Learning During the Pandemic: Observations and Suggestions

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ABSTRACT

On-line learning during the past three semesters, Spring, 2020 through Spring, 2021, has changed the educational delivery paradigm in higher education, perhaps forever. Hitherto, the literature regarding the efficacy of on-line vis-à-vis in-class learning has been affected by the self-selection bias of on-line learners. No longer. The past three semesters have compelled everyone into the on-line learning space. Regardless of the efficacy of on-line learning, students overwhelmingly prefer an in-class experience. However, on-line learning has provided an option, without which education on all levels would have ceased altogether. This research demonstrates that offering students' options, in-class *and* on-line simultaneously, has merit. But results are complicated. While "remote-learning fatigue" is evident, with passage of time more students seemed to have acquiesced to the normalcy of on-line learning, however less appealing. The recently emerged Delta variant serves notice that the Pandemic is not over.
Keywords: In-class, on-line, remote learning, Zoom, hybrid, COVID

INTRODUCTION

Educators assert on-line learning is at least as good as in-class (Allen & Seaman, 2013). Others contend that on-line learning does not replicate the learning that takes place in the classroom (Bejerano, 2008). There's an assumption that usage of information technology in a classroom will contribute to student learning (Peng, 2009). During the pandemic period of the past three semesters, many students who would otherwise not opt into on-line learning had no choice. This dimension is new and impacts the literature, hitherto comprised largely of students self-selecting into on-line courses. Lacking self-selection bias, results herein shed light on the complexities of the learning during the past two semesters.

LITERATURE REVIEW

Several papers found that student performance in on-line learning environments is better than in-class (Harmon, Alpert, & Lambrinos, 2014; Means, Toyama, Murphy, Bakia, & Jones, 2010). Others find that in-class education results in better student outcomes than on-line learning outcomes (Flanigan, 2014; Mahmood, Mahmood & Malik, 2012; Metzgar, 2014; Verhoeven & Rudchenko, 2013).

Yet other research finds no difference in student performance between in-class and on-line learning (Cavanaugh, & Jacquemin, 2015; Ni, 2013; Olitsky & Cosgrove, 2014; Stack, 2015;). Research suggests the importance of assessment activities used to evaluate student performance. This will vary with subject matter but influences the efficacy of on-line learning overall (e.g. Braunscheidel, Fish & Shambu, 2013; Weldy, 2018).

These studies were conducted in a variety of business and non-business courses, for graduate and undergraduate students, with large and small sample sizes and at different sized institutions. There remains a lack of consensus on the efficacy of on-line versus in-class learning.

The emergent Delta variant of COVID suggests alternative modes of instruction will continue depending upon the vaccination and infection rates of specific counties. (CDC, 2021). What's more, over one-third of college students have changed their plans for Fall, 2021, choosing a school closer to home, attending an online university or going to a less-expensive alternative (CNBC, 2021). We are far from out of the woods.

RESEARCH DESIGN AND METHODOLOGY

During the last two weeks of Fall, 2020, and Spring, 2021, semesters, students were asked to complete a survey of their learning experiences during the COVID period. A Likert scale is utilized, from which students chose one option that best aligns with their view. Likert scales are commonly used to measure respondents' attitudes by asking the extent to which they agree or disagree with a particular question or statement. A five-point scale was utilized, 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree. The survey instrument is found in the Appendix, with summary statistics. Students queried were enrolled in upper-level finance courses, two courses each semester, as a comprehensive state university in the Upper Midwest. Of 41 students in Fall, 2020, 28 complete surveys were received for a response rate of 68%. Thirty-one of 36 students in Spring, 2021, completed the survey, for an 86% response rate.

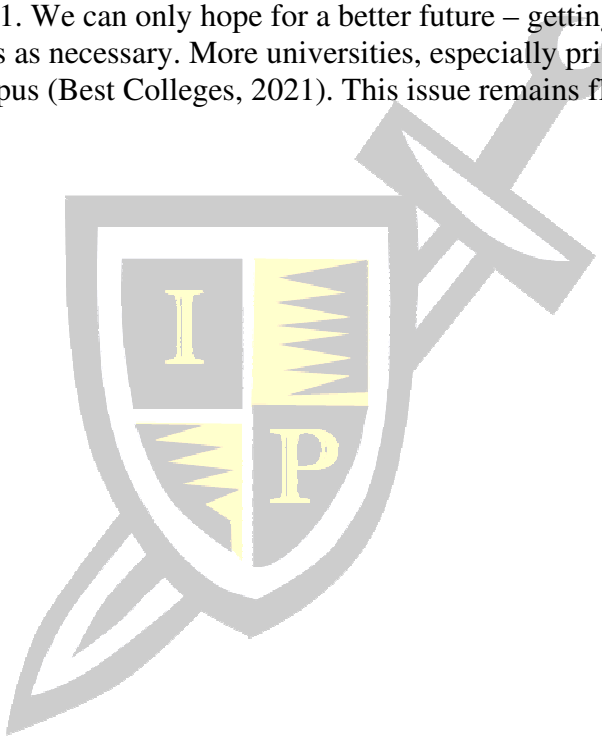
The relatively high response rate may be due to a captive market, my students, as well as a small upgrade in a homework assignment grade if the survey was completed. Performance outcomes, and testing for significant differences between means, were measured using a paired *t*-test for independent samples between Fall, 2020, and Spring, 2021, semesters. Important to note that all courses assessed offered three options: In-class, hybrid, or totally on-line. Hybrid and on-line were via Zoom. All learning was synchronous. Students were thus given choice of three learning modes during both semesters: in-class, hybrid, and on-line.

FINDINGS

As survey results reveal, on-line learning works, but is not popular. In fact, in-class learning is strongly preferred to remote learning, as results indicate for both semesters. At my institution enrollments held steady, indicating a tolerance for a less preferred modes of instruction. Students did show a significantly stronger preference for synchronous learning in Spring, 2021, compared to Fall, 2020 (question 3). Moreover, students were significantly less likely to take an on-line course after their experience during the Pandemic (question 10). This may indicate "COVID fatigue," as well as a desire for more structure. Offering choice is good. Students were strongly in favor of options, in-class *and* virtual access.

CONCLUSION

The recent Pandemic experience in higher education demonstrates that we can be open for business, however less desirable in on-line mode. Offering choice of educational delivery methods is promising. Modes of instruction need not be mutually exclusive. Options work, and may ameliorate COVID fatigue, as evidenced in these findings. The Delta variant may mitigate a return to normal for Fall, 2021. We can only hope for a better future – getting vaccinated and undertaking other precautions as necessary. More universities, especially private, are mandating vaccination for return to campus (Best Colleges, 2021). This issue remains fluid and uncertain.



APPENDIX

Survey Instrument
Fall, 2020 / Spring, 2021

Question	Mean, Fall, '20	Mean, Sp., '21	P-value*
1. On-line learning works well for me.	3.57	3.35	.3129
2. Asynchronous learning works well for me.	3.89	3.81	.6992
3. Synchronous (real time) learning works well for me.	3.53	3.94	**.0961**
4. Real -time learning works well for me, with Zoom and on-line options.	4.00	3.97	.8851
5. Real time learning works well for me, with Zoom, on-line, AND in-class options.	4.25	4.19	.7921
6. Regarding on-line delivery, the quality of the educational experience is superior to in-class delivery.	2.53	2.58	.8774
7. Regarding on-line with a Zoom option, I like the choice this offers.	3.93	4.03	.5782
8. Regarding on-line with a Zoom option, I like remote access to a real-time class.	3.53	3.77	.3440
9. Regarding on-line with a Zoom option, I like real-time interaction.	3.96	3.97	.9877
10. I am more likely to take on-line courses in the future based on my experience during the Pandemic.	3.14	2.61	**.0852**

P-value significance level = .10.

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