

Student Ratings of Teaching Effectiveness: Analysis of Data from Common Courses from Select Semesters (2009-2010)

by
Angela R. Linse and Hui (Jimmy) Xie
Schreyer Institute for Teaching Excellence, Penn State
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Introduction

This report provides analyses of a sample of data from Penn State’s Student Rating of Teaching Effectiveness (SRTE). The analyses reported were conducted by the Schreyer Institute for Teaching Excellence to investigate the effects of online administration. An earlier report presented aggregate analyses, where all results for the unit were compared across transition from paper to online administration of the SRTEs (see <http://www.srte.psu.edu/OnlineReports/>). That report indicates that while response rates were much lower for Online SRTEs, there were only small differences in the average scores for overall ratings of the course (A3) and overall ratings of the instructor (A4). Here we investigate response rates and average scores on these same two questions, but we include data only from courses taught in both semesters by the same faculty member.

The data used in the analyses reported below are drawn from a larger sample that included results only for colleges and campuses in which the transition from paper to online administration of SRTEs occurred simultaneously for all courses during a single semester. These data are divided into four groups.

| Group | Academic Units | Online SRTE (start) |
|-------|--|---------------------|
| 1 | Penn State Dubois (DS) | Spring 2009 |
| 2 | College of Health and Human Development (HHD) | Spring 2009 |
| 3 | College of Agriculture (AG) and College of Earth and Mineral Sciences (EM) | Spring 2010 |
| 4 | Penn State Erie–The Behrend College (BD) and Great Valley (KP) | Spring 2010 |

The SRTE information analyzed includes response rate, average overall rating for the course (A3), and average overall rating of the instructor (A4). The primary purpose of this analysis is to examine the similarities and differences across the transition from Paper and Online SRTEs. We also examine the variation between the two most recent semesters of Paper SRTEs. The paper-to-paper comparison provides a benchmark for interpreting the results of the paper-to-online comparisons.

Scatter plots with a blue background include only results from paper administration of SRTEs, while plots with a white background compare results from paper administration of SRTEs to results from online administration of SRTEs. In all scatter plots, each data point represents a course-section taught by the same instructor in both semesters. The red diagonal line in each plot is an equal-value line. Points located on the line have identical values across the two semesters. Course-sections located above the red line have a higher value in the semester represented by the vertical axis and course-sections below the red line have higher value in the semester represented by the horizontal axis.

Response Rate Results

As previously documented (Linse 2010), response rates for Online SRTEs are lower than response rates for SRTEs administered on paper. This outcome is predictable given that the different contexts in which paper and Online SRTEs are completed. Paper SRTEs are simultaneously administered to a community of students in a controlled environment (i.e. all students in attendance on a particular day). While high attendance rates do not guarantee that all students will complete paper SRTEs, the community and simultaneous administration in a controlled classroom setting may create an expectation, and possibly peer-pressure, to participate. In contrast, Online SRTEs are completed asynchronously by individuals outside of the classroom.

Despite the expected decrease in response rates, scatter plots of the response rates also show consistencies between paper and online response rate distributions. The patterns for the response rate comparisons are similar for three groups, College of Agricultural Sciences and College of Earth and Mineral Sciences (Figure 1), College of Health and Human Development (Figure 2), and Erie and Great Valley (Figure 3). No clear linear relationship is visible in any of the response rate scatter plots. In each plot, the points are scattered, which indicates that there is no clear or strong relationship between the response rates of the comparison semesters.

The point distributions in Figures 1-3 also exhibit some consistencies. For example, the point scatters for the paper vs. paper are remarkably similar to those for the paper vs. online plots. The similarities in the scatters show that response rates do vary, even when the same instructor teaches the same course. Additionally, the densest part of the cluster is at the high end of both scales, which indicates that instructors who have high response rates for Paper SRTEs also have relatively high response rates for Online SRTEs.

Figure 1. Response Rates for the College of Agricultural Sciences and College of Earth and Mineral Sciences.

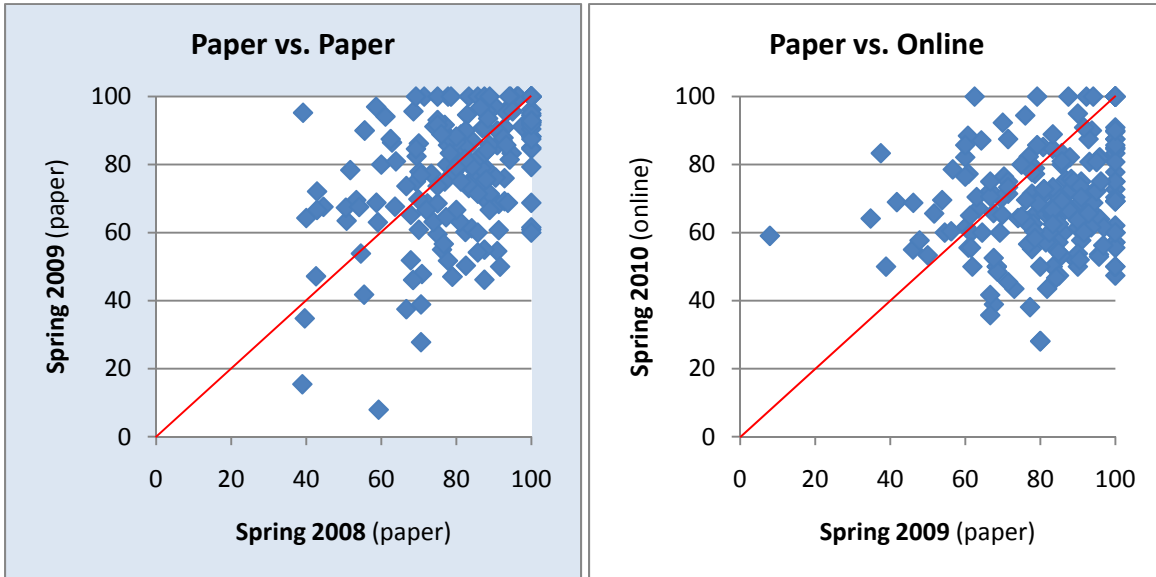


Figure 2. Response Rates for the College of Health and Human Development.

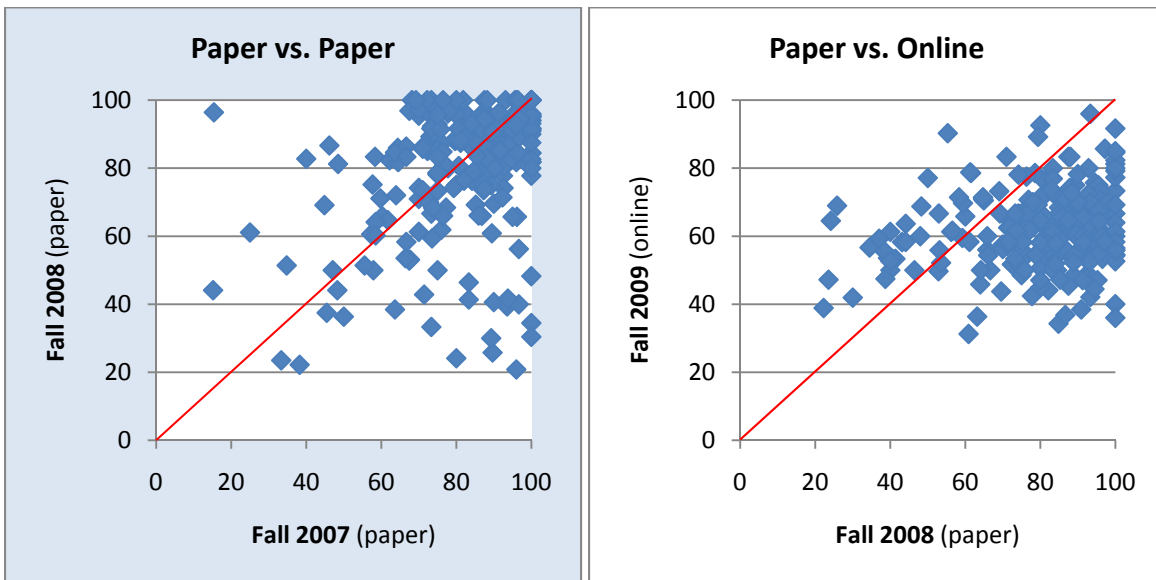
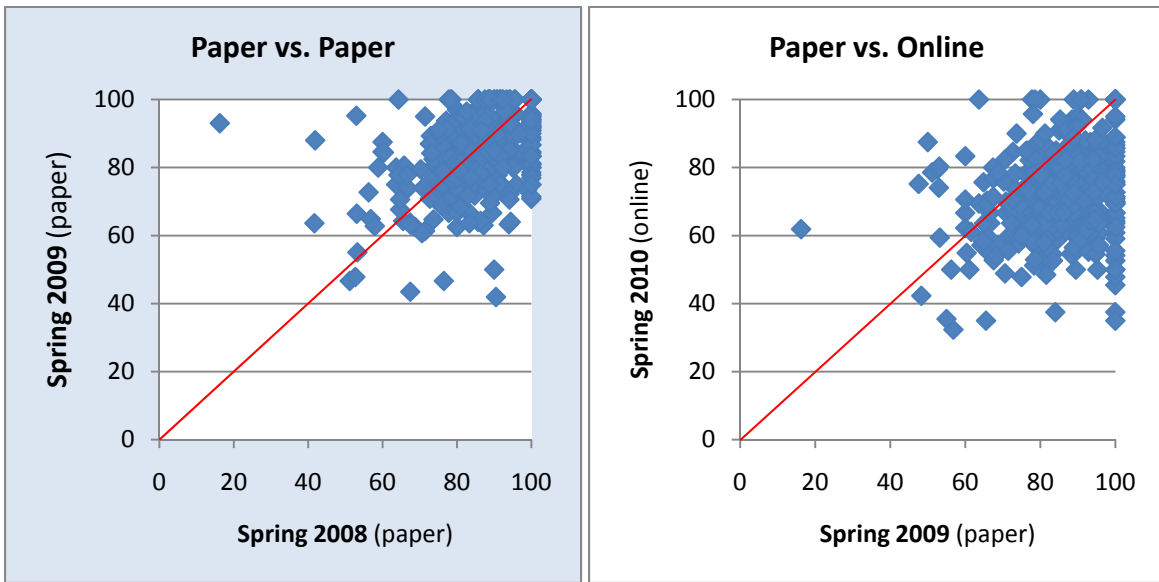
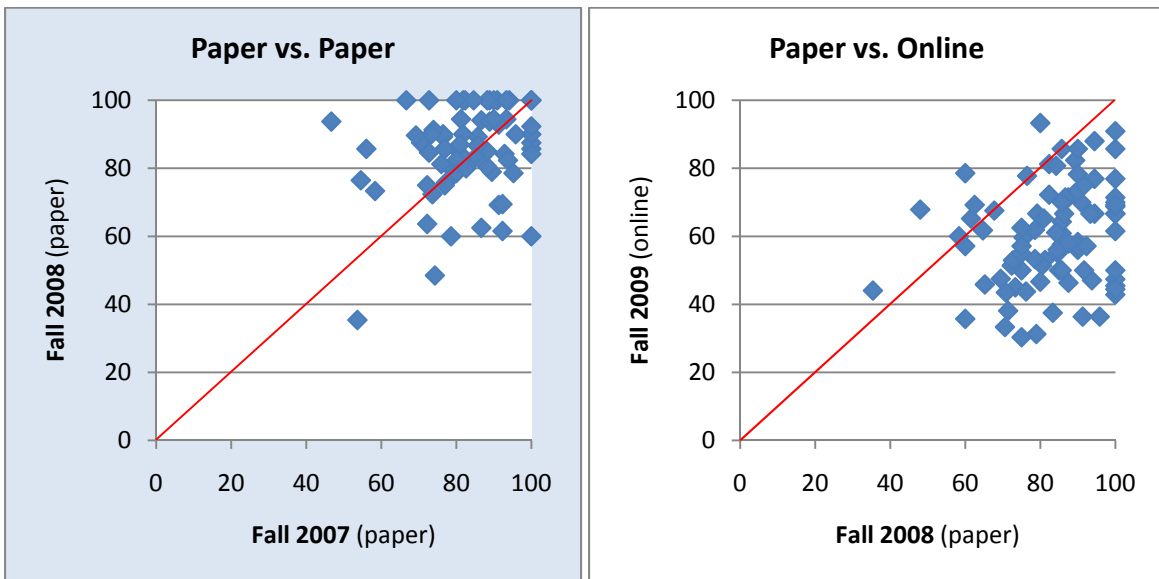


Figure 3. Response Rates for Penn State Erie and Penn State Great Valley.



The results from Penn State DuBois (Figure 4) are slightly different from the other college and campus samples discussed above. The differences between the two plots may be a function of small sample sizes.

Figure 4. Response Rate for Penn State DuBois.



Average Scores Results

In general, the scatter plots are more tightly clustered for the mean scores than are response rate scatter plots. The nearly identical point distributions for the paper vs. online and paper vs. paper plots might serve to ease some faculty members' concerns that the views of students likely to

complete the Online SRTes would be substantively different from those completing the SRTes on paper in class.

The distributions of points for both the average Overall Course ratings (A3) and Overall Instructor ratings (A4) are similar for both the paper vs. online and the paper vs. paper comparisons (Figures 5-7 and Figures 9-11). Most of the points are scattered tightly around the equal-value (red) line, which indicates that a faculty members' average scores are relatively stable. For faculty members who receive average scores of 5.0 or higher are more tightly clustered. This indicates that the average Overall Course ratings do not appear vary substantively with the shift to online administration of SRTes. These results are consistent with the Cramér's v analyses reported earlier (Linse 2010), which indicates that the relationship between delivery method and average scores is not strong. Faculty members who receive relatively high average ratings for questions A3 and A4 with paper SRTes also receive high ratings for online SRTes.

Only the plots for Penn State DuBois (Figures 8 and 12) are slightly different from the scatter plots for the other academic unit samples. For the DuBois sample, the points in the paper vs. online plot are more variable, i.e. more scattered, than for the paper vs. paper plot. The DuBois sample has the smallest number of courses taught by the same instructor.

Figure 5. Average Overall Rating of the Course (A3) for the College of Agricultural Sciences and College of Earth and Mineral Sciences.

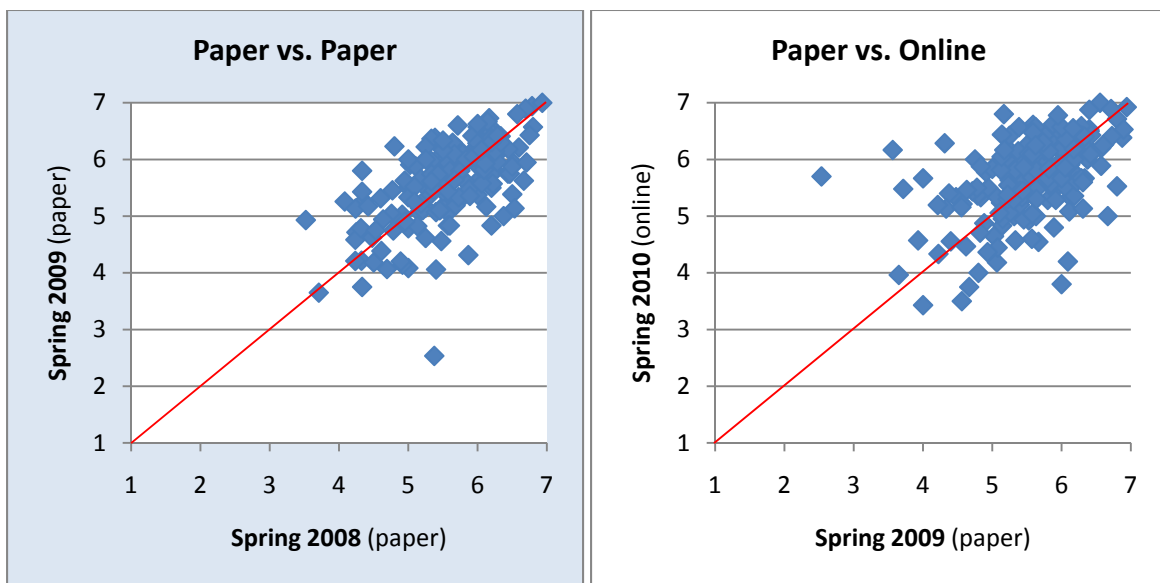


Figure 6. Average Overall Rating of the Course (A3) for the College of Health and Human Development.

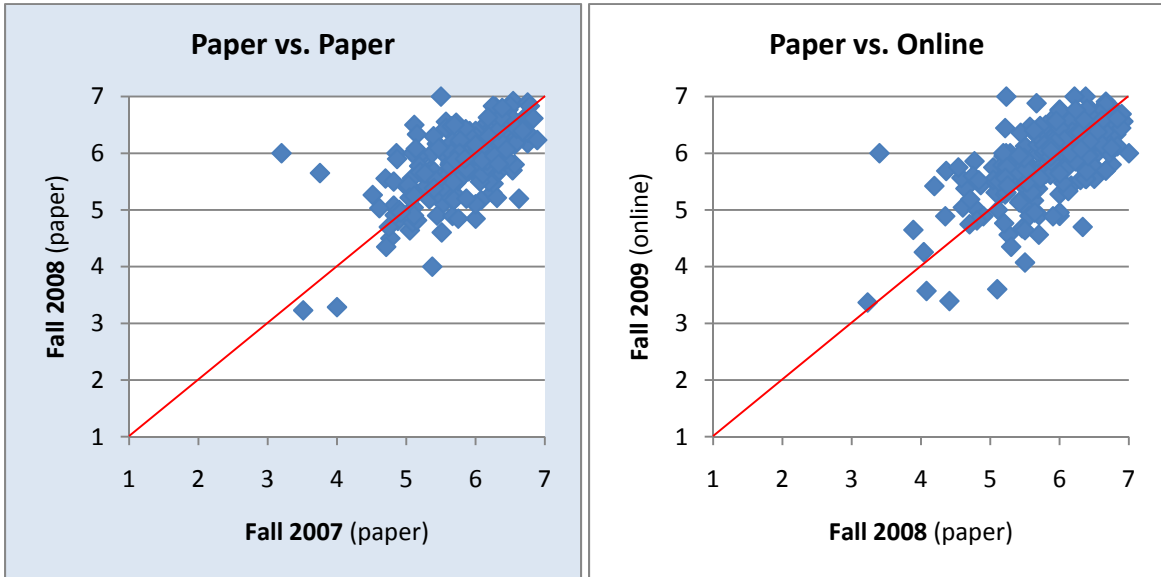


Figure 7. Average Overall Rating of the Course (A3) for Penn State Erie and Penn State Great Valley.

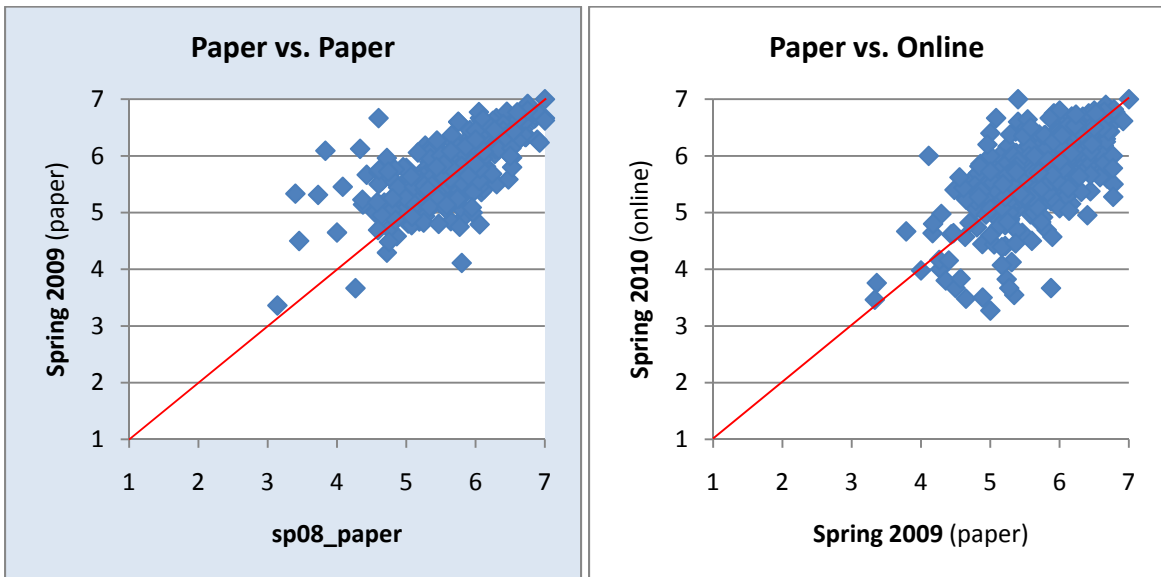


Figure 8. Average Overall Rating of the Course (A3) for Penn State DuBois.

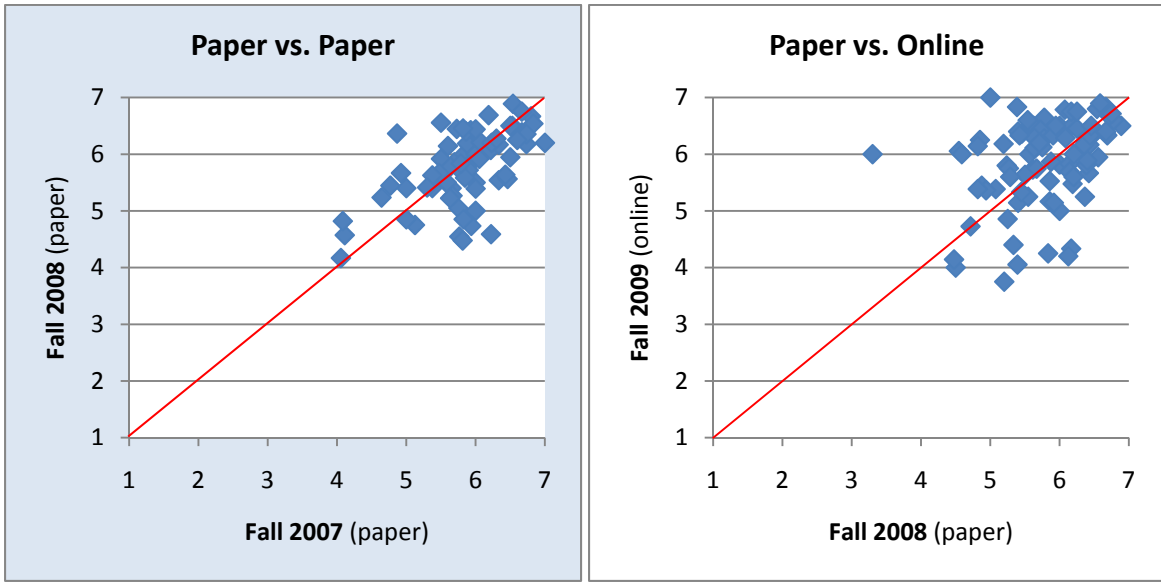


Figure 9. Average Overall Rating of the Instructor (A4) for the College of Agricultural Sciences and College of Earth and Mineral Sciences.

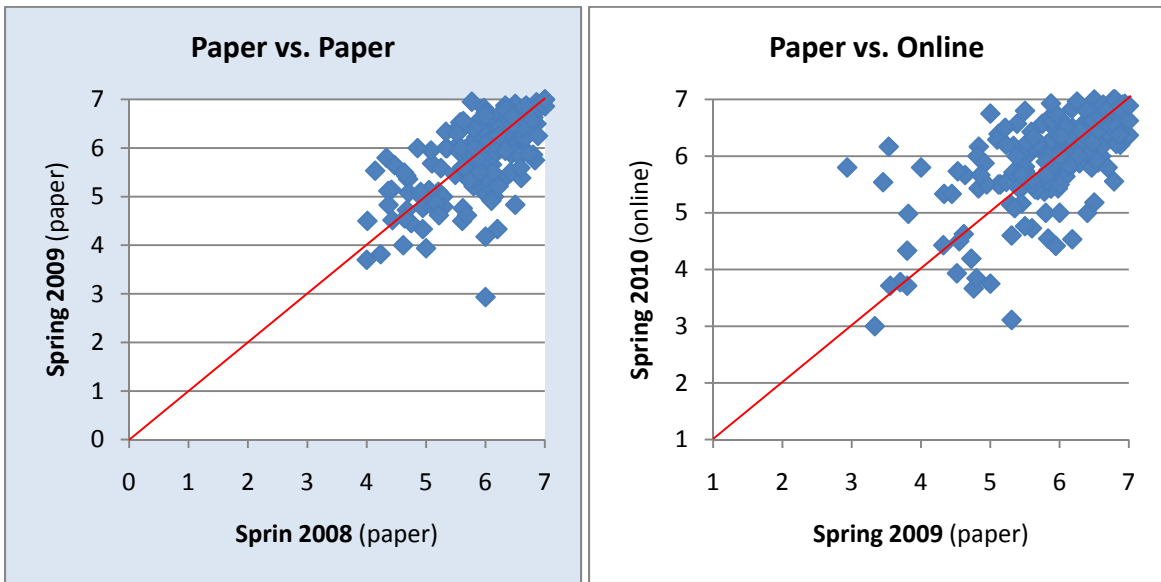


Figure 10. Average Overall Rating of the Instructor (A4) for the College of Health and Human Development.

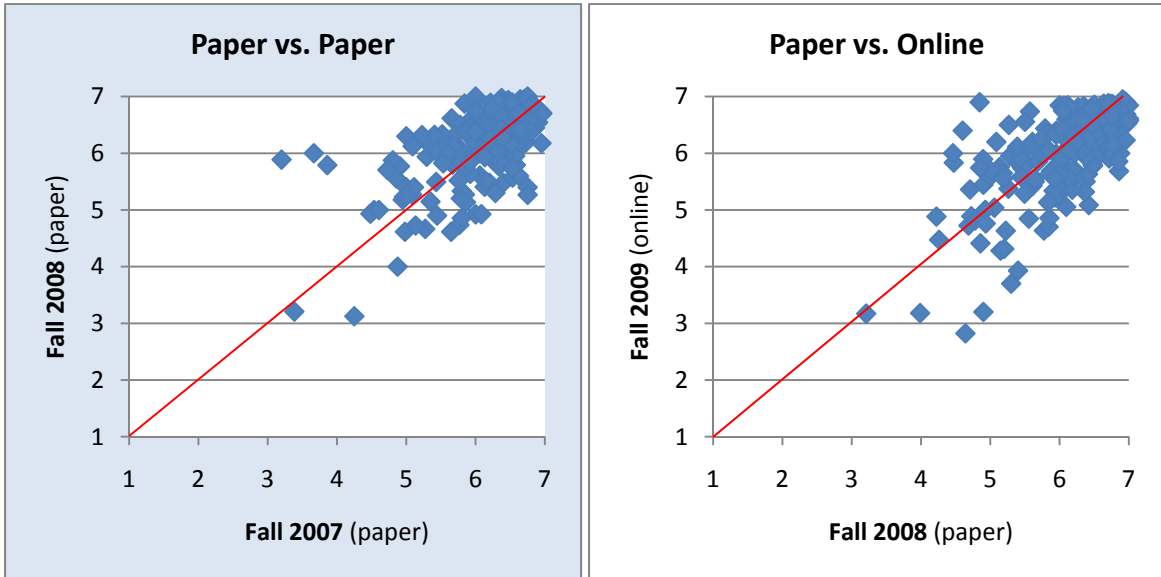


Figure 11. Average Overall Rating of the Instructor (A4) for Penn State Erie and Penn State Great Valley.

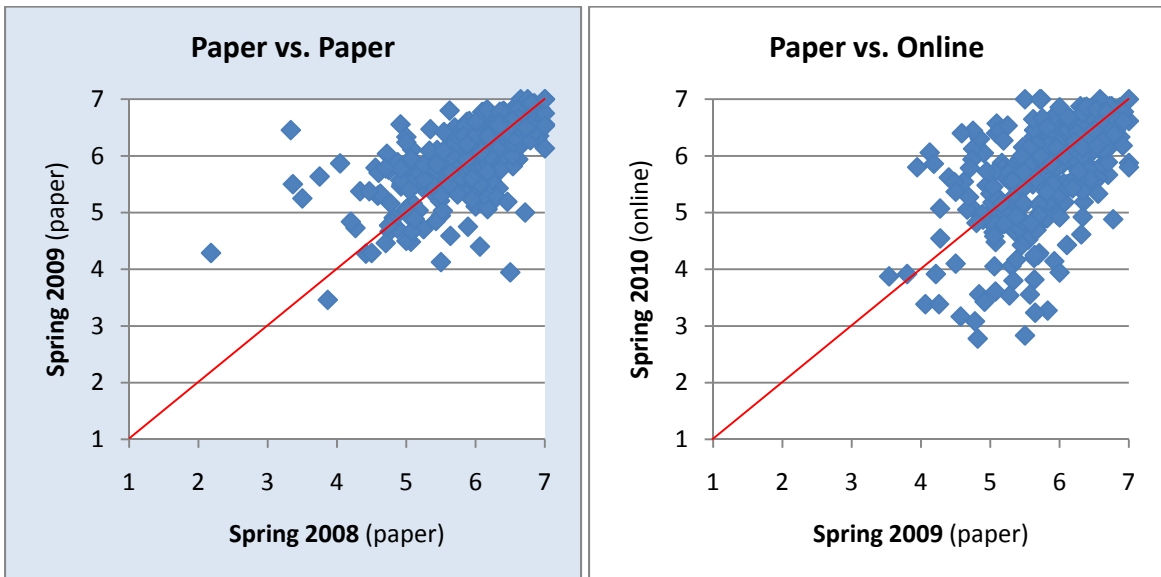
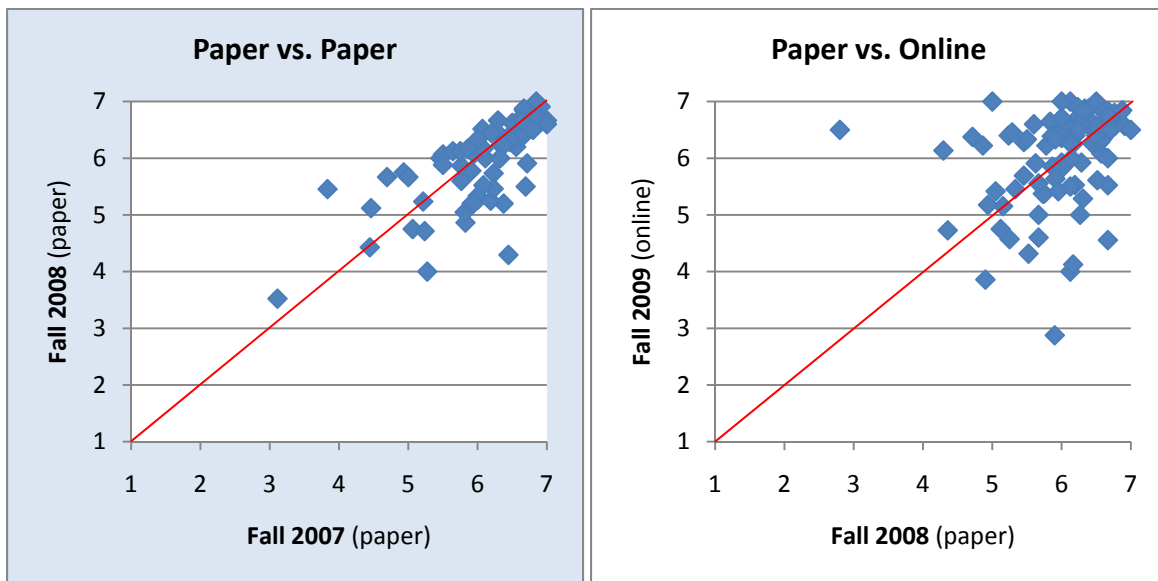


Figure 12. Average Overall Rating of the Instructor (A4) for Penn State DuBois.



Conclusions

The bivariate scatter plots provided above show that the variations between Paper SRTEs and Online SRTEs are similar to the variations seen when comparing two Paper SRTE samples. The results are consistent with earlier analyses, which show that even though response rates decrease for Online SRTEs, the decrease has minimal effect on average ratings of Overall Course (A3) and Overall Instructor (A4). When samples include results only for course-sections taught by the same instructor, the scatter plots show that instructors that received high response rates for paper SRTEs also receive among the highest response ratings for Online SRTEs. Similarly, faculty with high average ratings for Paper SRTEs continue to have high average ratings in Online SRTEs.