articulate and understand varying viewpoints.

More than half of the students surveyed reported their instructor did things which encouraged critical thinking. Perhaps reflecting the constraints of some class situations (e.g. large number of student, nature of the subject matter), just under half indicated that class discussion was usually included in the course.

- 55% of the students indicated that the instructor usually encouraged students to challenge conventional wisdom, but 19% seldom or never did so.
- 62% reported the instructor usually encouraged students to express their ideas; 19% did so seldom or never.
- 70% felt the instructor usually stimulated students to think; 11% felt this seldom or never occurred.
- 62% said the instructor usually stimulated intellectual curiosity; 14% of the students said this seldom or never happened.
- 49% reported that class discussion usually was an integral part of the course; 31% indicated this was a seldom or never occurrence.
- 62% answered that the instructor usually provided various points of view; 15% reported this occurred seldom or never.

The Instructor Used Educational Technology

The use of instructional technology inside and outside the classroom to enhance student learning, has become widespread in the last decade. While many regard such usage as critical for quality instruction today, others are less certain. A majority of the students in the current study viewed technology usage as important for effective teaching. More than seven out of ten students reported the instructor posted course material online and communicated electronically with students outside of class. Moreover, nearly as many used technology in the classroom. Fewer encouraged students to use technology to interact with other students outside of class, although such communication likely occurred even without instructor encouragement.

- 66% usually used technology to enhance learning in the classroom; 16% did so seldom or never.
- 79% of the instructors communicated with individual students via ANGEL, e-mail, list serves, etc. outside of class; 9% did so seldom or never.
- 71% of the instructors usually made lecture notes

and/or other support materials available online for student use outside class. In 17% of the cases this seldom or never happened.

- 53% encouraged students to use technology to facilitate student interaction outside of class; 25% seldom or never did such encouragement

The Instructor Used Collaborative Learning

None of the collaborative learning elements included in this study were reported by a majority of the students as usually employed by their instructors. However, nearly half of the students indicated the class helped to define course goals, and encouraged students to work together.

- 33% used the results of group efforts to impact individual student's grades; 56% reported this seldom or never happened.
- 26% often used peer evaluations as a component of student grades; 65% did so seldom or never.
- 38% said the instructor used group projects to promote collaborative learning; 48% said this occurred seldom or never
- 47% indicated students were usually encouraged to work together; 33% reported this was seldom or never the case.
- 48% reported the class usually helped to define course goals; 30% reported this occurred seldom or never.

Summary and Discussion

More than seven out of every ten students reported their instructors were clear in their presentations, knowledgeable, organized, fair, and enthusiastic in their teaching. These were also among the pedagogical elements most likely to be described by both students and instructors as "important" for quality teaching. Elements related to developing critical thinking skills such as challenging conventional wisdom, providing various points of view and encouraging students to express their ideas and engage in class discussion were somewhat less frequently reported, but even here the majority of students indicated these were true of the instruction they received. Use of technology and collaborative learning (elements less likely to be viewed as important) occurred less frequently. These observations suggest that the practices defined as characteristics of quality teaching are usually present in University Park classrooms.

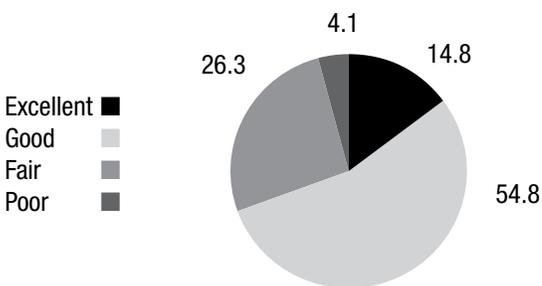
However, it is also important to note that, in a sizable minority of cases, these pedagogical elements were reported as occurring seldom or never. Thus, more than one in eight students reported the instructor seldom or never made the subject matter understandable or clear, and an even greater proportion indicated the instructor seldom or never demonstrated a genuine interest in students, stimulated intellectual curiosity, or provided various points of view. One in five said the instructor seldom or never made the material interesting.

Thus, although most instructors usually engaged in practices perceived of as important elements for quality teaching, in many cases students did not feel this was the case. Certainly the percentages of negative responses here – while clearly in the minority – underscore the need for continuing commitment on the part of the University and of individual instructors to strive to enhance teaching quality to better meet the educational mission of the University and the needs of students.

Student Ratings of Teaching Quality

In addition to describing the teaching/learning situation in regard to their perceptions of an instructor’s use of important pedagogical elements, students were asked to rate the teaching quality they had experienced at Penn State’s University Park campus. Two ratings were obtained. First, students were asked to indicate as “excellent,” “good,” “fair,” or “poor” the overall teaching quality in all courses in which they had been enrolled during the previous semester. Second, they evaluated as “excellent,” “good,” “fair” or “poor” the quality of instruction they had experienced in the randomly selected course described in the previous section.

Ratings of the overall quality of all courses taken last semester



Overall Quality of Instruction

First, students were asked to indicate as “excellent,” “good,” “fair,” or “poor” the overall teaching quality in all courses in which they had been enrolled during the previous (Fall 2010) semester.

- 70% rated their instruction either as “excellent” (15%) or “good” (55%).
- 26% reported that overall the instruction was only fair.
- Only 4% felt the teaching was poor or very poor.

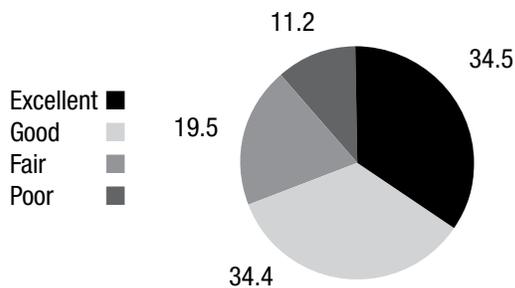
Such an overall evaluation, in which students respond to a kind of “average” of their semester classes, ignores the diversity in teaching quality they may have experienced. Further, such an assessment does not allow for more detailed evaluation of the characteristics of individual courses that contributed to these general quality ratings. More specific information focusing on student-respondent’s rating of the single (randomly selected) course described in the previous analysis was obtained.

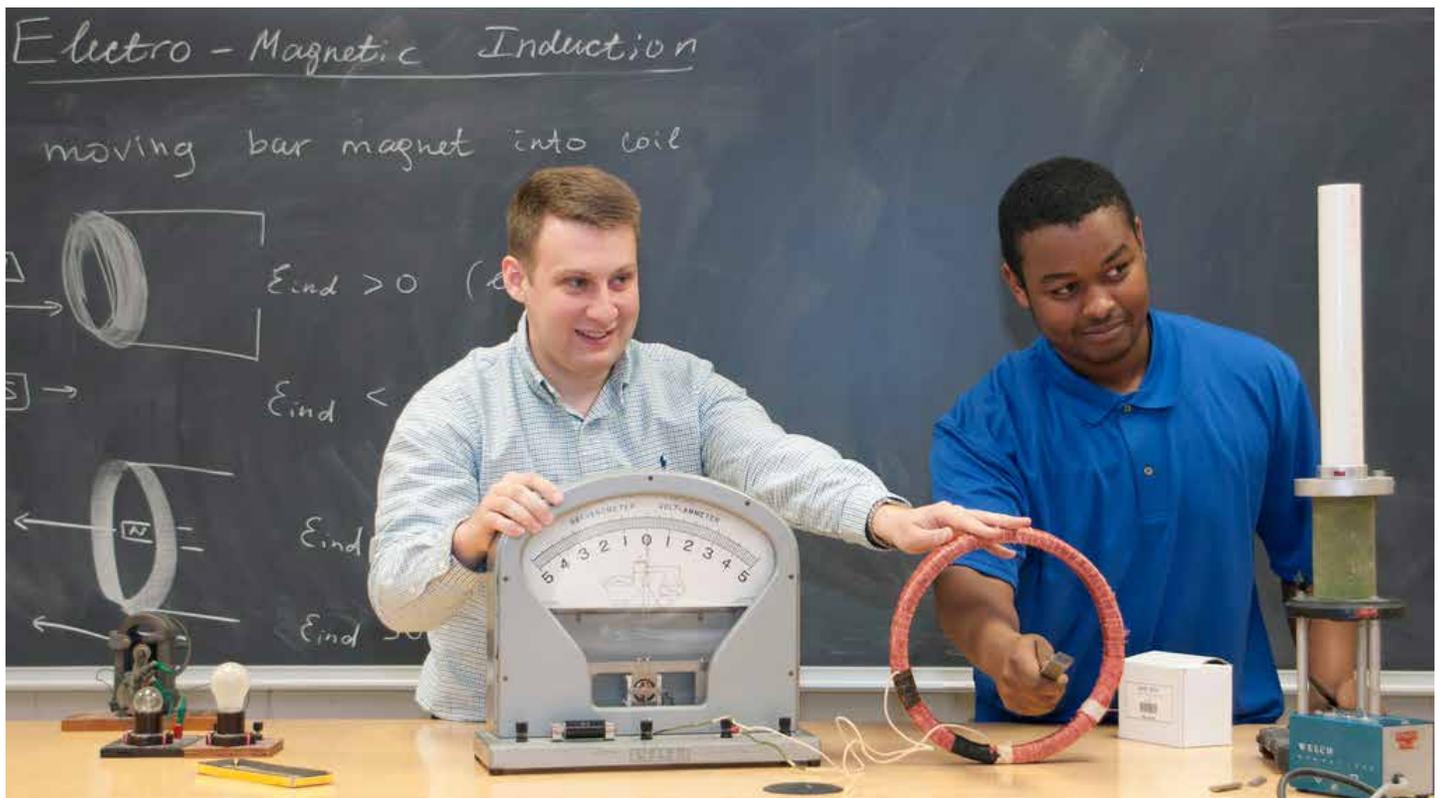
Rating a Single (Randomly Selected) Course

Asking students to evaluate the quality of instruction in individual courses is widespread in academic circles. At Penn State, administration of the Student Rating of Teaching Effectiveness (SRTE) is a routine part of ending each semester in virtually every course. Although sometimes criticized as being unreliable and incomplete indicators of teaching quality, these ratings are reported in faculty dossiers, and called into account in decisions related to salaries, tenure decisions, and academic promotions.

In the current study, 48% of the students reported that such student ratings should be given “a great deal” of weight in evaluating teaching effectiveness

Ratings of the quality of a single randomly selected course taken last semester





and an additional 50% believed they should be given at least “some” weight. Virtually none (2%) of the students reported their ratings should have little or no weight in evaluating instructor teaching performance. The views of students in this regard differed from those reported by University Park instructors surveyed during the same semester. Among instructors, only 18% felt that “a great deal” of emphasis should be given to student evaluations and 69% believed that at least “some weight” was appropriate; 13% felt that student ratings of teaching effectiveness should receive “little or no weight.”

Each student was asked to rate as “excellent,” “good,” “fair,” “poor,” or “very poor” the quality of instruction in the course drawn at random from the list of all of the courses in which they had been enrolled the previous semester and described in the previous section of this report. This procedure avoided the issue of students simply choosing to describe their “best” or “worst” experiences and provided a cross section of taught courses. Moreover, by asking for evaluation of a specific course rather than rating “overall” instruction, the likelihood that responses would reflect simple generalized stereotyping was reduced. Online courses were eliminated from this analysis. When responses were combined across the sample data, student evalu-

ations were less likely to be overly affected by a single highly positive or negative experience—a situation that could also result in coloring their overall evaluations of the semester. Asking for information from the previous semester meant that subjects had the opportunity to reflect somewhat on their experiences.

- 69% of the students rated the selected course as either “excellent;” (35%), or “good” (34%).
- 20% reported it was “fair.”
- 11% rated it as “poor” or “very poor.”

Summary and Discussion

Although student voices are clearly not the only criteria that should be invoked for evaluating the quality of instruction, they are, and should be, important considerations as instructors seek to tailor course content, pedagogy, and the learning environment to the needs and interests of a diverse and changing student population. Students feel strongly that their opinions are important and should be taken into account. However, instructors are less likely to believe that a great deal of emphasis should be given to student views. Such a response may reflect a concern that students cannot be objective in evaluating courses, that extraneous course factors or students’ personal attributes may

influence the ratings given, and/or that disgruntled students who find the material difficult or perform poorly will take out their frustrations by giving low teaching evaluations. Although such reactions can, and probably do occasionally occur, data from the current study suggest these responses are far from the norm. Understanding the basis of student ratings can help to focus attention on those circumstances and conditions that appear most relevant to student ratings of instructional quality.

Factors Related to Students' Ratings of Teaching Quality

Why do students rate some classes more positively than others? Instructors often ask this question as they seek to understand the ratings they receive. Do student ratings of teaching quality reflect the pedagogical practices of the instructor? Are they conditioned by course characteristics such as class size, the time of day the class meets, or whether the course is an elective or required of the enrollees? Do personal characteristics of the students themselves (gender, age, semester standing, etc.) impact evaluations? Does the level of work or the degree of difficulty of the material influence how courses are rated in terms of quality? The answers to these questions were explored using data from the current study.

The relationships between these various factors and student evaluations were assessed using the current data. All relationships were tested for statistical significance using contingency chi square analysis. Unless otherwise indicated only relationships found to be significant at the .05 level are discussed. To compare the strengths of these relationships, a measure of the closeness of the association (Cramér's V) was calculated in each case. Cramér's V varies from 0.00 (no association between the variables) to 1.00 (complete or perfect association). Thus, the higher the V, the stronger the relationship is between the two variables in question.

Pedagogical Methods and Course Ratings

To explore whether specific instructor behaviors or practices were associated with how students rated the quality of instruction they received, students in the sample were asked how frequently the instructor in the selected course did each of the following:

- Instructor demonstrated a thorough **knowledge** of the subject matter.

- Instructor was **well-prepared**.
- Instructor made the subject matter **understandable**.
- Instructor was **enthusiastic** about teaching the course.
- Methods of evaluating student work were **fair**.
- Instructor **stimulated students to think**.
- Instructor maintained a **classroom atmosphere** conducive to learning
- Instructor used **technology** to enhance classroom learning.
- Instructor used group projects (**collaborative activities**) to promote learning.

These items were selected from items used to represent the eight elements of pedagogy defined above and used to characterize the instructor's teaching. Although "knowledgeable" and "well-prepared" were considered as parts of the same element in the earlier analysis, they seemed to tap somewhat differed aspects of that dimension. As a result, both were included in this analysis. For each of the remaining seven elements, one general item was chosen that seemed to best represent the ideas included in the general concept or element. Frequency of occurrence was measured in each case on a scale from 1 to 5 where code 1= never and 5=always. For this analysis, codes 4 and 5 were combined as "usually," code 3 was interpreted as "sometimes", and codes 1 and 2 combined meant "seldom or never."

The more often these elements occurred in the course, the higher the student's evaluation of the quality of instruction (Table 4). Although all of these behaviors/elements were positively related to how students evaluated the course, the frequency with which the instructor "made the subject matter understandable" was the strongest determinant, followed by "stimulated students to think," "maintained a classroom atmosphere conducive to learning," and "was enthusiastic about teaching the course." Frequency of using group projects (an aspect of collaborative learning) and the use of technology were the least relevant.

- 78% of the cases where the instructor usually demonstrated a thorough knowledge of the subject matter were rated as excellent/good; just 6% rated them as poor/very poor. When such knowledge was only sometimes demonstrated, the per-

centage of excellent/good ratings dropped to 23%, and among the few students (n=78) who reported the instructor seldom or never demonstrated knowledge of the subject matter, the percentage rating the course as excellent/good was just 9%.

- 80% of those who indicated the instructor was usually well-prepared rated the course as excellent or good. That figure declined to 13% for those who reported the instructor was seldom or never well-prepared.
- 90% of those students who indicated the instructor usually made the subject matter understandable rated the class as excellent or good; only 1% rated it as poor/very poor. However, among those students who reported the instructor made the subject matter understandable only sometimes the percentage of excellent/good ratings dropped to 29%. Among those who felt it was seldom or never true, that percentage was just 8%.
- 82% of those who indicated the instructor was usually enthusiastic about teaching the course reported the course was excellent/good, only 5% rated it as poor/very poor. When enthusiasm was seldom/never present only 11% rated the course as excellent/good; 59% said it was poor/very poor.
- 81% of students reporting that the instructor was usually fair in evaluating student work rated the course as excellent/good. If fairness was seen as occurring seldom or never 17% still reported the course was excellent/good, but 57% indicated it was poor/very poor.
- 87% of those who reported the instructor usually stimulated students to think rated the course as excellent/good; only 3% felt the course was poor/very poor. In instances where students were seldom or never stimulated to think, only 11% rated the course highly; 59% gave it a poor/very poor rating.
- 83% of the students reporting the instructor usually maintained a classroom atmosphere conducive to teaching rated the course as excellent/good; when this occurred seldom/never, the corresponding percentage was 4%.
- As frequency in the use of technology to enhance classroom learning increased from seldom/never, to sometimes, to usually, the percentage of excel-



lent/good ratings increased from 43% to 58%, to 79%, with percentages of poor/very poor ratings declining from 35% to 13% to 5%.

- With increasing use of group projects to promote learning, the percentages of excellent/good ratings increased from 59% for those courses where group projects seldom or never occurred to 62% when such activities occurred sometimes, to 86% for course where such project occurred usually.

Structural Characteristics of the Course and Course Ratings

Student evaluations of the quality of a course may be influenced by factors other than the actions of the instructor. Indeed conventional wisdom often suggests that such things as the mode of instruction, class size, instructor status, and whether the class is an elective or required can influence the way students rate a course. To explore these possibilities, students were asked to respond to the following questions:

- How many students were in this course? (fewer than 20; 20-99; 100 or more)
- What was the mode of instruction? (lecture; lecture and discussion; discussion/seminar)
- Who was the major instructor? (faculty or staff; teaching assistant/graduate student;)
- How much choice did you have in deciding to take this course? (no choice/required; some choice/selected from several required; free elective)

There were statistical differences in how students rated a course in response to all of these characteristics (Table 5).

- Smaller classes tended to be more highly rated than larger ones: 80% of the classes with fewer than 20 students received excellent or good ratings and 73% of those enrolling 20–99 students, but only 62% of those with 100 or more students received excellent/good evaluations.
- Courses that combined lecture and discussions methods were the most highly rated with 81% of the students evaluating them as excellent/good, followed by discussion or seminar classes (68%), with 57% of the purely lecture classes receiving this high rating.
- Classes taught by faculty/staff members received a higher percentage of excellent/good evaluations (70%) than did those taught by teaching assistants or graduate students (63%).
- 82% of courses that were free electives were evaluated as excellent/good compared to specifically required courses (65%) or those selected from a list of required courses (75%).

Student Characteristics and Course Ratings

Differences in the quality ratings given to courses depending upon the student's gender, class standing, home residence, number of credits in which he/she was enrolled, and overall grade point average (GPA) were explored. Only class standing was significantly related to course evaluation (Table 6).

- As class standing increased from freshman to sophomore to junior to senior, the percentages of good/excellent ratings increased from 65% to 68%, to 70%, to 75%.
- Males and females did not differ significantly in how they evaluated the randomly selected course.
- The course ratings of students from Pennsylvania did not differ significantly from those coming from other states in the U.S. nor from students whose home residences lay outside the U.S.
- Semester credit load was not statistically associated with how students evaluated the selected course.
- In the sample, there was a slight relationship between all-University grade point average (reported by the students) and how they rated the quality of the instruction they received in the class, with the percentage of respondents rating the course as good/excellent increasing slightly with increasing



GPA. However, the observed relationship was weak and not statistically significant at the .05 level.

Grades, Work, Difficulty, Learning and Course Rating

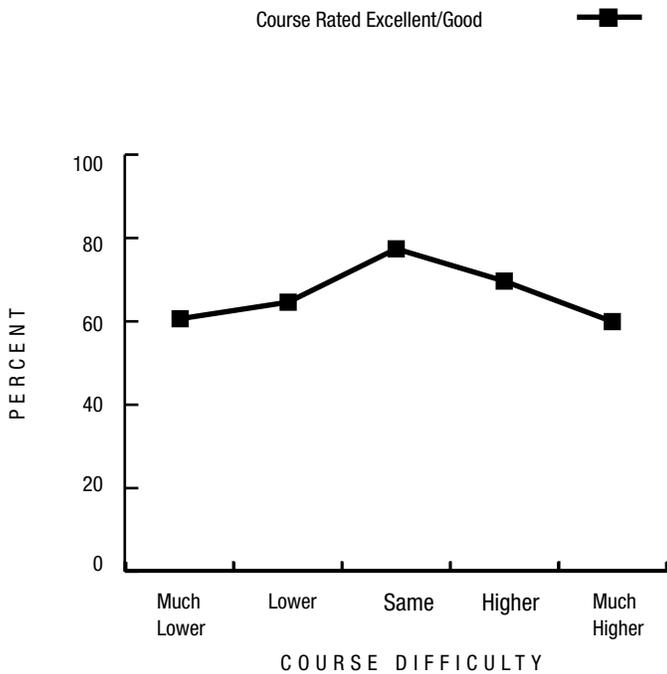
It was anticipated that student evaluations of course quality would also be influenced by outcomes and characteristics of the course itself, including the grade received, the student's perceptions of the amount of work required, the difficulty of the material, and the knowledge acquired relative to other courses the student had experienced. Grade received was reported by the student respondent. To obtain information on the other factors, they were asked to rate the course relative to other courses they had taken at Penn State on a scale of 1 (much lower) to 5 (much higher) in regard to:

- Amount of required work
- Degree of difficulty
- Amount learned

Student ratings were positively related to the grade received. Those receiving an A or A- grade were the most likely to rate the course as "excellent" or "good," with the percentages of such high ratings decreasing with declining grade-level (Table 7).

- 80% of those receiving A or A- grades rated the course as excellent/good; only 7% evaluated it as poor/very poor. For those receiving B+, B, or B- grades these figures were 65% excellent/good and 13% poor/very poor.
- Nearly half (49%) of those with C+, C, or C- grades rated the course as excellent/good; 23%

Relationship of Course Difficulty to Course Rating



rated it as poor/very poor.

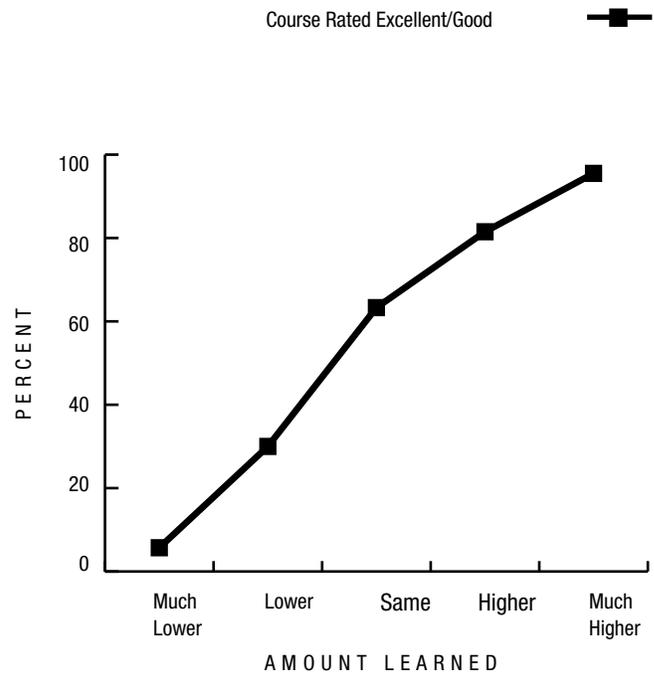
- Although 33% of those students who received a grade of D or F evaluated the course as poor/very poor, 39% gave it a fair rating, and 28% indicated it was an excellent/good course.

There was no statistically significant relationship between the amount of work that was required relative to other classes the student had taken and how he/she rated the quality of instruction in the evaluated course.

The relative difficulty of a course was related to rating of the class quality but the relationship was not simple and linear. Courses viewed as being less difficult than other classes students had experienced and those which were much more difficult had lower student ratings than did those with average difficulty levels.

- 61% of those with much lower and 60% of those with much higher difficulty levels relative to most other courses received excellent/good ratings.
- Those classes described as neither more nor less difficult (code 3 on the scale) were rated as excellent/good by 78% of the students.

Relationship of Amount Learned to Course Rating



When asked to indicate how much they felt they had learned in the class, there was a strong direct relationship between perceived learning and course evaluation.

- 96% of those students reporting they had learned much more (code 5) in the course relative to other courses they had taken rated the course as excellent/good.
- Of those who rated the amount they learned in the class much lower (code 1) or somewhat lower (code 2) than other courses, only 6% and 30% respectively gave it excellent/good ratings.

Summary and Discussion

Student ratings of course quality were found to be related to the frequencies with which the instructor was seen as knowledgeable, well-prepared, clear in the presentation of material, enthusiastic, and fair. All characteristics and behaviors deemed by both instructors and students and included in virtually all formal ratings of teaching quality such as Penn State's Student Ratings of Teaching Effectiveness (SRTE). However, the study findings went beyond a simple recitation of these ideas to a consideration of the relative importance of these and other attributes.

- The instructor's skill in making the subject matter understandable was by far the most important pedagogical practice related to student ratings.
- The second most important element was the ability of the instructor to stimulate students to think beyond the specific course material and consider its broader meaning. The acquisition of critical thinking skills is (or should be) an important goal of a university or college education. It was noteworthy that students appeared to evaluate the quality of the instruction they received to include this broader meaning of education rather than simply emphasizing acquisition of specific subject matter content.
- Instructor's enthusiasm for teaching and ability to maintain a classroom environment conducive to learning were also related to students' evaluations of teaching quality. Both of these latter attributes suggest the importance of instructors' interpersonal and social skills, as well as their academic and intellectual knowledge.
- Instructor knowledge, preparation, and fairness were also clearly important considerations in how students rated a course.
- Although less important than other instructional elements addressed in the current study, the use of technology and the use of group projects to foster collaborative learning were both found to relate positively to how students rated a course.

Characteristics of the courses themselves, including class size, mode of instruction, status of the instructor and the extent to which students had a choice in enrolling were also related to how they rated course quality.

- Smaller classes, combined lecture and discussion formats, faculty teachers (rather than graduate students), and elective courses were more positively evaluated by students than were larger classes, the use of either lecture or discussion alone, teaching assistants as instructors, and required courses. The relationships of these factors to student evaluations were far less important than the instructor attributes and practices described above.
- Moreover, these course characteristics may be important precisely because they facilitate methods of instructor-student interactions that are deemed

important elements of instructional quality. Thus, the higher ratings of smaller classes may reflect the importance of a personal interactive environment that facilitates discussion, allows instructors to more closely gauge the progress of individual students and assist in their understanding the material, and contributes to the emergence of a positive learning atmosphere.

- The higher ratings of faculty/staff instructors over graduate student instructors may be explained in part by the amount of previous teaching experience that faculty members likely have, and to their mastery of the subject matter. This combination of pedagogical skill and knowledge is likely visible to students and contributes to their more positive evaluations of faculty/staff.
- The ratings of electives as higher than required courses may simply reflect students' choices of subject matter that is intrinsically interesting to them, but electives also present opportunities to explore new and varied topics and thus can contribute to stimulating students to think more broadly about the implications and meanings of their knowledge—a valued criteria of instructional quality. As many students struggle to meet requirements and graduate early or on time, elective courses which are designed to provide a well-rounded and thought provoking experience often are thought of as “expendable.” However, this research suggests students may value these courses.

The nature of the outcomes and the work and difficulty involved was expected to relate to how students rated the quality of instruction in the course. Certainly, it seemed reasonable to expect that high grades (as indicators of successful teaching) would be expected to relate positively to how students evaluate the quality of instruction. Although this relationship was found in the current analysis, the strength of the association was far from perfect.

- Of those who received A or A- grades, one in five reported the course was only fair or poor and those students who received low grades often evaluated the instruction positively. Thus, while a third of those who received grades of D or F evaluated the course as poor/very poor, 39% gave it a “fair” rating, and 28% indicated it was an excellent/good course.
- The commonly held belief that difficult courses



and too much work will turn students “off” and result in low student ratings was not supported by these data. This study found no significant linear relationships between students’ evaluations of teaching quality and either the amount of required work or course difficulty relative to other courses they had taken. Students did view difficulty as a relevant factor, but rigor and hard work did not appear to be the issue. Rather, either excessive difficulty or too little challenge seemed to frustrate students. Educators need to make this clear distinction between workload and difficulty. While challenging students and pushing them to achieve higher standards, it is important to make sure this is done in a way that does not discourage students by setting standards that are beyond their current capabilities and by demonstrating what they are learning is important so the extra effort makes sense to them.

Finally, and perhaps the most important and encouraging finding was that the strongest predictor of students’ perceptions of instructional quality was the amount they believed they had learned. More than 95% of those students who reported their learning was much higher in the course relative to other classes they had taken at Penn State rated the course as excellent or good. Among those who reported they had learned much less, only 6% evaluated the course as excellent or good. Thus, notions that students are mainly motivated by course completion and advancement toward graduation were simply not supported by this research. A genuine priority of the students was to learn, and this was the central point on which they based their evaluations.

Changes in Perceptions of Teaching Quality 1996-2011

The availability of information from previous studies carried out in 1996 at the University Park campus of Penn State provided baseline data for assessing changes across time in student and instructor perceptions of teaching quality (Willits, et al. 1997). In 1996, 1,026 students and 1844 instructors chosen at random from the University's Data Warehouse completed questionnaires mailed to their campus addresses. The survey questions were similar in format and content to those used in the 2011 study. Included on both the student and instructor 1996 surveys were items asking students how "important" they felt various pedagogical practices were for quality teaching. The student survey also asked each respondent how frequently the instructor in a randomly chosen class which they had taken exhibited each behaviors, and how they rated the quality of instruction in the course and in all courses taken during the previous semester. Many of the items in the 1996 study were identical to those used in 2011. However, some previously used questions were excluded in 2011 while others were added. Thus, for example, none of the items dealing with the use of

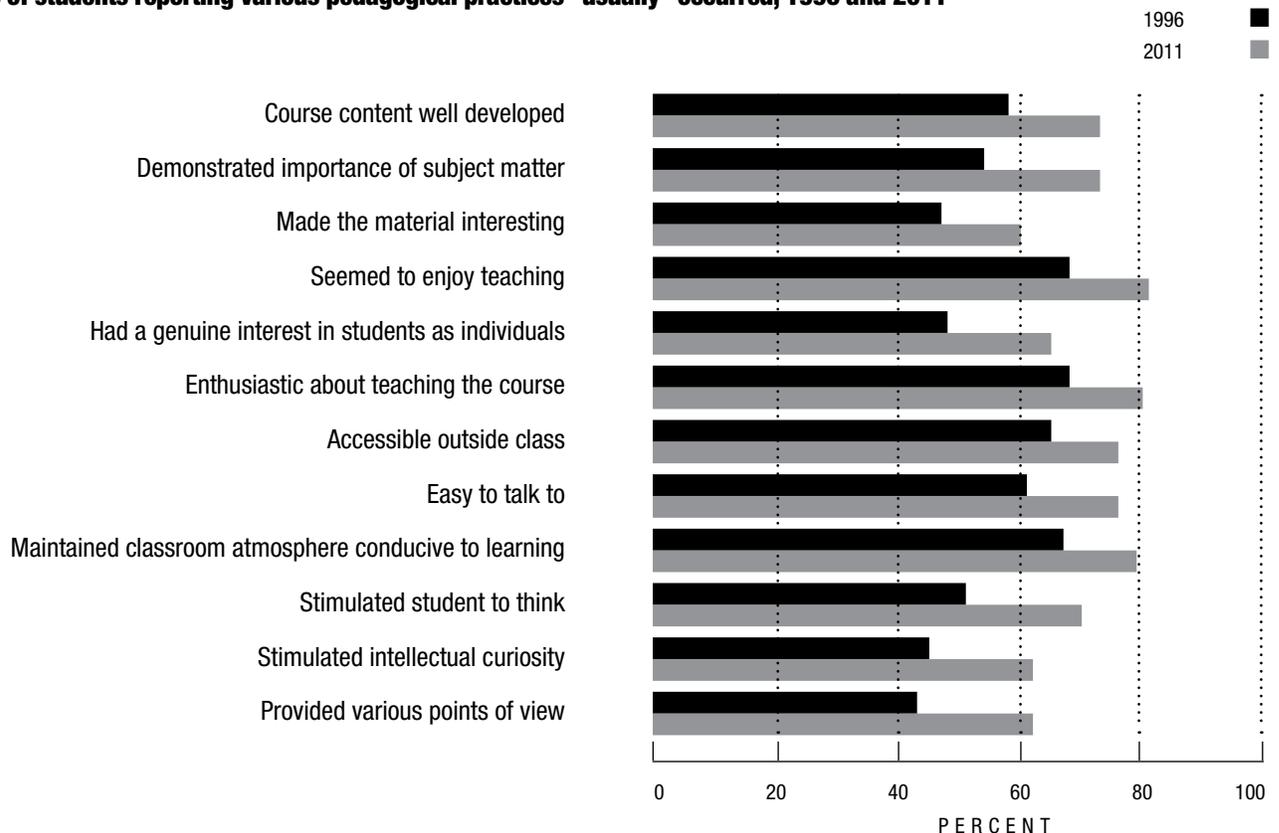
technology in teaching and only two asking about collaborative learning were included in the 1996 surveys. Nevertheless, in those cases when comparable questions were asked, the availability of these data provided an opportunity to assess some changes in student and instructor perceptions across the intervening 15 years.

Perceptions of Instructors and Students Concerning the Elements of Teaching Quality

In both time periods, the elements of teaching deemed to be important by more than 90% of both students and teachers focused on the need for the instructor to possess a thorough knowledge of the subject matter, to explain material clearly, to make the subject matter understandable, to be well-prepared, and to be fair in evaluating student work. For these items and for most of the others for which comparable data were available, the percentages of "important" responses varied little across the 15 years. The only elements for which these percentages differed by more than five percentage points were:

- Students were more likely in 2011 than in 1996 to feel it was important that the course content be "well-developed" (88% vs. 82%).

Percentage of students reporting various pedagogical practices "usually" occurred, 1996 and 2011



- The percentages of students indicating it was important for the instructor to seem to enjoy teaching increased from 79% in 1996 to 85% in 2011.
- In 2011, 89% of the students reported it was important for the instructor to be genuinely interested in the subject matter; in 1996 that percentage was 81%.
- Instructors were more likely to give importance to demonstrating the importance of the subject matter in 2011 than had been the case in 1996 (89% vs. 82%).

Students' Views of Instructors' Use of Specific Elements of Quality Teaching

Students in both 1996 and 2011 were asked to indicate how frequently each of the elements of instructional quality occurred in a randomly chosen class in which they had been enrolled the previous semester. Of the 24 items for which data were available, for 23 the percentages of students who reported these desirable behaviors “usually” occurred increased between 1996 and 2011. For the single exception (Instructor demonstrates a thorough knowledge of the subject matter), 86% of the students in both time periods reported this usually occurred. The greatest changes were found for the following items.

- 58% in 1996 reported the course content was usually well developed; in 2011, 73% did so.
- 54% in 1996 and 73% in 2011 said their instructor usually demonstrated the importance of the subject matter.
- 47% in 1996 and 60% in 2011 said the instructor usually made the material interesting.
- 68% in 1996 and 81% in 2011 indicated their instructor usually seemed to enjoy teaching.
- 48% in 1996 and 65% in 2011 felt the instructor had a genuine interest in students as individuals.
- 68% in 1996 and 80% in 2011 reported the instructor was usually enthusiastic about teaching the course.
- 65% in 1996 and 76% in 2011 indicated the instructor was usually accessible to students outside class.
- 61% in 1996 and 76% in 2011 said the instructor was usually easy to talk to.

- 67% in 1996 and 79% in 2011 reported the instructor usually maintained a classroom atmosphere conducive to learning.
- In 1996, 51% of the students indicated the instructor usually stimulated students to think; in 2011, 70% reported this occurred.
- 45% of the students in 1996 said the instructor stimulated intellectual curiosity; in 2011, 62% gave this response.
- 43% in 1996 indicated the instructor usually provided various points of view; in 2011, 62% of the students reported this occurred.

Undergraduate Students' Evaluations of Teaching Quality

Students in both the 1996 and 2011 surveys were asked to rate the quality of instruction they received in the course. Students in 2011 were more likely than their 1995 counterparts to rate the course as “excellent” and somewhat less likely to give it poor/very poor ratings.

- 34% of the students in 2011 rated the course as excellent; 25% had done so in 1995.
- In 2011, 31% indicated the course was only fair or poor/very poor; in 1996, 38% had given the course such low ratings.

Summary and Discussion

To the extent that the findings from the 1996 and 2011 surveys are valid and comparable, it appears that the quality of instruction at University Park over this fifteen-year period has increased. This was seen in two ways. First, student course ratings were higher in 2011 than in 1996. Second, and perhaps more importantly students reported seeing an increased use of almost all of the elements of educational quality they and their instructors identified as important. This rise has coincided with the University's greater emphasis on its teaching mission as seen through increases in its instructional education and awards programs. During this period, the Schreyer Institute for Excellence in Teaching and Teaching and Learning with Technology were established. Programming through these venues, greater mentoring by colleagues and various other programs have helped both new and experienced instructors hone their pedagogical skills. The value of good teaching has been reinforced by greater balance given



in tenure, promotion and salary decisions to teaching performance. In addition, there have been great strides in educational psychology and understanding the teaching/learning process and these have impacted the culture of the academy, acknowledging the art, science, and rewards of teaching. The job is not yet done, however. Despite the favorable changes evidenced in the current data, too many students still report less than desirable teaching/learning experiences.

Moreover, new and evolving demands of the larger society, changes in the characteristics of the student populations, and, rapidly evolving technologies require continuing vigilance and unwavering attention to meeting the challenges of higher education in the years ahead. Colleges and Universities have become increasingly competitive and students have become more demanding and better informed about the services and support they might expect to receive. As a result, there are increasing demands that institutions provide an excellent quality student experience if they are to attract students, increase retention rates, and aid in student progression. The increasing level of student diversity, the increasing costs of delivering a quality higher education, the reduction in government/ state funding and resource constraints means delivering an excellent quality student experience has never been more challenging.

Appendix

Table 1. Distributions of gender, class standing, and age in the sample and the population of University Park students meeting the criteria for the study.

Variables	Population	Sample		
	(N=31,103) %	Number of cases ^a	%	
Gender				
Male	53.3	764	41.8	
Female	46.7	1064	58.2	
Total	100.0	1833	100.0	
Class Standing				
Freshman (30 credits or less)	8.2	425	23.2	
Sophomore (31-60 credits)	20.6	369	20.1	
Junior (61-90 credits)	22.9	513	28.0	
Senior (more than 90 credits)	48.3	526	28.7	
Total	100.0	1833	100.0	
Age				
Less than 20 years	23.7	678	37.0	
20-21	47.5	859	46.9	
22 years and older	28.8	296	16.1	
Total	100.0	1833	100.0	

^aNumber of cases in the sample varies from the total of 1837 because four students in the sample failed to answer these questions.

Table 2. Percentages of University Park students and instructors rating as “Important” various pedagogical practices.

Items	Students (N=1837)	Instructors (N=1537)
Knowledgeable/Prepared		
	-----%-----	
Instructor demonstrates a thorough knowledge of the subject matter.	95.2	95.4
Instructor is well prepared.***	93.1	97.1
Presentation of materials is well-organized.	90.9	92.7
The course content is well developed.	88.3	90.7
Instructor uses class time wisely	85.2	88.2
Clear/Understandable		
Instructor makes the subject matter understandable.***	92.6	96.6
Instructor explains material clearly.***	92.7	96.8
Instructor presents various ideas with clarity.***	89.7	93.4
Fair		
Methods of evaluating student work are fair.*	91.2	93.1
Instructor is impartial in assigning grades.***	82.9	91.9
Grades are based on students' understanding of the materials stressed in the course.	87.2	87.6
Instructor clearly defines student responsibilities in the course.	88.5	90.3
Feedback on exams and other graded material is valuable.	88.0	87.2
Enthusiastic/Interested		
Instructor seems to enjoy teaching.	85.0	85.7
Instructor is enthusiastic about teaching the course.***	90.7	94.5
Instructor is genuinely interested in the subject matter.	88.8	88.6
Instructor has a genuine interest in students as individuals.	74.0	76.1
Instructor makes material interesting.*	83.0	86.1
Instructor demonstrates the importance of the subject matter.***	80.2	88.6
Positive Social Atmosphere		
Instructor is accepting of students from different backgrounds.***	85.0	90.32
Instructor is sensitive to the diverse needs and interests of students.***	73.9	80.6
Instructor is accessible to students outside class.*	74.5	78.7
Instructor is easy to talk to.***	81.6	71.2
Instructor maintains a classroom conducive to learning.***	86.8	94.4
Critical Thinking		
Instructor encourages students to challenge conventional wisdom.*	67.8	72.1
Instructor encourages students to express their ideas.***	74.2	86.3
Instructor stimulates students to think.***	89.6	97.6
Instructor stimulates intellectual curiosity.***	79.8	93.3
Class discussion is an integral part of the course.***	57.3	72.0
Instructor provides various points of view.	77.0	77.8
Technology		
Instructor uses technology to enhance classroom learning.***	62.5	48.4
Instructor communicates with individual students via ANGEL, e-mail, listserves, etc.***	80.7	53.6
Lecture notes and/support materials are available on-line for student use outside class.***	87.3	45.5
Instructor encourages students to use technology to facilitate student interaction outside of class.***	59.2	31.7
Collaborative Learning		
The results of group effort impacts individual grades.***	29.7	23.6
Peer evaluation is a component of grades.***	23.8	16.6
Instructor uses group projects to promote learning.*	40.2	42.8
Students are encouraged to work together.	48.4	46.3
The class helps define course goals.***	56.8	19.8

≥ Number of cases varies from the total due to missing data

* Significant .05, ** Significant .01, *** Significant .001

Table 3. Frequency of occurrence of specific pedagogical practices reported by University Park students. (N=1837)^a

Instructor was...	Frequency of Occurrence (%)		
	Usually	Sometimes	Seldom/Never
Knowledgeable/Prepared			
Demonstrated knowledge of subject.	86.2	9.3	4.4
Was well prepared.	82.1	11.7	6.3
Presentation was well organized.	73.5	17.2	9.3
Well developed course content.	73.4	18.0	8.6
Used class time wisely.	76.6	14.8	8.6
Clear/Understandable			
Made subject matter understandable.	70.3	17.3	12.5
Explained material clearly.	66.0	20.8	13.3
Provided various ideas with clarity.	67.5	19.3	13.3
Fair			
Impartial in assigning grades.	78.5	15.0	6.5
Based grades on materials stressed.	77.4	14.2	8.4
Methods of evaluation were fair.	77.6	12.6	9.6
Clearly defined student responsibilities.	80.0	13.6	6.4
Gave valuable feedback on exams, etc.	62.0	21.3	16.6
Enthusiastic/Interested			
Seemed to enjoy teaching.	80.8	12.1	7.1
Was enthusiastic about teaching the course.	79.8	13.1	7.2
Was genuinely interested in subject matter	86.5	9.0	4.2
Had genuine interest in students as individuals.	64.9	19.4	15.7
Made material interesting.	59.5	20.7	19.8
Demonstrated importance of subject.	72.7	17.9	9.4
Positive Social Atmosphere			
Was accepting of students from different backgrounds.	86.7	9.3	4.0
Was sensitive to student needs/interests.	70.1	19.6	10.3
Was accessible outside class.	76.3	16.2	7.5
Was easy to talk to.	75.6	14.2	10.2
Instructor maintained a classroom conducive to learning.	78.6	13.9	7.5
Critical Thinking			
Challenged conventional wisdom.	54.6	26.2	19.2
Encouraged students to express ideas.	61.5	19.4	19.1
Stimulated students to think.	69.7	19.3	11.0
Stimulated intellectual curiosity.	62.0	23.6	14.3
Used class discussion as integral to course.	48.9	20.2	30.9
Provided various points of view.	61.5	23.4	15.1
Technology			
Used technology to enhance classroom learning.	66.3	17.6	16.0
Communicated with students outside class via ANGEL, listservs, etc.	78.9	12.3	8.9
Provided lecture notes/materials on-line.	70.8	12.6	16.6
Encouraged use of technology for student interaction outside class.	53.2	21.4	25.4
Collaborative Learning			
Group effort impacted grades.	32.7	11.3	56.1
Used peer evaluation as grade component	26.1	9.1	64.8
Used group projects to promote learning.	38.1	14.2	47.7
Encouraged students to work together.	46.9	20.6	32.6
Had class help to define goals.	48.0	22.0	30.0

^a Number of cases varies due to missing data.

Table 4. Relationships of the frequency of occurrence of selected pedagogical elements to course rating, University Park students.

Frequency of occurrence of elements	Course Rating			Cramér's V
	Excellent/ Good	Fair	Poor/ Very poor	
	-----%-----			
Knowledgeable of subject matter				.380***
Usually	77.8	16.2	6.0	
Sometimes	23.4	43.1	33.5	
Seldom/Never	9.0	20.5	70.5	
Well-prepared				.412***
Usually	79.7	15.6	4.7	
Sometimes	31.9	41.1	27.1	
Seldom/Never	12.8	19.7	67.5	
Makes subject matter understandable				.577***
Usually	90.3	8.7	1.0	
Sometimes	28.7	52.8	15.9	
Seldom/Never	8.1	31.4	90.3	
Enthusiastic about teaching				.446***
Usually	81.8	13.8	4.5	
Sometimes	28.8	48.1	23.2	
Seldom/Never	11.0	22.0	66.9	
Fair in evaluating student work				.402***
Usually	81.1	14.4	4.5	
Sometimes	39.9	40.4	19.7	
Seldom/Never	16.6	26.6	56.8	
Stimulates students to think				.496***
Always/Usually	87.3	9.8	2.9	
Sometimes	39.5	45.9	14.6	
Seldom/Never	11.2	29.4	59.4	
Maintains learning environment				.476***
Usually	83.3	13.5	3.2	
Sometimes	30.4	44.0	25.6	
Seldom/Never	3.7	27.6	68.7	
Uses technology				.268***
Always/Usually	79.3	15.4	5.3	
Sometimes	57.9	29.1	13.0	
Seldom/Never	43.0	22.2	34.9	
Uses group work				.201***
Usually	85.7	9.9	4.5	
Sometimes	62.3	27.4	10.3	
Seldom/Never	59.1	23.6	17.3	

***Significant .001

Table 5. Relationships of structural course characteristics to course rating, University Park students.

Course characteristics	Course Rating			Cramér's V
	Excellent/ Good	Fair	Poor/ Very poor	
	-----%-----			
Class size				.102***
< 20 students	79.9	12.7	7.4	
20-99 students	73.4	16.7	9.8	
100 or more students	61.7	23.8	14.6	
Mode of Instruction				.144***
Lecture only	56.5	25.8	17.7	
Lecture and discussion	81.3	13.4	5.3	
Discussion/ seminar	68.4	12.7	19.0	
Instructor				.084**
Faculty/ Staff	70.4	19.2	10.5	
Grad student/ TA	63.1	17.2	19.7	
Choice				.103***
No choice (Required)	64.7	21.2	14.1	
Selected from a required list	75.2	16.4	8.3	
Free elective	81.6	13.1	5.3	

***Significant .001

**Significant .01

Table 6. Relationships of student characteristics to course rating, University Park students.

Student characteristics	Course Rating			Cramér's V
	Excellent/ Good	Fair	Poor/ Very poor	
	-----%-----			
Gender				.050
Male	69.0	18.2	12.9	
Female	70.5	19.7	9.8	
Class standing				.064*
Freshman	64.5	21.1	14.4	
Sophomore	67.6	19.5	13.0	
Junior	70.1	18.7	11.2	
Senior	74.8	16.9	8.3	
Residence				.049
Pennsylvania	68.7	19.0	12.4	
USA, not PA	72.7	18.2	9.0	
Outside USA	69.4	20.4	10.2	
Semester credits				.050
< 14	69.8	14.9	15.3	
14-15	68.4	20.8	10.8	
16-17	69.8	19.0	11.2	
18 or more	72.4	18.4	9.2	
GPA				.051
< 2.50	65.1	20.2	14.7	
2.50-2.99	66.4	23.4	10.2	
3.00-3.49	68.4	19.2	12.3	
3.50 and over	72.7	16.6	10.7	

*Significant .05

Table 7. Relationships of grades, work, difficulty, and amount learned to course rating, University Park.

Grade Work, Difficulty, Learned	Course Rating (%)			Cramér's V
	Excellent/ Good	Fair	Poor/ Very poor	
	----- % -----			
Grade in course				.203***
A, A-	79.6	13.8	6.6	
B+, B, B-	65.0	21.9	13.1	
C+, C, C-	49.0	28.5	22.5	
D, F	28.1	38.6	33.3	
Amount of Work relative to other courses				.063
1 Much lower	61.6	21.9	16.4	
2	63.0	24.9	12.1	
3	72.6	16.4	11.1	
4	71.4	18.2	10.4	
5 Much higher	68.0	19.6	12.4	
Degree of Difficulty relative to other courses				.121***
1 Much lower	60.8	18.9	20.3	
2	64.8	22.1	13.1	
3	77.7	15.2	7.0	
4	69.9	20.4	9.7	
5 Much higher	60.1	20.3	19.6	
Amount Learned relative to other courses				.429***
1 Much lower	5.7	27.3	67.0	
2	30.0	37.2	32.9	
3	63.3	26.8	10.0	
4	81.5	14.7	3.7	
5 Much higher	95.5	3.5	1.0	

*Significant .001

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