

Learning Online: Unintended Consequences for Engagement?

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Introduction

- o A rapidly increasing number of colleges and universities are looking for ways to deliver course content online
- o Online technology (email, listservs, discussion boards, video conferences, etc.) can offer efficient, convenient ways to achieve learning goals for distance education students
- o While numerous researchers have explored the impact of this widespread adaptation of digital technologies on students' educational attainment and learning outcomes, relatively little is known about how these alternate learning experiences and practices impact student engagement

Literature Review

- o Technology can have positive effects on student engagement (Hu & Kuh, 2001; Nelson Laird & Kuh, 2005; Robinson & Hullinger, 2008)
- o Using asynchronous technology tools promoted reflection, which leads to higher order thinking (Robinson & Hullinger, 2008)
- o Online courses increased the need for students to work collaboratively (Thurmond & Wambach, 2004)
- o Online students may have different background characteristics that should be taken into account (Wojciechowski & Palmer, 2005)

The Current Study

- o Main purpose: To address gaps in the literature through the examination of exposure to online and face-to-face settings across several different aspects of student engagement
- o This study also:
 - o Addresses the fact that many higher education students are taking a mixture of online and traditional classroom courses

Method: Participants

- o Data from the National Survey of Student Engagement (NSSE) 2015 administration
- o 300,543 first-year and seniors students attending 541 U.S. institutions
- o Institutions represented variety of regions, Carnegie classifications, and enrollment sizes
- o 35.0% males and 65.0% females
- o 88.5% with full-time enrollment status
- o 7.2% of students taking all courses online and 76.1% taking no courses online

Method: NSSE Details

- Annually collects information from first-year and senior students about the nature and quality of the programs and activities in which they are engaged while at their higher education institutions
- Updated in 2013
 - Much of the terminology on the survey was developed with the goal of being inclusive of both online and traditional learning environments
- U.S. and Canadian 4-year institutions eligible for standard administration

Method: NSSE Details (cont.)

- Translations/adaptations to items made for use in at least 28 countries
- Many nation-wide licenses:
 - Australian Council for Educational Research (AUSSE)
 - University of the Free State (South Africa) (SASSE)
 - NSSE-China
 - Irish National Student Survey
 - The Higher Education Academy (UK)
 - The Expert Committee on Quality in Higher Education in Denmark
- Countless single institution licenses and usages in international dissertation studies

Method: Measures

- **Percentage of online courses**: calculated from two items that ask about the number of total courses the current term and the number of those courses that are entirely online
- **Ten scales (“Engagement Indicators”)**: higher-order learning, reflective and integrative learning, quantitative reasoning, learning strategies, collaborative learning, discussions with diverse others, student-faculty interactions, effective teaching practices, quality of interactions, and supportive environment
- Additional **demographic information**: student-reported and institution-reported

Method: Analyses

- A series of ten OLS regression analyses, controlling for certain student and institutional characteristics, were conducted for both first-year and senior students
- Control variables
 - Student characteristics: gender, transfer status, enrollment status, first generation status, age, SAT/ACT, major, race/ethnicity, grades
 - Institutional characteristics: control (private/public), size, online institution status
- Percentage of online courses was entered as the predictor variable
- Each of the Engagement Indicators was an outcome variable in a separate model

Regression Results^a

	First-Year R ²	Fist-Year β	Senior R ²	Senior β
Higher-order Learning	.021***	NS	.027***	NS
Reflective & Integrative Learning	.034***	NS	.070***	NS
Learning Strategies	.036***	.009*	.044***	NS
Quantitative Reasoning	.050***	.013***	.100***	NS
Collaborative Learning	.037***	-.025***	.080***	-.087***
Discussions with Diverse Others	.017***	-.011**	.020***	-.013**
Student-Faculty Interaction	.036***	NS	.075***	-.048***
Effective Teaching Practices	.025***	-.008*	.028***	-.022***
Quality of Interactions	.038***	-.019***	.027***	-.012**
Supportive Environment	.021***	NS	.027***	NS

* $p < .05$, ** $p < .01$, *** $p < .001$

^aControlling for Student characteristics: gender, transfer status, enrollment status, first generation status, age, SAT/ACT, major, race/ethnicity, grades & Institutional characteristics: control (private/public), size, online institution status

Discussion

- o The online environment might encourage certain types of engagement, such as more frequent use of **learning strategies** in first-year students
- o Somewhat supports previous literature (Robinson & Hullinger, 2008)
 - o Richardson and colleagues (1999) found that distance learning students had more rigorous approaches to studying, and these approaches to studying were related to academic success in the form of pass rates and final grades
- o Online format relies on more independent self-regulation from the students to read material, watch videos, and complete a variety of other tasks involved with course assignments

Discussion (cont.)

- First-year students with more online course exposure were also more likely to report higher **quantitative reasoning**
- May be related to the nature of core courses more likely to be adapted to online environment
- Disciplines such as business and nursing commonly offered in online format (Friedman, 2014) and tend to have higher use of quantitative reasoning skills
 - Also are many course management systems geared specifically to STEM fields (i.e. MyMathLab)

Discussion (cont.)

- o However, those students with greater exposure to online formats showed less engagement in **collaborative learning** activities
- o This result is somewhat in opposition to other research that has been done on effective uses of student collaboration in online environments (Thurmond & Wambach, 2004)
- o Important to create the sense of a community of learners in an online course, since technology lacks human component and can lead to feelings of isolation (Cohen, 2003)

Discussion (cont.)

- Online learning environments also seemed to be less conducive to **student-faculty interaction** (for seniors) and to **effective teaching practices**
- Previous research suggests that online courses require more time from faculty (Tomei, 2006)
 - Answering numerous logistic questions can take instructor time away from sharing course content, and instructors with adjunct status may be limited to using pre-established syllabi and assignments
- The formality of institution-provided email and course management systems may be hindering online students' perceptions of faculty interaction
 - Pakkaew (2013) found that online students had greater course success when using social media (Facebook) for chat and messaging with instructors and tutors

Discussion (cont.)

- o Both first-year and senior students with more exposure to online learning had less frequent **discussions with diverse others**
- o This finding may stem from the anonymity of the online environment
- o Discussions may actually be happening, but students may not be aware that their classmates have diverse characteristics
 - o But students must know about the diversity in order to benefit from the interaction
- o Faculty could address this by having students introduce themselves and disclose information about their background, or introduce video components into the course

Discussion (cont.)

- o Both first-year and senior students with more exposure to online learning had lower **quality of interactions**
- o This finding may also be due to a perceived anonymity of the online environment
- o Students may feel lack of personal connection to their institution because they do not experience a physical “campus” space
 - o May be an increased difficulty in accessing staff or administrators with questions or concerns

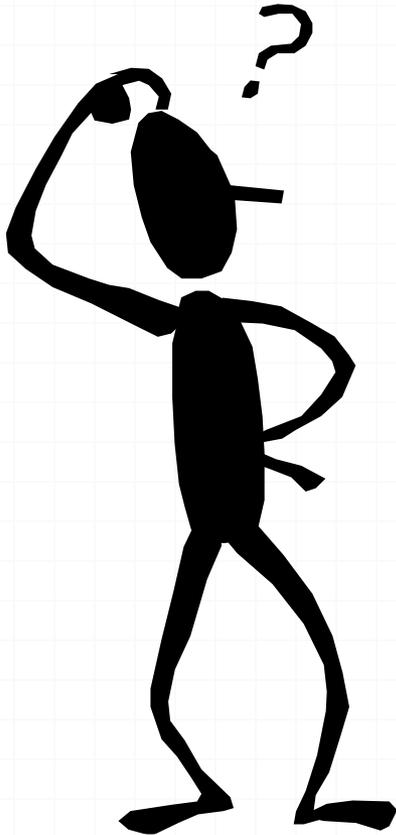
Limitations

- Online data collection relies on self-reported measures
 - Although studies suggest that self-reported and actual abilities are positively related (Hayek et al., 2002; Pike, 1995)
- This study was not designed as a project to look strictly at online education
- Relatively small effect sizes
- Since participation in NSSE is voluntary for institutions, they are not selected randomly or to create a representative sample of institutions
 - Although this is a concern, when compared to national data, the institutions in NSSE 2015 do mirror that of the national picture (National Survey of Student Engagement, 2015)

Conclusions

- With the proliferation of online learning in higher education, the need to understand the engagement and gains of students who only have an opportunity for an online atmosphere increases
- While there may be some benefits of online learning in the realm of engagement, it seems that there are also some sacrifices online learners make when it comes to an engaging educational experience
- These findings open the door to more inquiry:
 - Further research might look at specific online tools and techniques, both general and discipline-specific, as well as disciplinary differences between academic majors

Questions? Comments?



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*All references available upon request or in full paper