

Who Benefits from Online Learning?

Assessing the Impact of Online Learning on Student Success at Dallas College.

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Introduction

- Distance learning is not a new phenomenon.
- It has origins dating as far back as the 1800's.
- Current definitions refer to classes where the delivery mode is entirely online.
- Dallas College offers curricula that include courses that are fully online, hybrid, and entirely face-to-face.



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Quick Facts

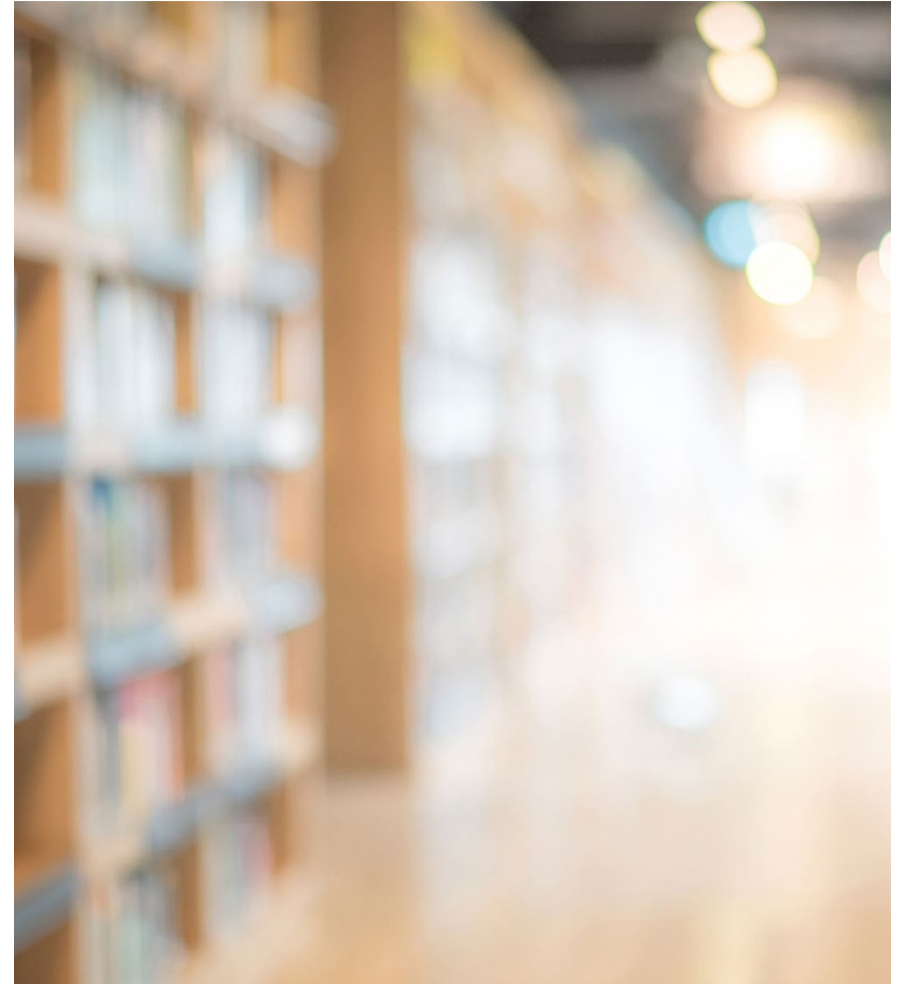
- More than 53% of Fall 2023 courses at Dallas College had an online option.
- Approximately, 67% of Dallas College students were enrolled in online courses for Fall 2023.





Purpose of Study

- The rapid growth in the demand for online learning creates a need for Dallas College to understand its student population.
- The influence of different proportions of online enrollment on student success is assessed.
 - Attention is given to Asian, Black, Hispanic, and White students.





Research Question

To what extent does the proportion of online enrollment influence Dallas College's students' likelihood of success?



Past Research

- Currently, almost 30% of students in higher education take at least one course online, and the trend is growing faster than the general growth in higher education (Allen and Seaman, 2010).
- The primary debate in the literature focuses on the effectiveness of online versus face-to-face classrooms (Driscoll et al. 2012).
 - The literature supports (Tucker 2001; McFarland and Hamilton 2005; Summer et al. 2005; Parkhurst et al. 2008; Russell 1999) and refutes (Logan, et al. 2002; Urtel 2008) the ability of online courses to similarly provide a learning experience comparable to face-to-face classes.



Past Research (cont'd)

- Faculty are required to design curriculums, grade assignments, maximize instructional quality, and answer questions, to name a few. Students still have to attend class, submit assignments and learn the material (Paul and Jefferson, 2019).
- This sort of flexibility and mobility, coupled with the reduction in transportation and parking costs, no commute time, and lack of issues with appearances or dress makes the online education process enticing (Lei & Govra, 2010; Macon, 2011).
- Face-to-face classes offer the benefits of the feeling of community and class interaction (Holmberg-Wright & Wright, 2012).



Methods



- A combination of logistic regressions, descriptive statistics, correlation analyses, and cross-tabulation analyses is applied.
- The primary approach used is the propensity score weighting (PSW) technique.
 - This approach addresses the problem of selection bias that frequently arises in studies of this type.



Why This Approach



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- PSW achieves balance by reweighting the population using a function of the propensity score.
- A pseudo-population is created.
- The outcome regression becomes a weighted model where the treatment status becomes the only independent variable.
- Overall, the application of conditional probabilities to treatment groups makes it possible for selection bias to be reduced and the balance between non-equivalent groups to be improved.



Data

- First time in college students (FITC) data from fall 2014 to fall 2019.
- Enrollment in different proportions of distance learning courses throughout the first three years are examined.
- Treatment variables capture varying levels of online enrollment including:
 - 1-24%,
 - 25-49%,
 - 50-74%,
 - 75-99%,
 - and 100%





Data Table – Proportion of Online Courses by Ethnicity

Variables		Proportion of Online Courses													
		0% Online		1%-24% Online		25%-49% Online		50%-74% Online		75%-99% Online		100% Online		All Students	
		Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Ethnicity	Asian	622	16.2%	907	23.7%	1,190	31.1%	742	19.4%	236	6.2%	131	3.4%	3,828	100.0%
	Black	3,185	25.9%	1,989	16.2%	2,822	22.9%	2,236	18.2%	881	7.2%	1,197	9.7%	12,310	100.0%
	Hispanic	9,327	26.2%	7,738	21.7%	9,657	27.1%	6,329	17.8%	1,429	4.0%	1,110	3.1%	35,590	100.0%
	White	2,422	25.2%	1,885	19.6%	2,197	22.9%	1,575	16.4%	577	6.0%	945	9.8%	9,601	100.0%
	Other	94	24.7%	87	22.8%	94	24.7%	61	16.0%	22	5.8%	23	6.0%	381	100.0%
	Not Reported	590	25.3%	470	20.2%	589	25.3%	389	16.7%	125	5.4%	168	7.2%	2,331	100.0%
Total		16,240	25.4%	13,076	20.4%	16,549	25.8%	11,332	17.7%	3,270	5.1%	3,574	5.6%	64,041	100.0%





Key Findings: Who are Enrolling in Online Courses

- Male students are more likely to enroll fully face-to-face (31.3%) than female students (20.0%).
- On average 24.5% of students within the age range of 35-64 take their coursework fully online.
- 72.3% of students 65 and older, enroll in their classes fully face-to-face.





Data Table – Proportion of Online Courses by Economic Status

Variables		Proportion of Online Courses													
		0% Online		1%-24% Online		25%-49% Online		50%-74% Online		75%-99% Online		100% Online		All Students	
		Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Poor_Flag	No	9,851	60.7%	7,033	53.8%	8,340	50.4%	5,476	48.3%	1,557	47.6%	1,870	52.3%	34,127	53.3%
	Yes	6,389	39.3%	6,043	46.2%	8,209	49.6%	5,856	51.7%	1,713	52.4%	1,704	47.7%	29,914	46.7%
Total		16,240	100.0%	13,076	100.0%	16,549	100.0%	11,332	100.0%	3,270	100.0%	3,574	100.0%	64,041	100.0%

- The data does not indicate online enrollment resulting from economic status





Key Findings: Student Success

- 23.3% of students achieved success
- Asian students have the highest three-year success rate (37.1%) of all ethnic groups.
- Black and Hispanic students have the lowest success rate of all ethnic groups (approx. 21.0%)
- Enrollment in 0% distance learning courses have the lowest success rate (17.8%).
- Enrollment in 100% distance learning courses had the second lowest success rate (34.4%)



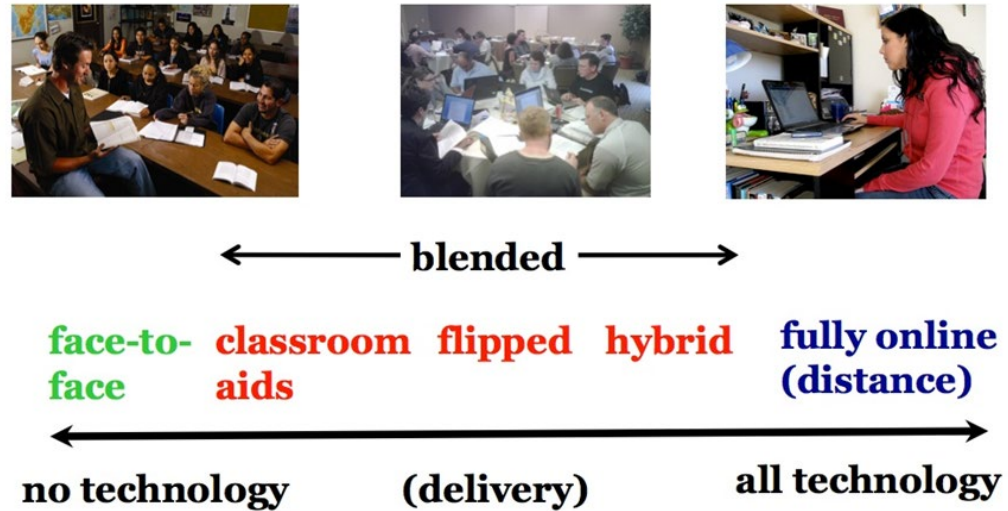


Key Findings: Student Success (Data Table)

Percent Success in the Proportions of Online Enrollment														
Ethnicity	0% Online		1%-24% Online		25%-49%		50%-74%		75%-99%		100% Online		All Students	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Asian	622	17.8%	907	44.0%	1,190	39.3%	742	39.9%	236	42.4%	131	34.4%	3,828	37.1%
Black	3,185	12.5%	1,989	27.7%	2,822	24.0%	2,236	24.5%	881	21.1%	1,197	16.1%	12,310	20.7%
Hispanic	9,327	7.4%	7,738	26.5%	9,657	26.1%	6,329	27.0%	1,429	26.6%	1,110	12.2%	35,590	21.0%
White	2,422	16.4%	1,885	37.7%	2,197	33.4%	1,575	31.9%	577	32.8%	945	24.3%	9,601	28.8%
Other	94	13.8%	87	34.5%	94	45.7%	61	29.5%	22	31.8%	23	17.4%	381	30.2%
Not Reported	590	10.8%	470	31.1%	589	31.9%	389	26.5%	125	33.6%	168	22.6%	2,331	24.9%
All Students	16,240	10.3%	13,076	29.7%	16,549	28.0%	11,332	28.0%	3,270	27.6%	3,574	18.0%	64,041	23.3%



Key Findings: Propensity Score Weighting



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- It is beneficial for students to incorporate distance learning courses as part of their educational mix.
- The proportion of online courses vary by ethnic group.
- Students who are fully face –to face and fully online are least likely to be successful



Key Findings: Grade Performance

- Courses examined are EDUC-1300, ENGL-1301, GOVT-2305, HIST-1301, and MATH-1314.
- There is insufficient evidence to conclude that students who enroll in face-to-face classes perform better than students who enroll in similar classes online.
 - EDUC-1300 and ENGL-1301 have higher success rates in face-to-face delivery than the online offering.
 - HIST-1301 and MATH-1314 displayed a greater likelihood of success in distance learning courses.
 - The average success rate for students enrolled in GOVT-2305 is similar for both delivery modes





Audience – Tell Us

- How do your institution define stop-outs and drop-outs?
- This is how Dallas College define the two terms?
 - Stop-out – a student enrolled at Dallas College but has not attended for one long semester. A long semester is either Fall or Spring.
 - Drop-out – a student enrolled at Dallas College but has not attended for two long semesters or longer. A long semester is either Fall or Spring.





Key Findings: Stop-Outs/Drop-Outs

Students With At Least One Stop-out or Drop-out			
Distance Learning Proportion	All Students	Stop-out / Drop-out	% Stop-out / Drop-out
0%	16,240	15,344	94.5%
1-24%	13,076	8,701	66.5%
25-49%	16,549	10,330	62.4%
50-74%	11,332	6,872	60.6%
75-99%	3,270	1,989	60.8%
100%	3,574	3,159	88.4%
Total	64,041	46,395	72.4%



Key Findings: Stop-Outs/Drop-Outs (cont'd)



- Asian students are least likely to either stop-out or drop-out (56.5%).
- Black students are most likely to stop-out or drop-out (79.4%).
- The likelihoods for other groups are:
 - Hispanic – 71.1%,
 - White – 74.8%,
 - Other ethnic groups – 68.2%.





Key Findings: Stop-Outs/Drop-Outs (cont'd)

Percent Success in the Proportions of Online Enrollment - Stop-Outs/Drop-Outs														
Ethnicity	0% Online		1%-24% Online		25%-49% Online		50%-74% Online		75%-99% Online		100% Online		All Proportions	
	Count	% Success	Count	% Success	Count	% Success	Count	% Success	Count	% Success	Count	% Success	Count	% Success
Asian	565	14.5%	474	39.2%	551	33.9%	352	29.5%	105	39.0%	116	31.9%	2,163	29.4%
Black	3,064	10.1%	1,454	18.3%	2,065	16.5%	1,533	15.8%	594	10.6%	1,068	11.0%	9,778	13.7%
Hispanic	8,839	4.0%	5,118	13.6%	5,884	11.7%	3,649	10.1%	832	9.6%	996	7.0%	25,318	8.9%
White	2,227	10.8%	1,294	27.5%	1,428	23.4%	1,064	22.0%	360	20.8%	811	16.5%	7,184	19.1%
Other	90	11.1%	52	15.4%	48	29.2%	37	21.6%	13	23.1%	20	15.0%	260	17.7%
Not Reported	559	8.1%	309	19.7%	354	22.9%	237	18.1%	85	22.4%	148	15.5%	1,692	16.1%
All Students	15,344	6.8%	8,701	18.1%	10,330	15.9%	6,872	14.5%	1,989	14.1%	3,159	12.2%	46,395	12.8%
Percent Success in the Proportions of Online Enrollment - No Stop-Outs/Drop-Outs														
Ethnicity	0% Online		1%-24% Online		25%-49% Online		50%-74% Online		75%-99% Online		100% Online		All Proportions	
	Count	% Success	Count	% Success	Count	% Success	Count	% Success	Count	% Success	Count	% Success	Count	% Success
Asian	57	50.9%	433	49.2%	639	44.0%	390	49.2%	131	45.0%	15	53.3%	1,665	47.0%
Black	121	74.4%	535	53.1%	757	44.4%	703	43.4%	287	42.9%	129	58.9%	2,532	47.9%
Hispanic	488	68.6%	2,620	51.8%	3,773	48.7%	2,680	50.0%	597	50.3%	114	57.0%	10,272	51.0%
White	195	80.0%	591	60.1%	769	51.9%	511	52.4%	217	52.5%	134	71.6%	2,417	57.4%
Other	4	75.0%	35	62.9%	46	63.0%	24	41.7%	9	44.4%	3	33.3%	121	57.0%
Not Reported	31	61.3%	161	52.8%	235	45.5%	152	39.5%	40	57.5%	20	75.0%	639	48.4%
All Students	896	70.5%	4,375	53.0%	6,219	48.0%	4,460	48.8%	1,281	48.6%	415	62.9%	17,646	51.0%





Recommendations & Future Research

- Encourage students to pursue a mix of course modalities.
- Identify the reason for the large gap in student success between students who have at least one stop-out or drop-out and students with neither.
- Perform an in-depth analysis of course modalities.
- Examine other reasons why students enroll at Dallas College.

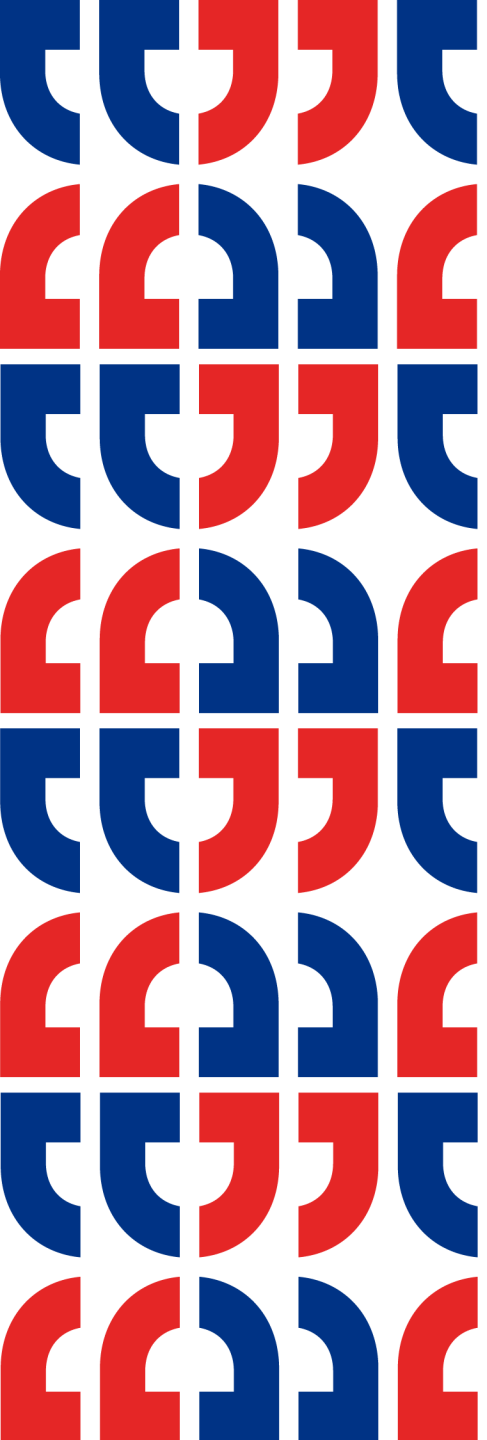




Any Questions?

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Thank you for attending!

For a more in-depth look at this study, contact us via email.

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