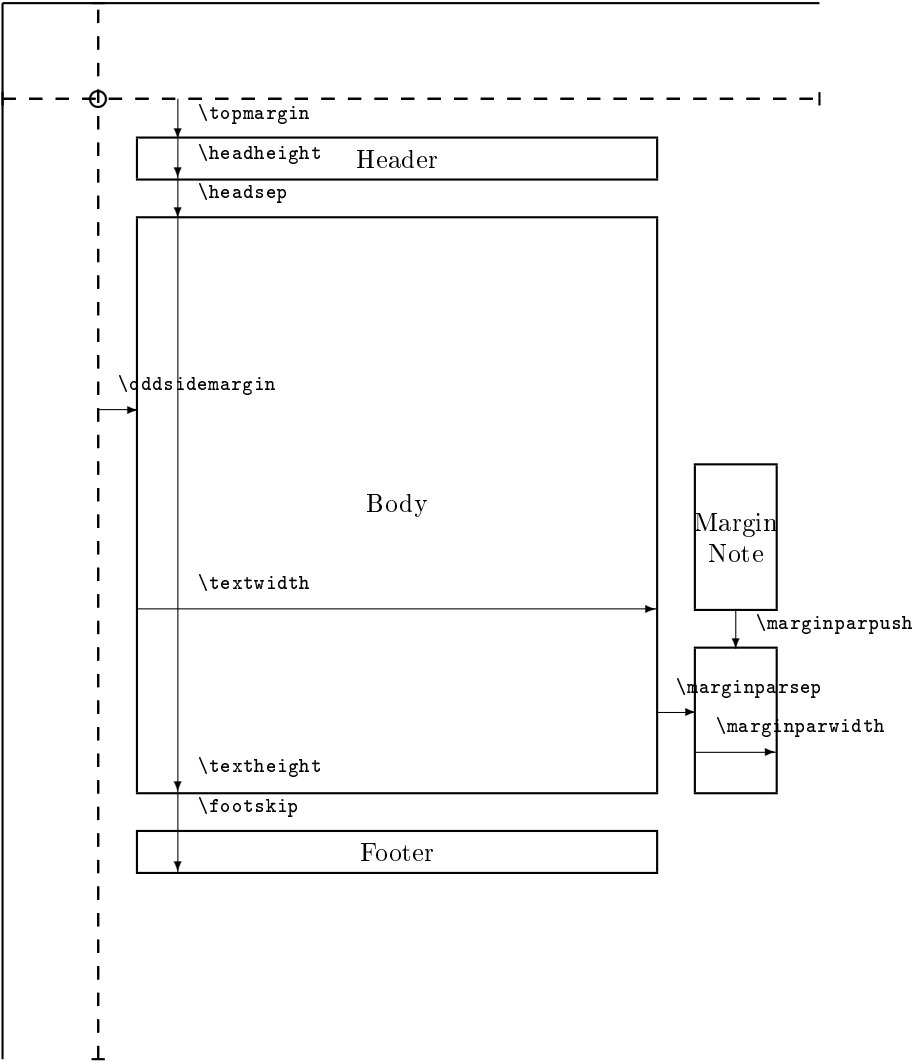


The circle is at 1 inch from the top and left of the page. Dashed lines represent $(\backslash\text{offset} + 1\text{ inch})$ and $(\backslash\text{voffset} + 1\text{ inch})$ from the top and left of the page.



Actual page layout values.

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1 Plots

2 Tables

Variable	(1) Above median		(2) Control, All		(3) Treated, All		(2)-(1)	T-test P-value (2)-(3)
	N	Mean/SE	N	Mean/SE	N	Mean/SE		
Midterm 1 Score	415	2.303 (0.030)	184	0.000 (0.074)	190	-0.118 (0.083)	0.000***	0.291
Math Quiz Score	412	0.609 (0.051)	179	-0.000 (0.075)	187	0.051 (0.077)	0.000***	0.632
Pre Treatment Videos	415	12.188 (0.665)	184	11.739 (0.821)	190	12.058 (0.931)	0.671	0.798
PSET	415	0.270 (0.043)	184	0.272 (0.061)	190	0.237 (0.060)	0.980	0.684
Transfer Status	412	0.274 (0.022)	184	0.462 (0.037)	188	0.447 (0.036)	0.000***	0.770
Prev. GPA	316	3.449 (0.029)	118	2.946 (0.044)	125	2.956 (0.061)	0.000***	0.897
Male	415	0.588 (0.024)	184	0.647 (0.035)	190	0.579 (0.036)	0.170	0.179
Female	415	0.390 (0.024)	184	0.348 (0.035)	190	0.400 (0.036)	0.318	0.298
Other gender/not spec.	415	0.014 (0.006)	184	0.005 (0.005)	190	0.011 (0.007)	0.260	0.580
Chinese	415	0.499 (0.025)	184	0.500 (0.037)	190	0.426 (0.036)	0.978	0.154
Latinx	415	0.060 (0.012)	184	0.141 (0.026)	190	0.153 (0.026)	0.004***	0.758
Other Asian	415	0.152 (0.018)	184	0.141 (0.026)	190	0.205 (0.029)	0.736	0.102
Vietnamese	415	0.046 (0.010)	184	0.054 (0.017)	190	0.016 (0.009)	0.663	0.044**
White	415	0.149 (0.018)	184	0.109 (0.023)	190	0.132 (0.025)	0.160	0.497
Other ethnicity/not spec.	415	0.087 (0.014)	184	0.054 (0.017)	190	0.058 (0.017)	0.136	0.882

Notes: Columns 1, 2, and 3 include all students who took the final exam (i.e. completed the experiment). Columns 4 and 5 exclude students whose matched pair attrited (did not take the final). *Midterm 1 Score* and *Math Quiz Score* are in standard deviation units. *Pre Treatment Videos* is the number of course-relevant videos watched before the first midterm. *PSET* is the number of visits to the PSET tutoring lab before the first midterm. *Prev. GPA* is the cumulative GPA at the beginning of the course, which is only observed for students who had attended UCSD previously. *Transfer Status* and all gender and ethnicity variables are binary and equal 1 if the student matches that category. The value displayed for t-tests are p-values. Standard errors are robust. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Variable	(1) Control, All		(2) Treated, All		T-test P-value (1)-(2)
	N	Mean/SE	N	Mean/SE	
Midterm 1 Score	166	0.029 (0.077)	166	0.021 (0.078)	0.938
Math Quiz Score	161	-0.008 (0.077)	163	0.065 (0.082)	0.519
Pre Treatment Videos	166	12.090 (0.882)	166	12.410 (1.018)	0.813
PSET	166	0.283 (0.066)	166	0.253 (0.066)	0.746
Transfer Status	166	0.470 (0.039)	164	0.415 (0.039)	0.314
Prev. GPA	105	2.929 (0.047)	112	2.998 (0.059)	0.367
Male	166	0.657 (0.037)	166	0.578 (0.038)	0.143
Female	166	0.337 (0.037)	166	0.398 (0.038)	0.256
Other gender/not spec.	166	0.006 (0.006)	166	0.012 (0.008)	0.563
Chinese	166	0.518 (0.039)	166	0.410 (0.038)	0.048**
Latinx	166	0.139 (0.027)	166	0.163 (0.029)	0.541
Other Asian	166	0.145 (0.027)	166	0.211 (0.032)	0.115
Vietnamese	166	0.048 (0.017)	166	0.006 (0.006)	0.018**
White	166	0.102 (0.024)	166	0.145 (0.027)	0.244
Other ethnicity/not spec.	166	0.048 (0.017)	166	0.054 (0.018)	0.804

Notes: The value displayed for t-tests are p-values. Standard errors are robust. ***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Table 1: Effect of Being Assigned Treatment (ITT) on Relevant Videos Watched

	Unique Videos				Total Videos			
	All Observations	All Observations	Matching Pairs	Matching Pairs	All Observations	All Observations	Matching Pairs	Matching Pairs
Treated	21.54*** (1.55)	23.00*** (1.62)	22.01*** (1.72)	21.22*** (2.80)	39.24*** (4.06)	41.08*** (3.94)	40.21*** (4.30)	37.72*** (8.30)
Midterm 1 score	-1.40** (0.66)	-1.31 (0.80)	-1.33 (1.02)	74.13 (124.65)	-2.09 (1.78)	-2.92 (2.25)	-4.21 (2.73)	381.71 (281.11)
Year = 2019	-4.71*** (1.53)	-2.40 (1.56)	-3.51** (1.65)		-12.78*** (4.05)	-7.51* (4.29)	-9.60** (4.72)	
Intercept	36.39*** (1.59)	12.06 (8.08)	17.95** (8.35)	17.93 (28.27)	59.71*** (4.10)	-22.47 (18.30)	-19.51 (20.26)	-40.40 (72.74)
N	374	237	211	211	374	237	211	211
Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Pair Fixed Effects	No	No	No	Yes	No	No	No	Yes

Notes: 'Videos watched' includes all videos watched before the final exam relevant to the course. Test score variables are normalized by the control mean and standard deviation. Standard errors are robust to heteroskedasticity. ***, **, and * indicate significance at the 1, 5, and 10 percent critical levels, respectively.

Table 2: Effect of Being Assigned Treatment (ITT) on Relevant Videos Watched before Midterm 2

	Unique Videos				Total Videos			
	All Observations	All Observations	Matching Pairs	Matching Pairs	All Observations	All Observations	Matching Pairs	Matching Pairs
Treated	6.74*** (1.56)	8.11*** (1.36)	7.97*** (1.50)	8.54*** (2.48)	10.26*** (2.82)	11.62*** (2.09)	11.51*** (2.33)	9.08** (3.57)
Midterm 1 score	0.01 (0.72)	-0.04 (0.84)	-0.39 (0.95)	187.75* (109.26)	-0.51 (1.29)	-0.89 (1.23)	-1.87 (1.44)	217.17 (133.16)
Year = 2019	-8.76*** (1.57)	-6.07*** (1.45)	-7.11*** (1.52)		-13.51*** (2.84)	-7.56*** (2.10)	-9.30*** (2.28)	
Intercept	26.23*** (1.38)	-6.91 (7.16)	-2.71 (8.06)	-19.70 (21.97)	38.23*** (2.55)	-11.52 (10.54)	-6.77 (11.76)	-18.79 (28.94)
N	374	237	211	211	374	237	211	211
Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Pair Fixed Effects	No	No	No	Yes	No	No	No	Yes

Notes: 'Videos watched' includes all videos watched before the second midterm relevant to the course. Test score variables are normalized by the control mean and standard deviation. Standard errors are robust to heteroskedasticity. ***, **, and * indicate significance at the 1, 5, and 10 percent critical levels, respectively.