

Interpreting eUSRI scores

The following framework is based on data obtained from the 2030 course sections that used eUSRIs in the Fall 2013 term. Within these 2030 course sections there were 307 where the course title and instructor name were the same in Fall 2013 as in Fall 2012. We refer to these as “matched” lecture sections.

Before diving into the data, we note that one of the benefits we observed for using the eUSRI is the increased rate at which students offer written comments on their course experience. Anecdotally, students also appear to offer longer and more detailed comments, and there is little ad hominem content in those comments.

Response rate observations

For the full sample of 2030 course sections, response rates decline by 20% on average (see Table 1). This corresponds to previous observations in the literature [1,2,3].

Online	Percentiles				
	5	25	50	75	95
No	45.9	68.0	80.4	90.9	100.0
Yes	36.1	48.4	59.1	70.0	90.0

Table 1. Response rates

When we look at just the “matched” lecture sections, we find a 15% drop in median response rate, from 77% for the paper-based survey to 62% for the eUSRIs.

Observations on the distribution of responses

Next we consider whether there are changes in the way responses are distributed. Looking at the mean value for responses to “Overall, this instructor was excellent” we observe no significant change. The mean moves only slightly, from 4.404 to 4.381, and the median changes from 4.423 to 4.377. We see similar behavior for the responses to “Overall, the quality of the course content was excellent”.

Next, we check for changes in the higher moments of the distribution. The data we have immediately available are the percentiles of the scores on “Overall, this instructor was excellent” and “Overall, the quality of the course content was excellent” (see Table 2). The data in this table are the changes in percentiles for matched sections, from paper to eUSRI. A positive value means the percentile for the eUSRI response was higher than for the paper-based survey, and a negative value means it was lower. Firstly, we note that these data are consistent with the previous observation that the mean is unchanged, as they show the 50th percentile as

unchanged. Further, the data show that the distribution has broadened somewhat, with the 75th percentile increasing by 0.2 for both the “instructor” and “course content” questions and the 95th percentile increasing by 0.6 for both questions. On the other side of the mean, the 25th percentile decreases by 0.3 (instructor) and 0.2 (course content) and the 5th percentile decreases by 0.7 (instructor) and 0.6 (course content).

Question	Percentiles				
	5	25	50	75	95
Instructor	-0.7	-0.3	0.0	0.2	0.6
Content	-0.6	-0.2	0.0	0.2	0.6

Table 2. Differences in response percentiles

Interpretation

Overall, we interpret these data to mean that:

- an eUSRI ranking in the region around the 50th percentile, say in the middle half of the overall distribution, is within 0.2 to 0.3 of the ranking that would have been obtained from a paper-based USRI.
- an eUSRI ranking around the 75th percentile indicates a result that would have been 0.2 to 0.4 lower on a paper-based USRI. An eUSRI ranking around the 25th percentile indicates a result that would have been 0.2 to 0.4 higher on a paper-based USRI.
- an eUSRI ranking around the 95th percentile indicates a result that would have been 0.6 lower on a paper-based USRI. An eUSRI ranking around the 5th percentile indicates a result that would have been 0.6 to 0.7 higher on a paper-based USRI.

The usual recommendation with USRI results is that small differences should be ignored. Based on this approach, eUSRI rankings in the middle half of the distribution, from the 25th to 75th percentile, give results consistent with those from a paper-based USRI. However, eUSRI results in the upper or lower quarter of the distribution, above the 75th or below the 25th percentile, need to be interpreted carefully. Most particularly, as the 95th and 5th percentiles are approached, eUSRI results can differ in magnitude by 0.6 to 0.7 from a paper-based result.

In this regard, we offer two guidelines. The first is that USRI results, whether paper-based or electronic, should be referred back to the actual wording of what the students are indicating on the survey. That is, rather than just looking at numerical values and percentiles, those interpreting USRI results should always refer back to 3.0 indicating “Neutral”, 4.0 as indicating “Agree”, etc. Intermediate values on the scale from 1.0 to 5.0 are, clearly, the weighted response of the course section. A

result, for example, of 4.15 indicates that the students generally “Agree” or “Strongly Agree” – even if it is at the 5th percentile of the distribution.

Secondly, eUSRI results in the upper or lower quarter of the distribution must be treated with care when comparing them to paper-based results. The difference of 0.6 to 0.7 between eUSRI and paper-based surveys at the 95th and 5th percentiles is significant. This could easily be enough to change an average response of “Agree” to “Strongly agree”, or one of “Disagree” to “Strongly disagree”, respectively.

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 2. Avery, R.J., W. K. Bryant, A. Mathios, H. Kang, and D. Bell. "Electronic Course Evaluations: Does an Online Delivery System Influence Student Evaluations?." *Journal of Economic Education* 37, no. 1 (2006): 21-37.
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