

Comparison of IDEA Evaluation Scores: Fall 2012-2019 – Fall 2020

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The following is an aggregate comparison of IDEA Course Evaluations between Fall semesters spanning 2012 to 2019 compared to 2020.

Data

Data was included from all available enrollment semesters going back as far as 2012. Overall, the number of courses included in the initial dataset was over 54,000. The evaluation scores were then cut down to only Fall taught courses, and then averaged over the given time period. Fall 2020 evaluation data was made available, and for the purposes of this analysis would be the comparison for the previous years' average. I.e., two numbers were included for the relevant courses which had been taught in years previous as well as Fall of 2020, the average evaluation score over the past 7 years, and the evaluation score for Fall of 2020.

In the end, there were 648 eligible comparison courses that had evaluation metrics recorded.

In addition to the evaluation scores, each course was associated with a given response rate to the evaluations for each given semester. For the 7-year period these response rates were averaged similar to the eval scores, and for Fall 2020 they were left untouched.

Finally, in the advent of COVID-19, many courses over the last year were forced to change their method of delivery from Face-to-Face to either fully online or hybrid. A new feature was extracted to show if the Fall 2020 delivery method was different from the delivery method the course had previously been given in.

Analysis

Courses were grouped based on their course title and section, ensuring only the most accurate and least biased source of comparison. The 7-year period that the evaluation scores were averaged over will hereafter be referred to as "Pre-COVID" and Fall 2020 as such. In order to determine if there was a statistical difference in student perception of course quality (a pseudo-metric used for inference gathered from evaluation scores), the scores for Pre-COVID and Fall 2020 were compared statistically using robust T-Tests to compare the means between groups.

Comparison of IDEA Evaluations and Response Rates
Using Welch's T-Tests for Pre-COVID and Fall 2020

Metric Tested	Pre-COVID Mean	Fall 2020 Mean	Diff	Lower	Upper	p-val
IDEA Evaluations	3.744	3.687	0.056	-0.13	0.02	0.154
Response Rate (%)	63.695	58.257	5.437	-7.69	-3.17	<0.00

*Null Hypothesis: Mean differences between the two samples are statistically equal to 0.

*Alternative Hypothesis: Mean differences between the two samples are statistically different.

As is shown in the table above, the IDEA Evaluation averages for Pre-COVID taught courses vs. those same courses in Fall 2020 were statistically the same. We fail to reject the null hypothesis and state that between the two time periods, there was no increase or decrease in average student perception of quality during Fall 2020 compared to Pre-COVID. (See Appendix, figure 1 for a density plot of the relevant data)

Regarding response rates, the effect between Pre-COVID and Fall 2020 was the opposite, with the response rates between the two periods being statistically dissimilar. In this case we reject the null hypothesis at the highest level

of significance and state that during the two time periods, there was a statistical difference in response rates (See Appendix, figure 2 for a density plot of the relevant data).

Delivery methods were changed extensively over the course of the last year in the advent of COVID-19, forcing hundreds of courses to be taught online that had previously been taught in a face-to-face environment. Measuring these changes in delivery method was one of the topics of interest for this study, as it would be informative to know whether courses who changed their delivery methods from historical ones in Fall 2020 experienced statistical changes in evaluation scores or response rates.

Comparison of Delivery Method Changes for IDEA Evaluations and Response Rates
Using Welch's T-Tests for Pre-COVID and Fall 2020

Metric Tested	Same Deliv. Method	Changed Deliv. Method	Diff	Lower	Upper	p-val
IDEA Evals	3.682	3.751	0.069	-0.008	0.147	0.078
Response Rate (%)	58.043	64.154	6.110	3.862	8.359	<0.00

*Null Hypothesis: Mean differences between the two samples are statistically equal to 0.

*Alternative Hypothesis: Mean differences between the two samples are statistically different.

Based on the results shown in the table above, we again fail to reject the null hypothesis for IDEA evaluations. We can safely say there was no statistical difference between courses who changed their delivery methods vs. those who remained the same during the pre-COVID time period examined and Fall 2020. This means that courses who switched their delivery methods experienced no significant change in student perception of course quality.

Additionally, response rates were statistically different at the highest level of significance, meaning there was an inherent difference in the response rates for courses who changed their delivery method vs. those who kept their method the same. However, it should be noted that there was in fact an increase in the average response rate to student surveys, increasing by almost 6% during Fall of 2020 compared to pre-COVID times.

Summary

When comparing Pre-COVID-19 evaluation and response data to student perception of quality surveys to that of Fall 2020, a few key findings were identified and used for actionable insight moving forward in the higher education space for Utah State University:

- For comparable classes between previous years and Fall 2020, there was no inherent difference in the IDEA evaluation metrics for Fall 2020.
- Response rates for the two time periods were statistically different.
- For courses who changed their method of delivery, they experienced no statistical difference in student perception of course quality based on survey responses. This means that for online space shifts, there was no indicated loss of instruction quality based on student feedback.
- Response rates among courses who changed their delivery method from previous years did experience a statistical difference in the response rates for their surveys, but those who changed their method of delivery saw higher response rates than courses who remained the same.

Based on the information included in this analysis, with the 648 comparison courses examined, we can safely say that there was no difference in IDEA evaluations. The lack of data for spring 2020 leads to some assumptions about how concrete this effect is, as having that information would be informative in determining whether the immediate shift within spring 2020 caused any sort of change in student perception of course quality.

Appendix

Figure 1

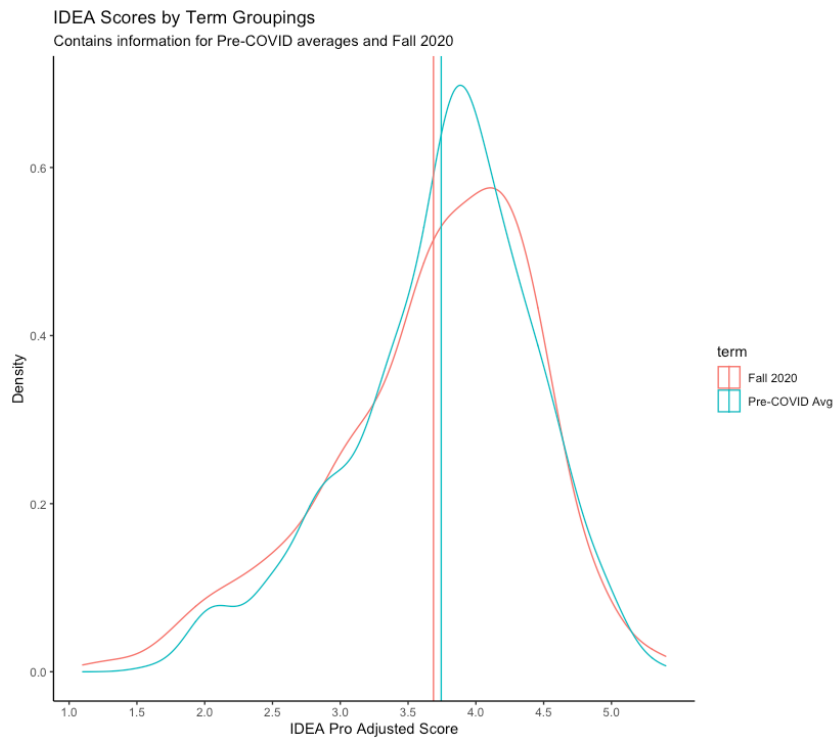


Figure 2

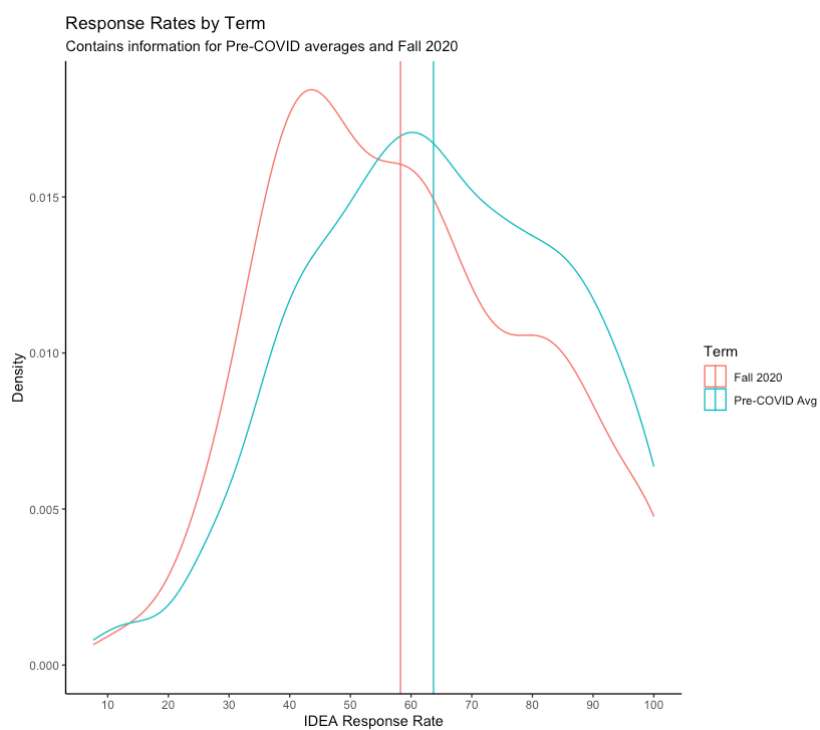


Figure 3

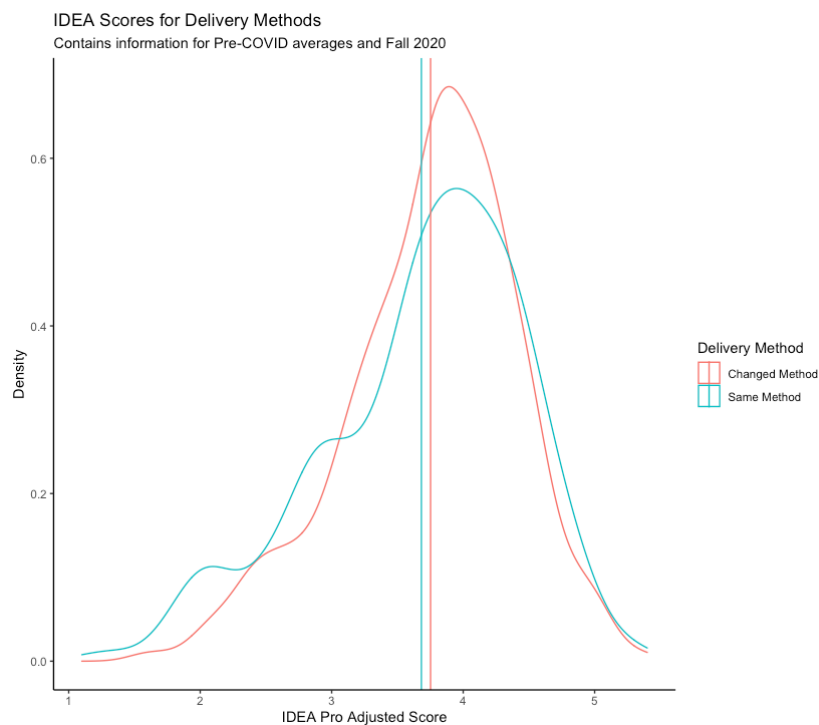


Figure 4

