

VARIATION IN STUDENT PERCEPTIONS OF HIGHER EDUCATION COURSE QUALITY AND DIFFICULTY AS A RESULT OF IMPLEMENTATION OF ONLINE LEARNING DURING COVID-19 PANDEMIC



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ABSTRACT

The onset of the COVID-19 global pandemic affected higher education in a myriad of ways. One of the most notable effects however was the rapid and sudden transition of nearly all courses to an online environment. And while there are a growing number of courses offered online already, this transition to nearly 100% remote education presented numerous challenges for instructors and students of face-to-face and hybrid style courses. This study utilized widely available course evaluations from RateMyProfessor.com to examine changes in student perceptions of course quality as well as difficulty as a result of this transition to remote learning. Using a general linear model of 837 course evaluations from 191 different schools an overall decline of 6% in perceived course difficulty and 4% decline in perceived quality was identified. In addition to calculating this mean decrease, courses were also categorized on the basis of academic discipline (Business, Engineering and Mathematics, Humanities, Natural Sciences, Social Sciences), institution size (2-Year, 4-Year), and whether instructors had previous experience teaching online courses (Yes, No) to determine any variation in differences that may have appeared as a result of more nuanced details in course type or delivery. Most notably, declines in course difficulty were even more apparent with instructors that had no previous online experience. No other discipline, institution size, or teaching experience interactions were detected with either difficulty or quality variation. These data suggest that there were very real changes in perceived quality and difficulty but that these changes were largely universal irrespective of discipline, institution size, or prior experience teaching online (with exception of course difficulty).

PROJECT BACKGROUND

- The distinction between online and traditional face-to-face instruction has narrowed tremendously over the past decade, shifting from what were stark differences between these forms of teaching into an increasingly gray space.
- This has been primarily a function of the evolution in instructional methods and technology used in classrooms today where online education has become increasingly interactive while face-to-face classes have been more commonly enhanced with online student activities performed outside the classroom (Bernard et al 2014,
- However, to the degree that differences still exist, it is likely that students' perceptions about course difficulty and quality also will differ.
- This conversation about how students perform in and feel about online vs face to face courses has become more relevant as the COVID-19 pandemic necessitated a shift to remote learning.
- Given the abrupt and recent timing of this transition, few studies have documented what kind of an impact this has had on student perceptions of educational experience.
- Thus, this study focuses on U.S. higher education student course satisfaction during the beginning of the COVID-19 pandemic.

PROJECT OBJECTIVES

- To assess the relationship between students' experiences of remote and online learning during the COVID-19 pandemic in Spring 2020 and other institutional factors.
- More specifically, this study utilized a large-scale dataset to disentangle whether differences in perceived quality and/or difficulty varied by institution size (2-Year vs. 4-Year), academic discipline (Business, Engineering and Mathematics, Humanities, Natural Sciences, Social Sciences), whether instructors had previous experience teaching online (Yes, No), or any combination of the above.

PROJECT METHODOLOGY AND RESULTS

This study used student evaluations posted to the RateMyProfessors.com website to compare perceptions of courses pre-COVID-19 to during COVID-19. Specifically, average ratings of course 'quality' and 'difficulty' were noted for courses that were taught both prior to the pandemic and during the pandemic which we defined as the two years prior to March 2020 and post March 2020 given the timing of when US Higher Education was largely shifted online due to rapid spread of the virus. This included several years of pre pandemic data and one semester of pandemic data.

- For this study, 837 student evaluations were collected from approximately 191 different schools documented on RateMyProfessors.com over a three-month period from November 2020 through January 2021. A general linear model was used to evaluate whether variation in course quality or difficulty (calculated as course mean post March 2020 minus course mean pre March 2020) was dependent on academic discipline (Business, Engineering and Mathematics, Humanities, Natural Sciences, Social Sciences), institution size (2-Year, 4-Year), whether instructors had previous experience teaching online courses (Yes, No), and all 2-way interactions. Linear modeling was implemented in the base stats package of R (R Statistical Environment 2021).

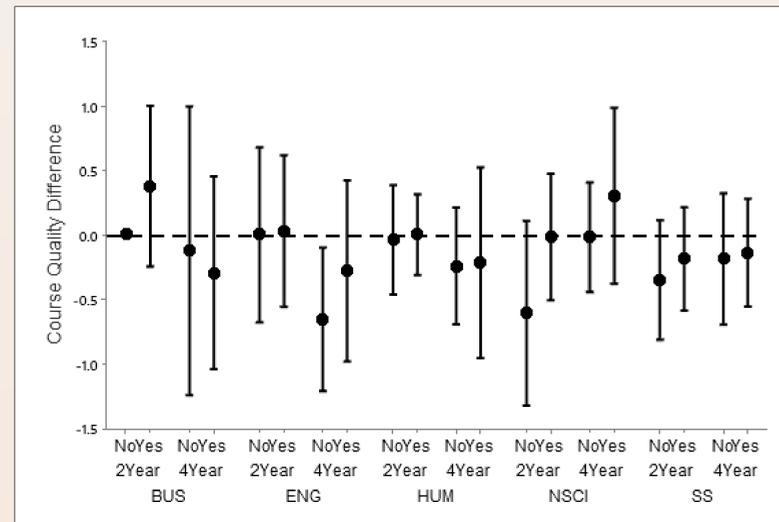


Figure 1: Course Quality Variation Pre-Post COVID

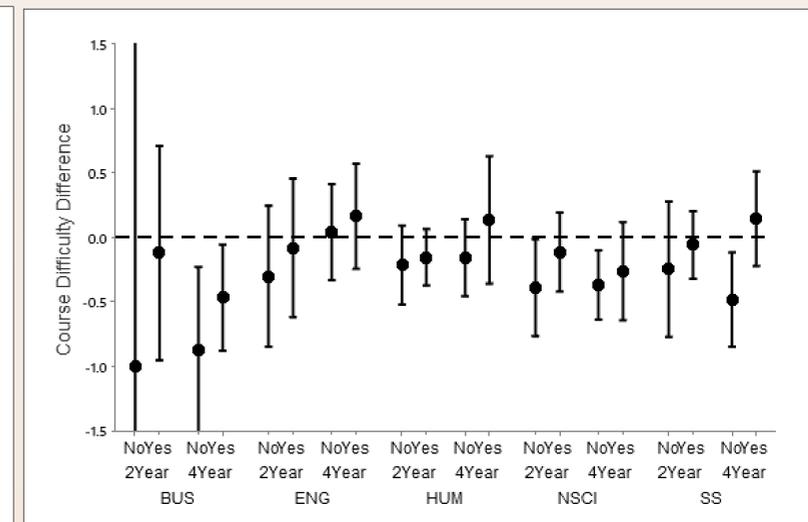
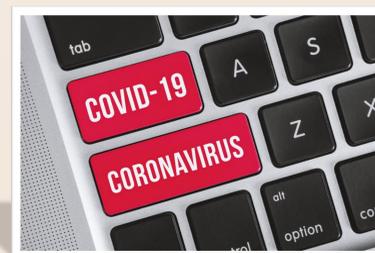


Figure 2: Course Difficulty Variation Pre-Post COVID



RATING: **3.7** STARS



PROJECT IMPLICATIONS

- An overall decline of 6% in perceived course difficulty and 4% in perceived quality was identified. This was exacerbated in courses taught by instructors with no prior online teaching experience.
- No other factors seemed to contribute to the overall global effect in the dataset, indicating that the declines in perceived difficulty and quality were consistent across disciplines and institutions.
- These results have implications for better understanding patterns in recruitment and retention in the years that follow this largescale shift to online remote instruction.
- These results also indicate a need for additional training and preparedness of online modules for courses should a similar event occur in the future.

RATE MY PROFESSORS