Investigating the Impact of Online Classes on Degree Completion

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Presentation Overview

1. Literature Review

2. Purpose of the Study

3. Methodology

   a. Research Design

   b. Data Sources

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Literature Review

Literature Review

Students Taking One or More Online Classes

- National Center for Education Statistics
- Fall 2017: 33% of all postsecondary students (was 25% in 2012)

- "normalization of online learning"
  Doug Lederman, "Online Education Ascends", Inside Higher Ed, 11/7/18

All Enrollments and Online Enrollments, 2016 and 2017

|	2016	% of 2016 Total	2017	% of 2017 Total	% Change, 2016-17
All Students	20,224,069		20,135,159		-0.44%
Enrolled Exclusively Online	2,974,836	14.71%	3,104,879	15.42%	4.19%
Enrolled in Some Online Courses	3,325,750	16.44%	3,552,581	17.64%	6.38%
Enrolled in No Online Courses	13,923,483	68.85%	13,477,699	66.94%	-3.31%

Literature Review

Students Taking One or More Online Classes

- National Center for Education Statistics
- Fall 2017: 33% of all postsecondary students (was 25% in 2012)
- Indiana University: 32.5% in Fall 2018

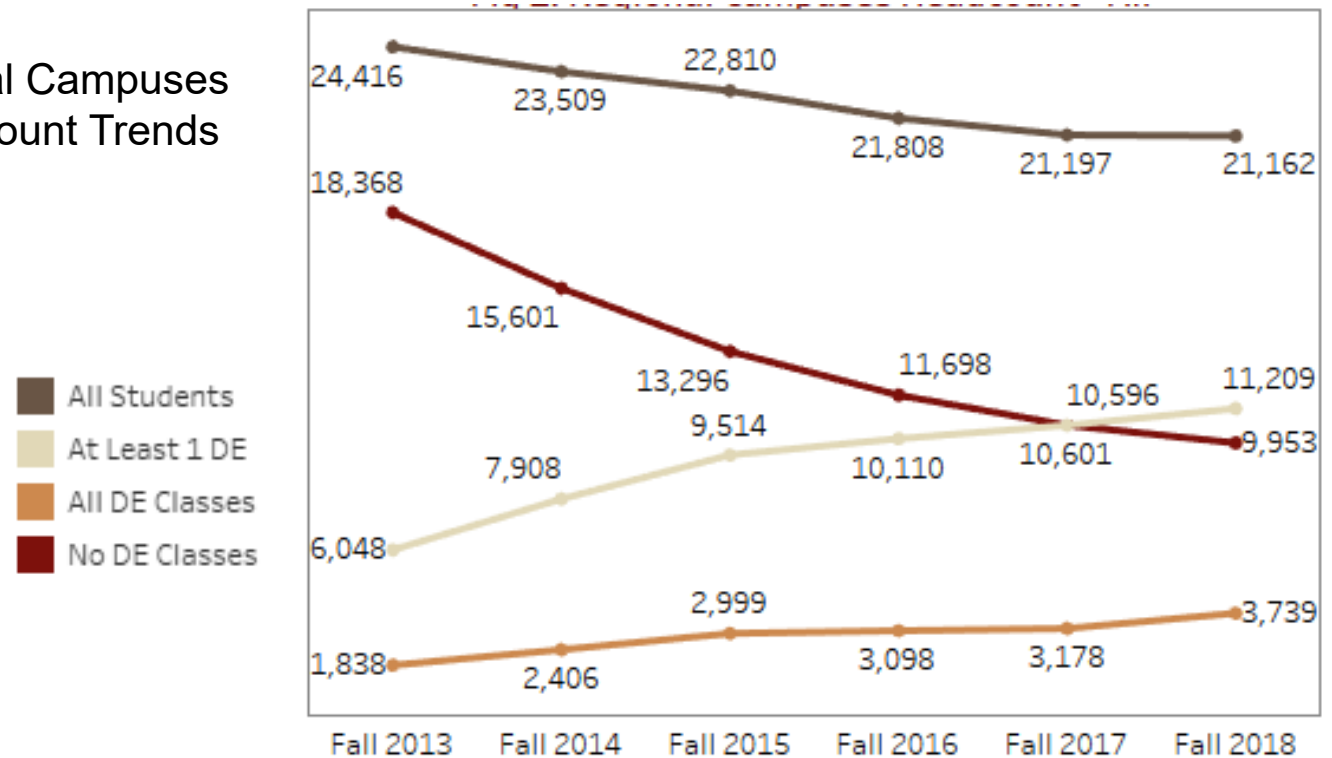Indiana University
Fall Headcount Trends
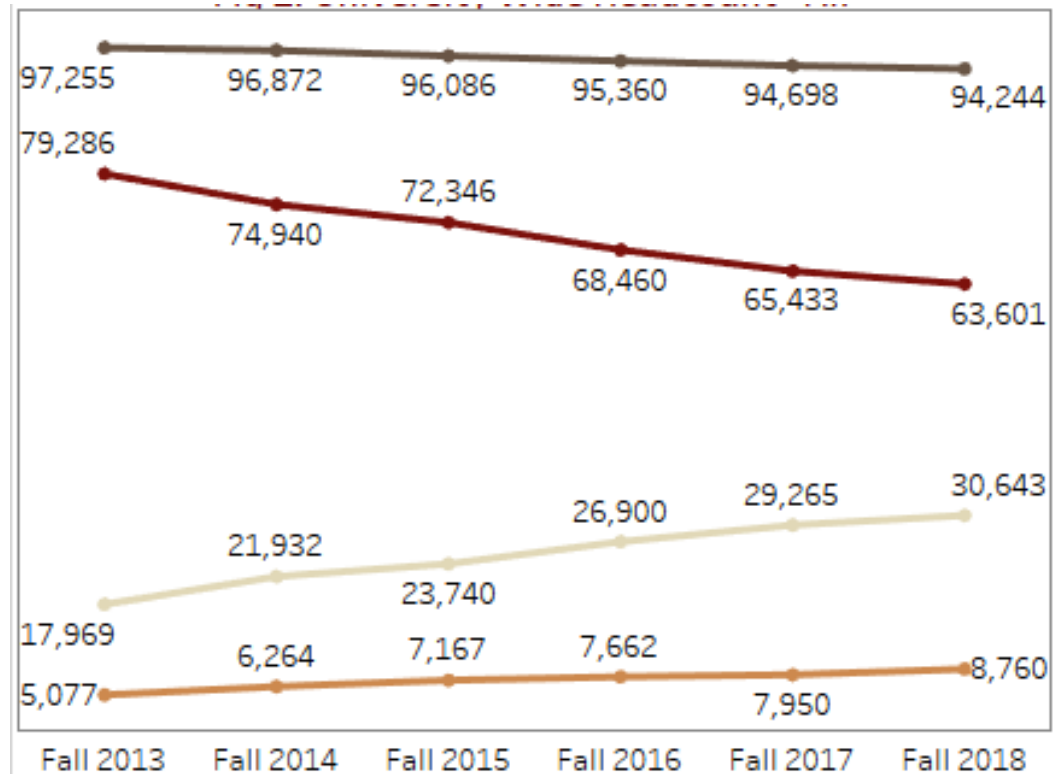
Literature Review

Students Taking One or More Online Classes

- National Center for Education Statistics
- Fall 2017: 33% of all postsecondary students (was 25% in 2012)
- IU Regional Campuses: 53% in Fall 2018

IU Regional Campuses
Fall Headcount Trends

Literature Review

Online Course Impacts on Course Completion

Study	Course Completion Outcomes
Jaggars & Xu (2010)	Students more likely to fail or withdraw from online course
Xu & Jaggars (2011)	Students more likely to fail or withdraw from online course
Johnson, Cuellar Mejia & Cook (2015)	Pass rates in online courses lower than traditional face to face
James, Swan & Daston (2016)	Online courses do not impact course completion rates
Shea & Bidjerano (2017)	Online course GPAs lower relative to on campus course GPAs
Hart, Friedmann & Hill (2018)	Outcomes in online courses poorer than face to face

Literature Review

Online Course Impacts on Degree Completion

Study	Degree Completion Outcomes
Jaggars & Xu (2010)	Taking online classes in early semesters lowers retention and degree attainment
Xu & Jaggars (2011)	Taking online classes in early semesters decreases retention, and a high % of online classes slightly decreases completion
Pontes & Pontes (2012)	First-generation low income students taking online classes show increased progress toward degree
Shea & Bidjerano (2014)	Early participation in online predicts higher rates of degree attainment, even for those at risk
Shea & Bidjerano (2016)	Significantly more students engaged in online classes attained a degree than those who did not; women students graduate more quickly when taking online classes
Shea & Bidjerano (2017)	Students taking online and on campus classes 1.5 times more likely to complete degree; female, white, full-time, older students more likely to take online and on campus
Shea & Bidjerano (in press)	Higher proportions of online classes decreases degree completion (tipping point = 40%)

Purpose of the Study

Purpose of the Study

Research Question 1:

Does taking one or more online classes during a student's program of study increase the likelihood that a first-time, full-time undergraduate student will complete their degree within 150% of the stated program length?

Research Question 2:

Is there a difference in student performance, as measured by course grades, between online and on campus classes?

Definitions

Online (broad definition):

Any course that uses technology to deliver instruction to students who are separated from their instructor - supporting regular and substantive interaction between the student and instructor - 76-99% of the time.

May be synchronous or asynchronous, including live video and/or audio conferencing.

On Campus:

A course that does not meet the above definition, including face-to-face, hybrid (on campus and online), internships, and independent study

SECTION 3

Methodology

Methodology

Research Design

Quantitative analysis of existing data

Data Sources

Official University Census Graduation Rate Data (Excel)

Degree completion indicator (150% of program length), Campus Type, Pell/Stafford indicator, tuition residency, age at time of enrollment, ethnicity, gender, first generation status, SAT/ACT composite score, 1st semester GPA

Official University Census Course Enrollment Data (SQL)

Online credit hours and quality points, on campus credit hours and quality points, calculated online GPA, on campus GPA, "1 or more online" indicator, online percentage

Data Analysis

Demographic Analysis: Crosstabs, ANOVA

Research Q1: Logistic Regression

Research Q2: Paired samples t-test

SECTION 4

Results

Results – Demographics by Campus Type

	All Campuses	Flagship	Urban	Regional
All Students (N)	12,840	6,935	2,647	3,258
Resident Students (%)	79%	63%	95%	98%
Pell/Stafford Recipient (%)	51%	38%	65%	67%
Female (%)	56%	52%	60%	60%
Underrepresented Minority (%)	15%	13%	18%	19%
First Generation (%)	31%	19%	42%	46%
Average Age	18.9	18.6	18.9	19.6
Average SAT/ACT Composite Score	1100	1199	1013	944
Average 1st Semester GPA	2.84	3.06	2.78	2.44
Students Taking 1 or More Online Class (%)	40%	29%	64%	46%
Students Completing Degree (%)	59%	77%	47%	30%
% Completion: Students Taking At Least 1	**69%**	**85%**	**65%**	**52%**
% Completion: Students with No Online	**52%**	**74%**	**16%**	**12%**

- Differences by campus type significant at $p<.01$ level for all variables
- Bonferroni corrections: Gender, Pell/Stafford, and Underrepresented minority different between flagship campus and urban/regional, not between all 3 groups

Results – Demographics by 1 or More Online

	All Students	No Online Classes	One or More Online Class
All Students	**12,840**	**7,666**	**5,174**
Resident Students (%)	79%	73%	87%
Pell/Stafford Recipient (%)	51%	49%	55%
Female (%)	56%	53%	61%
Underrepresented Minority (%)	15%	15%	15%
First Generation (%)	31%	27%	35%
Average Age	18.9	18.9	18.9
Average SAT/ACT Composite Score	1100	1125	1063
Average 1st Semester GPA	2.84	2.75	2.98
Students Completing Degree (N)	**7,557**	**3,988**	**3,569**
Students Completing Degree (%)	**59%**	**52%**	**69%**

Differences by online class category significant at $p<.01$ level for all variables except age and underrepresented minority.

Results – RQ#1 Logistic Regression

Variable	Flagship		Urban		Regionals	
	Sig.	Odds Ratio	Sig.	Odds Ratio	Sig.	Odds Ratio
Age at time of enrollment	n/a	n/a	.348	.410	.130	.347
SAT/ACT composite score	.530	1.000	.017	1.001	**.005**	**1.001**
1st semester GPA	**.000**	**3.922**	**.000**	**3.463**	**.000**	**3.211**
Took at least one online class	**.000**	**2.662**	**.000**	**8.067**	**.000**	**6.177**
Pell/Stafford recipient	**.000**	**.695**	.051	.804	.120	.847
Gender (Female)	.040	1.152	.023	.780	.853	.980
First generation student	**.001**	**.751**	**.000**	**.609**	**.003**	**.733**
Underrepresented minority	.127	.872	.756	1.043	**.000**	**.555**

Models correctly predicted degree completion at 81% (flagship), 76% (urban), 78% (regionals)
Nagelkerke R^2 = .279 (flagship), .470 (urban), .435 (regionals)

Results – RQ#2 Paired Samples *t*-tests

Campus Type	Online		On Campus	
	M	SD	M	SD
All Campuses	2.84	1.19	2.79	0.65
Traditional Flagship	3.04	1.11	2.90	0.51
Urban	2.87	1.14	2.78	0.71
Regionals	2.56	1.29	2.66	0.71

All differences were significant at *p* < .05
Effect size was small in all cases

Discussion/Questions

Discussion

"Online Paradox" (Shea & Bidjerano, 2017)
- Similar findings – online classes as a predictor of degree completion
- Mixed findings – online class performance

Special Populations – Students taking online classes are more likely to be:
- Financial Aid recipients
- Female
- Have lower SAT scores, but higher first semester GPAs
- *So What?*

Future Work:
- "Tipping Point" – use proportion of classes taken online
- Online class timing – is summer significant? Early online?
- Students as Digital Consumers
- Transfer Students

Session Evaluations & Drawing

- Download and open OLC Conferences mobile app

- Navigate to specific session to evaluate

- Select "Evaluate Session" on session details screen (located under session type and track)

- Complete session evaluation*

👍 Evaluate Session

*Each session evaluation completed (limited to one per session) = one contest entry
Five (5) $25 gift cards will be awarded to five (5) individuals
Must submit evals using the OLC Conferences mobile app or website

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