

Online Appendix for “A Randomized Assessment of Online Learning”

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Table A.1
Descriptive Statistics for Those Who Completed Course: Face to Face (F2F) versus Online Sections

	F2F N	F2F Mean	Online N	Online Mean	Diff in Means	t	Pr(T > t)
Prior GPA	94	3.19	84	3.09	0.10	1.23	0.22
Prior Total Credits	114	28.35	92	34.57	-6.21	-2.08	0.04
Math SAT	115	633.17	87	632.93	0.24	0.02	0.98
Verbal SAT	115	589.13	87	581.38	7.75	0.80	0.42
Gender: Male=1	120	0.63	93	0.54	0.10	1.41	0.16
White: White=1	99	0.72	70	0.70	0.02	0.24	0.81
Black: Black=1	99	0.07	70	0.03	0.04	1.20	0.23
Asian: Asian=1	99	0.20	70	0.23	-0.03	-0.41	0.68
Hispanic: Hispanic=1	99	0.01	70	0.03	-0.02	-0.89	0.37
Unknown: Unknown Race=1	99	0.00	70	0.00	0.00	.	.

Table A.2
Descriptive Statistics for Those Who Completed Course: Face to Face (FTF) versus Blended Sections

	F2F N	F2F Mean	Blended N	Blended Mean	Diff in Means	t	Pr(T > t)
Prior GPA	94	3.19	97	3.19	0.00	0.05	0.96
Prior Total Credits	114	28.35	105	32.37	-4.02	-1.60	0.11
Math SAT	115	633.17	106	627.08	6.10	0.61	0.54
Verbal SAT	115	589.13	106	586.98	2.15	0.21	0.83
Gender: Male=1	120	0.63	110	0.55	0.08	1.21	0.23
White: White=1	99	0.72	78	0.63	0.09	1.26	0.21
Black: Black=1	99	0.07	78	0.10	-0.03	-0.75	0.45
Asian: Asian=1	99	0.20	78	0.22	-0.02	-0.26	0.80
Hispanic: Hispanic=1	99	0.01	78	0.01	-0.00	-0.17	0.87
Unknown: Unknown Race=1	99	0.00	78	0.01	-0.01	-1.13	0.26

Table A.3
Descriptive Statistics When Permission Number Issued: Face to Face (F2F) versus Online Sections

	F2F N	F2F Mean	Online N	Online Mean	Diff in Means	t	Pr(T > t)
Prior GPA	140	3.12	153	3.06	0.06	0.87	0.39
Prior Total Credits	164	31.70	165	36.65	-4.96	-1.79	0.07
Math SAT	165	621.97	158	615.82	6.15	0.75	0.45
Verbal SAT	165	586.79	158	570.06	16.72	2.07	0.04
Gender: Male=1	175	0.57	172	0.52	0.04	0.79	0.43
White: White=1	134	0.69	127	0.67	0.02	0.43	0.67
Black: Black=1	134	0.09	127	0.06	0.03	1.07	0.29
Asian: Asian=1	134	0.19	127	0.22	-0.03	-0.53	0.60
Hispanic: Hispanic=1	134	0.01	127	0.02	-0.01	-0.51	0.61
Unknown: Unknown Race=1	134	0.00	127	0.02	-0.02	-1.79	0.07

Table A.4
Descriptive Statistics When Permission Number Issued: Face to Face (F2F) versus Blended Sections

	F2F N	F2F Mean	Blended N	Blended Mean	Diff in Means	t	Pr(T > t)
Prior GPA	140	3.12	142	3.13	-0.00	-0.05	0.96
Prior Total Credits	164	31.70	152	34.66	-2.96	-1.16	0.24
Math SAT	165	621.97	146	620.48	1.49	0.18	0.86
Verbal SAT	165	586.79	147	579.69	7.09	0.81	0.42
Gender: Male=1	175	0.57	172	0.56	0.00	0.03	0.97
White: White=1	134	0.69	113	0.62	0.07	1.23	0.22
Black: Black=1	134	0.09	113	0.12	-0.03	-0.66	0.51
Asian: Asian=1	134	0.19	113	0.23	-0.04	-0.69	0.49
Hispanic: Hispanic=1	134	0.01	113	0.01	0.01	0.43	0.67
Unknown: Unknown Race=1	134	0.00	113	0.01	-0.01	-1.09	0.28

Table A.5
Descriptive Statistics When Permission Number Used: Face to Face (F2F) versus Online Sections

	F2F N	F2F Mean	Online N	Online Mean	Diff in Means	t	Pr(T > t)
Prior GPA	116	3.13	127	3.09	0.04	0.49	0.62
Prior Total Credits	138	31.45	137	35.31	-3.86	-1.31	0.19
Math SAT	140	626.25	130	625.69	0.56	0.06	0.95
Verbal SAT	140	586.79	131	575.19	11.59	1.39	0.17
Gender: Male=1	147	0.60	143	0.52	0.07	1.27	0.20
White: White=1	117	0.72	104	0.68	0.04	0.57	0.57
Black: Black=1	117	0.06	104	0.02	0.04	1.53	0.13
Asian: Asian=1	117	0.20	104	0.24	-0.04	-0.79	0.43
Hispanic: Hispanic=1	117	0.02	104	0.02	-0.00	-0.12	0.91
Unknown: Unknown Race=1	117	0.00	104	0.03	-0.03	-1.86	0.06

Table A.6
Descriptive Statistics When Permission Number Used: Face to Face (F2F) versus Blended Sections

	F2F N	F2F Mean	Blended N	Blended Mean	Diff in Means	t	Pr(T > t)
Prior GPA	116	3.13	111	3.14	-0.01	-0.15	0.88
Prior Total Credits	138	31.45	121	31.99	-0.54	-0.21	0.84
Math SAT	140	626.25	119	622.27	3.98	0.42	0.68
Verbal SAT	140	586.79	120	585.75	1.04	0.11	0.91
Gender: Male=1	147	0.60	135	0.56	0.04	0.73	0.47
White: White=1	117	0.72	91	0.64	0.08	1.24	0.22
Black: Black=1	117	0.06	91	0.10	-0.04	-1.05	0.30
Asian: Asian=1	117	0.20	91	0.22	-0.02	-0.41	0.68
Hispanic: Hispanic=1	117	0.02	91	0.01	0.01	0.36	0.72
Unknown: Unknown Race=1	117	0.00	91	0.01	-0.01	-1.13	0.26

Table A.7
Descriptive Statistics Experimental and Non-Experimental Students

	Exp N	Exp Mean	NonExp N	NonExp Mean	Diff in Means	t	Pr(T > t)
Prior GPA	354	3.12	90	3.06	-0.05	-0.76	0.45
Prior Total Credits	396	32.95	151	31.43	-1.52	-0.70	0.48
Math SAT	389	624.85	142	629.65	4.80	0.67	0.50
Verbal SAT	391	582.58	142	595.07	12.49	1.72	0.09
Gender: Male=1	425	0.56	151	0.58	0.02	0.48	0.63
White: White=1	312	0.68	126	0.79	0.10	2.16	0.03
Ethnicity: Nonwhite=1	319	0.33	126	0.21	-0.12	-2.46	0.01

Table B.1
OLS Regression Final Cumulative Exam by Delivery Modality

	(1)	(2)	(3)
Dummy Online=1	-4.912 ^{***} (3.09)	-5.201 ^{***} (3.26)	-4.232 ^{***} (2.68)
Dummy Blended=1	-1.454 (0.95)	-1.703 (1.12)	-0.996 (0.66)
GPA		7.702 ^{***} (6.31)	8.580 ^{***} (6.93)
Prior Total Credits		-0.0453 (1.38)	-0.0483 (1.48)
Math SAT		0.0346 ^{***} (3.64)	0.0246 [*] (2.35)
Verbal SAT		-0.0111 (1.22)	-0.00733 (0.77)
Gender: Male=1			4.644 ^{***} (3.42)
Asian: Asian=1			-0.973 (0.57)
Black: Black=1			-3.335 (1.30)
Hispanic: Hispanic=1			1.043 (0.22)
Hawaiian: Hawaiian=1			6.056 (1.10)
Unknown: Unknown Race=1			-10.95 (1.15)
Constant	78.55 ^{***} (74.65)	41.17 ^{***} (5.54)	39.92 ^{***} (4.73)
Observations	323	265	215
R^2	0.030	0.234	0.345
Adjusted R^2	0.024	0.216	0.307
Wald Chi2			
Prob > chi2	0.008	0.000	0.000
F	4.922	13.105	8.883
Log lik.	-1246.410	-990.749	-774.309

Absolute t statistics in parentheses. ⁺ $p < 0.10$, ^{**} $p < 0.05$, ^{***} $p < 0.01$

Table B.2
 OLS Final Exam With Attrition from Randomization to Course Completion

	(1)	(2)	(3)
Dummy Online=1	-13.32*** (3.29)	-9.517** (2.20)	-10.28** (2.17)
Dummy Blended=1	-4.261 (1.05)	1.518 (0.35)	-0.121 (0.03)
GPA		8.143*** (2.75)	12.34*** (3.80)
Prior Total Credits		-0.186** (2.45)	-0.142* (1.71)
Math SAT		0.107*** (4.08)	0.104*** (3.32)
Verbal SAT		0.0279 (1.13)	0.0542* (1.94)
Gender: Male=1			9.362** (2.29)
Asian: Asian=1			-0.185 (0.03)
Black: Black=1			-4.676 (0.65)
Hispanic: Hispanic=1			4.166 (0.29)
Hawaiian: Hawaiian=1			22.95 (1.30)
Unknown: Unknown Race = 1			4.507 (0.25)
Constant	54.28*** (19.00)	-47.59** (2.44)	-78.56*** (3.33)
Observations	519	411	324
R^2	0.021	0.124	0.192
Adjusted R^2	0.018	0.111	0.161
Wald Chi2			
Prob > chi2	0.004	0.000	0.000
F	5.624	9.509	6.166
Log lik.	-2619.976	-2049.669	-1598.771

Absolute t statistics in parentheses
 * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$