

SUPPLEMENTARY MATERIALS

Appendix Tables

- A. Descriptive statistics.
- B. Tables assessing the matching process including correlations and balance checks.
- C. Estimating results using the same sample, same method, and same covariates.
- D. Robustness checks for EOC scores outcome.
- E. Robustness checks for graduating/dropout outcomes.

A. Descriptive statistics.

Table A1

Percent of sample by whether their EOC test is associated with a F2F repeated course, CR, or both.

	(1) Math I	(2) English II	(3) Biology
<i>F2F Only</i>			
1	47.69	42.46	43.31
2	7.44	4.98	4.23
3-4	0.72	0.40	0.18
<i>CR Only</i>			
1	7.39	8.76	9.07
2-3	0.21	0.29	0.31
<i>CR/F2F (Same Year)</i>			
1	2.82	2.15	2.05
2	0.06	0.04	0.02
<i>CR & F2F - Separate Years</i>			
1 CR, 1 F2F	2.12	2.24	1.57
2 CR, 1 F2F	0.05	0.03	0.02
1 CR, 2-3 F2F	0.14	0.12	0.05
<i>CR & CR/F2F</i>			
1-2 CR, 1-2 F2F	0.19	0.13	0.09
<i>F2F & CR/F2F</i>			
1-3 F2F, 1-2 CR/F2F	1.02	0.80	0.42
Initial EOC score	30.11	37.58	38.68
Observations	83321	57504	55461

Table A2*Descriptive statistics on the sample of students for the EOC analysis.*

	<u>CR</u>		<u>F2F</u>		<u>CR & F2F</u>		<u>Initial Score</u>	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
First EOC Score (standardized)	-0.79	(0.72)	-0.73	(0.66)	-0.86	(0.64)	-0.79	(0.72)
Post-Enrollment EOC Score	-0.79	(0.75)	-0.64	(0.74)	-0.83	(0.71)	-0.79	(0.79)
Black	0.41	(0.49)	0.43	(0.50)	0.42	(0.49)	0.41	(0.49)
Hispanic	0.17	(0.37)	0.17	(0.38)	0.19	(0.39)	0.19	(0.39)
Other Race	0.06	(0.24)	0.08	(0.27)	0.07	(0.25)	0.07	(0.26)
Female	0.35	(0.48)	0.35	(0.48)	0.30	(0.46)	0.36	(0.48)
Gifted in 8th Grade	0.02	(0.13)	0.02	(0.13)	0.01	(0.10)	0.03	(0.16)
SPED in 8th Grade	0.24	(0.43)	0.23	(0.42)	0.25	(0.44)	0.22	(0.42)
Was LEP in 8th Grade	0.07	(0.26)	0.07	(0.26)	0.08	(0.28)	0.07	(0.25)
LEP in 8th Grade	0.06	(0.24)	0.06	(0.24)	0.07	(0.26)	0.09	(0.28)
Economically Disadvantaged	0.69	(0.46)	0.70	(0.46)	0.71	(0.45)	0.72	(0.45)
Percent Absences in 8th Grade	6.59	(6.28)	6.52	(6.13)	6.61	(6.14)	6.79	(6.45)
Chronically Absent in 8th Grade	0.24	(0.43)	0.23	(0.42)	0.23	(0.42)	0.25	(0.43)
Approximate Age in 8th Grade	14.60	(0.66)	14.60	(0.66)	14.62	(0.65)	14.62	(0.67)
Overage in 8th Grade	0.38	(0.49)	0.38	(0.49)	0.41	(0.49)	0.39	(0.49)
Average Test Scores in 8th	-0.61	(0.69)	-0.67	(0.69)	-0.73	(0.68)	-0.59	(0.72)
Remedial Course in 8th Grade	0.03	(0.17)	0.03	(0.16)	0.03	(0.18)	0.03	(0.17)
Accelerated Course in 8th Grade	0.08	(0.27)	0.09	(0.29)	0.08	(0.26)	0.11	(0.31)
GPA in 8th Grade	2.18	(0.71)	2.17	(0.71)	2.02	(0.68)	2.17	(0.73)
Failed a Course in 8th Grade	0.49	(0.50)	0.46	(0.50)	0.54	(0.50)	0.50	(0.50)
First Failure in 2 nd Year	0.28	(0.45)	0.25	(0.43)	0.21	(0.41)	0.28	(0.45)
First Failure in 3 rd Year	0.06	(0.24)	0.07	(0.25)	0.08	(0.27)	0.04	(0.20)
First Failure in 4 th Year	0.01	(0.11)	0.01	(0.10)	0.02	(0.13)	0.01	(0.10)
First Failure in 5 th Year	0.09	(0.28)	0.10	(0.29)	0.11	(0.31)	0.08	(0.27)
Failed a Math Class	0.75	(0.43)	0.82	(0.39)	0.90	(0.30)	0.67	(0.47)
Failed a Science Class	0.59	(0.49)	0.63	(0.48)	0.69	(0.46)	0.51	(0.50)
Failed a Social Studies Class	0.45	(0.50)	0.47	(0.50)	0.58	(0.49)	0.40	(0.49)
Failed an English Class	0.61	(0.49)	0.63	(0.48)	0.73	(0.44)	0.52	(0.50)
Avg Distance From Passing	12.26	(8.20)	13.23	(9.57)	14.36	(8.83)	15.01	(13.1)
Avg Distance from Passing, EOC	6.83	(7.49)	6.68	(8.26)	9.08	(8.54)	9.36	(11.3)
Avg EOC Score	-0.74	(0.63)	-0.70	(0.59)	-0.82	(0.60)	-0.74	(0.65)
Disciplinary Incident	0.55	(0.50)	0.52	(0.50)	0.59	(0.49)	0.54	(0.50)
Missing 8th Grade Covariates	0.19	(0.39)	0.20	(0.40)	0.20	(0.40)	0.18	(0.39)
Missing 8th Grade Test Score	0.21	(0.41)	0.22	(0.41)	0.22	(0.42)	0.21	(0.41)
Missing 8th Grade Transcript	0.36	(0.48)	0.38	(0.49)	0.38	(0.48)	0.33	(0.47)
Missing 8th Grade Grades	0.36	(0.48)	0.38	(0.49)	0.38	(0.49)	0.34	(0.47)
Missing Overage	0.23	(0.42)	0.24	(0.43)	0.24	(0.42)	0.22	(0.42)
Missing Grades (EOC)	0.20	(0.40)	0.20	(0.40)	0.17	(0.37)	0.19	(0.39)
Missing Number Grades	0.21	(0.41)	0.30	(0.46)	0.22	(0.41)	0.22	(0.41)
Missing Disciplinary Data	0.62	(0.49)	0.69	(0.46)	0.69	(0.46)	0.55	(0.50)
Observations	14652		66203		3366		112065	

Table A3

Percent of the sample broken out by the number of enrollments in CR and/or F2F courses for the high school graduation sample.

CR	F2F						Total
	0	1	2	3	4	5 or more	
0	28.55	19.49	8.47	4.01	2.07	2.06	64.66
1	7.47	4.25	2.57	1.40	0.79	0.97	17.46
2	2.98	2.08	1.47	0.87	0.54	0.70	8.65
3	1.15	0.97	0.75	0.48	0.35	0.39	4.09
4	0.58	0.55	0.43	0.29	0.20	0.29	2.34
5 or more	0.53	0.57	0.58	0.43	0.28	0.42	2.80
Total	41.26	27.91	14.27	7.48	4.24	4.84	N=104164

Note. The CR treatment group is filled in with dark grey and includes students who took at least one CR courses and 0 F2F courses. The “Neither” comparison group is filled in with black and includes students who took 0 F2F and 0 CR courses. The F2F comparison group is filled in with light grey and includes students who took at least one F2F course and 0 CR courses. The CR & F2F comparison group is filled in with white and includes students who took at least one F2F course and at least one CR course.

Table A4. Descriptive statistics on the sample of students for the high school graduation analysis.

	<u>CR</u>		<u>F2F</u>		<u>CR & F2F</u>		<u>None</u>	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Graduated Within Four Years	0.73	(0.44)	0.63	(0.48)	0.59	(0.49)	0.59	(0.44)
Dropped Out of HS	0.18	(0.38)	0.28	(0.45)	0.23	(0.42)	0.35	(0.38)
Black	0.39	(0.49)	0.4	(0.49)	0.43	(0.5)	0.37	(0.49)
Hispanic	0.15	(0.36)	0.16	(0.37)	0.18	(0.38)	0.16	(0.36)
Other Race	0.08	(0.27)	0.08	(0.28)	0.08	(0.27)	0.09	(0.27)
Female	0.43	(0.49)	0.41	(0.49)	0.35	(0.48)	0.45	(0.49)
Gifted in 8th Grade	0.05	(0.22)	0.05	(0.21)	0.03	(0.16)	0.1	(0.22)
SPED in 8th Grade	0.19	(0.39)	0.2	(0.4)	0.23	(0.42)	0.18	(0.39)
Was LEP in 8th Grade	0.05	(0.22)	0.05	(0.21)	0.05	(0.21)	0.05	(0.22)
LEP in 8th Grade	0.07	(0.25)	0.08	(0.26)	0.09	(0.29)	0.06	(0.25)
Economically Disadvantaged	0.72	(0.45)	0.75	(0.43)	0.79	(0.41)	0.7	(0.45)
Percent Absences in 8th Grade	6.53	(6.23)	6.97	(6.94)	7.16	(6.57)	7.42	(6.23)
Chronically Absent in 8th Grade	0.23	(0.42)	0.25	(0.43)	0.27	(0.44)	0.26	(0.42)
Approximate Age in 8th Grade	14.53	(0.64)	14.55	(0.65)	14.57	(0.65)	14.56	(0.64)
Overage in 8th Grade	0.32	(0.46)	0.33	(0.47)	0.36	(0.48)	0.31	(0.46)
Average Test Scores in 8th	-0.4	(0.75)	-0.46	(0.77)	-0.65	(0.73)	-0.23	(0.75)
Remedial Course in 8th Grade	0.03	(0.17)	0.03	(0.17)	0.03	(0.17)	0.03	(0.17)
Accelerated Course in 8th Grade	0.17	(0.37)	0.19	(0.39)	0.12	(0.32)	0.28	(0.37)
GPA in 8th Grade	2.47	(0.73)	2.4	(0.76)	2.17	(0.72)	2.58	(0.73)
Failed a Course in 8th Grade	0.32	(0.47)	0.35	(0.48)	0.45	(0.5)	0.29	(0.47)
First Failure in 2 nd Year	0.28	(0.45)	0.29	(0.45)	0.25	(0.43)	0.2	(0.45)
First Failure in 3 rd Year	0.26	(0.44)	0.17	(0.37)	0.11	(0.31)	0.2	(0.44)
First Failure in 4 th Year	0.12	(0.32)	0.04	(0.2)	0.03	(0.17)	0.17	(0.32)
First Failure in 5 th Year	0.01	(0.09)	0	(0.05)	0	(0.06)	0	(0.09)
Failed a Math Class	0.55	(0.5)	0.64	(0.48)	0.85	(0.35)	0.3	(0.5)
Failed a Science Class	0.36	(0.48)	0.4	(0.49)	0.66	(0.47)	0.2	(0.48)
Failed a Social Studies Class	0.36	(0.48)	0.34	(0.47)	0.64	(0.48)	0.16	(0.48)
Failed an English Class	0.37	(0.48)	0.36	(0.48)	0.66	(0.47)	0.16	(0.48)
Avg Distance From Passing	11.34	(10.3)	13.1	(11.7)	13.45	(9.53)	21.13	(10.3)
Avg Distance from Passing, EOC	2.41	(6.24)	3.63	(7.61)	5.3	(8.19)	4.49	(6.24)
Avg EOC Score	-0.35	(0.61)	-0.38	(0.61)	-0.55	(0.53)	-0.2	(0.61)
Disciplinary Incident	0.34	(0.47)	0.32	(0.47)	0.42	(0.49)	0.26	(0.47)
Missing 8th Grade Covariates	0.09	(0.29)	0.1	(0.3)	0.08	(0.27)	0.1	(0.29)
Missing 8th Grade Test Score	0.12	(0.32)	0.13	(0.33)	0.11	(0.31)	0.14	(0.32)
Missing 8th Grade Transcript	0.09	(0.29)	0.1	(0.3)	0.08	(0.27)	0.1	(0.29)
Missing 8th Grade Grades	0.1	(0.3)	0.11	(0.31)	0.09	(0.29)	0.11	(0.3)
Missing Overage	0.17	(0.38)	0.19	(0.39)	0.17	(0.37)	0.2	(0.38)
Missing Grades (EOC)	0.41	(0.49)	0.4	(0.49)	0.3	(0.46)	0.51	(0.49)
Missing Number Grades	0.36	(0.48)	0.52	(0.5)	0.28	(0.45)	0.48	(0.48)
Missing EOC Scores	0.04	(0.2)	0.06	(0.24)	0.03	(0.18)	0.12	(0.2)
Missing Disciplinary Data	0.46	(0.5)	0.65	(0.48)	0.73	(0.44)	0.53	(0.5)
Observations	12774		37846		24033		29511	

Table A5*Descriptive statistics comparing CR students across the two samples.*

	EOC Sample		HS Grad Sample	
	Mean	SD	Mean	SD
First EOC Score (standardized)	-0.79	(0.72)		
Post-Enrollment EOC Score	-0.79	(0.75)		
Graduated Within Four Years			0.73	(0.44)
Dropped Out of HS			0.18	(0.38)
Black	0.41	(0.49)	0.39	(0.49)
Hispanic	0.17	(0.37)	0.15	(0.36)
Other Race	0.06	(0.24)	0.08	(0.27)
Female	0.35	(0.48)	0.43	(0.49)
Gifted in 8th Grade	0.02	(0.13)	0.05	(0.22)
SPED in 8th Grade	0.24	(0.43)	0.19	(0.39)
Was LEP in 8th Grade	0.07	(0.26)	0.05	(0.22)
LEP in 8th Grade	0.06	(0.24)	0.07	(0.25)
Economically Disadvantaged	0.69	(0.46)	0.72	(0.45)
Percent Absences in 8th Grade	6.59	(6.28)	6.53	(6.23)
Chronically Absent in 8th Grade	0.24	(0.43)	0.23	(0.42)
Approximate Age in 8th Grade	14.60	(0.66)	14.53	(0.64)
Overage in 8th Grade	0.38	(0.49)	0.32	(0.46)
Average Test Scores in 8th	-0.61	(0.69)	-0.4	(0.75)
Remedial Course in 8th Grade	0.03	(0.17)	0.03	(0.17)
Accelerated Course in 8th Grade	0.08	(0.27)	0.17	(0.37)
GPA in 8th Grade	2.18	(0.71)	2.47	(0.73)
Failed a Course in 8th Grade	0.49	(0.50)	0.32	(0.47)
First Failure in 2 nd Year	0.28	(0.45)	0.28	(0.45)
First Failure in 3 rd Year	0.06	(0.24)	0.26	(0.44)
First Failure in 4 th Year	0.01	(0.11)	0.12	(0.32)
First Failure in 5 th Year	0.09	(0.28)	0.01	(0.09)
Failed a Math Class	0.75	(0.43)	0.55	(0.5)
Failed a Science Class	0.59	(0.49)	0.36	(0.48)
Failed a Social Studies Class	0.45	(0.50)	0.36	(0.48)
Failed an English Class	0.61	(0.49)	0.37	(0.48)
Avg Distance From Passing	12.26	(8.20)	11.34	(10.3)
Avg Distance from Passing, EOC	6.83	(7.49)	2.41	(6.24)
Avg EOC Score	-0.74	(0.63)	-0.35	(0.61)
Disciplinary Incident	0.55	(0.50)	0.34	(0.47)
Missing 8th Grade Covariates	0.19	(0.39)	0.09	(0.29)
Missing 8th Grade Test Score	0.21	(0.41)	0.12	(0.32)
Missing 8th Grade Transcript	0.36	(0.48)	0.09	(0.29)
Missing 8th Grade Grades	0.36	(0.48)	0.1	(0.3)
Missing Overage	0.23	(0.42)	0.17	(0.38)
Missing Grades (EOC)	0.20	(0.40)	0.41	(0.49)

	<u>EOC Sample</u>		<u>HS Grad Sample</u>	
	Mean	SD	Mean	SD
Missing Number Grades	0.21	(0.41)	0.36	(0.48)
Missing EOC Scores			0.04	(0.2)
Missing Disciplinary Data	0.62	(0.49)	0.04	(0.5)
Observations	14652		12774	

B. Tables assessing the matching process including correlations and balance checks.

Table B1

Within cohort-school correlations between treatment conditions, outcomes, and the covariates.

	Treatment				Outcomes	
	CR	F2F	CR & F2F	None	Graduate	Drop Out
Student is Black	0.023** (0.009)	-0.019** (0.001)	0.016* (0.015)	-0.010* (0.043)	0.053*** (0.000)	-0.073*** (0.000)
Student is Hispanic	-0.018* (0.045)	-0.010 (0.076)	-0.010 (0.140)	0.001 (0.834)	-0.019*** (0.000)	0.005 (0.111)
Student is Other Race	0.004 (0.647)	0.007 (0.227)	-0.002 (0.809)	0.015** (0.004)	-0.014*** (0.000)	0.011*** (0.000)
Students is Female	0.030*** (0.001)	0.022*** (0.000)	-0.014* (0.026)	0.002 (0.686)	0.058*** (0.000)	-0.031*** (0.000)
Students was Gifted in 8 th	0.007 (0.444)	0.009 (0.105)	-0.027*** (0.000)	0.006 (0.226)	0.073*** (0.000)	-0.055*** (0.000)
Student was SPED in 8 th	-0.003 (0.760)	-0.004 (0.524)	0.017** (0.007)	0.004 (0.401)	-0.083*** (0.000)	0.051*** (0.000)
Was LEP in 8th	-0.003 (0.721)	-0.003 (0.598)	-0.009 (0.147)	0.000 (0.932)	0.038*** (0.000)	-0.038*** (0.000)
Current LEP in 8th	-0.026** (0.003)	-0.028*** (0.000)	-0.006 (0.316)	-0.005 (0.291)	-0.011*** (0.000)	0.002 (0.577)
Economically Disadvantaged in 8 th	-0.013 (0.129)	-0.008 (0.184)	0.011 (0.089)	-0.001 (0.787)	-0.062*** (0.000)	0.045*** (0.000)
Percent Absences in 8th	0.007 (0.442)	0.051*** (0.000)	0.009 (0.179)	0.023*** (0.000)	-0.252*** (0.000)	0.258*** (0.000)
Chronic Absentee in 8th	0.011 (0.220)	0.037*** (0.000)	0.005 (0.422)	0.016** (0.002)	-0.217*** (0.000)	0.219*** (0.000)
Approximate Age in 8th	-0.031*** (0.000)	-0.017** (0.003)	-0.003 (0.607)	-0.027*** (0.000)	0.025*** (0.000)	-0.008* (0.013)
Overage in 8th	-0.028**	0.005	0.005	-0.003	-0.109***	0.130***

	Treatment				Outcomes	
	CR	F2F	CR & F2F	None	Graduate	Drop Out
Average Test Scores in 8th	(0.002) 0.021*	(0.369) 0.035***	(0.410) -0.033***	(0.506) 0.007	(0.000) 0.129***	(0.000) -0.099***
Failed a Course in 8th	(0.018) -0.019*	(0.000) -0.007	(0.000) 0.024***	(0.206) -0.005	(0.000) -0.178***	(0.000) 0.145***
Remedial Course in 8th	(0.029) -0.004	(0.202) 0.008	(0.000) 0.008	(0.347) 0.007	(0.000) -0.042***	(0.000) 0.021***
Accelerated Course in 8th	(0.621) -0.002	(0.181) 0.019**	(0.194) -0.039***	(0.176) 0.001	(0.000) 0.130***	(0.000) -0.095***
GPA in 8th	(0.830) -0.014	(0.001) -0.018**	(0.000) -0.041***	(0.807) -0.020***	(0.000) 0.215***	(0.000) -0.172***
First Failure in 2 nd Year	(0.121) -0.001	(0.002) -0.014*	(0.000) 0.008	(0.000) 0.005	(0.000) 0.048***	(0.000) -0.026***
First Failure in 3 rd Year	(0.875) 0.060***	(0.015) 0.047***	(0.241) 0.005	(0.347) 0.021***	(0.000) 0.117***	(0.000) -0.109***
First Failure in 4 th Year	(0.000) 0.050***	(0.000) 0.069***	(0.475) -0.022***	(0.000) -0.015**	(0.000) 0.086***	(0.000) -0.130***
First Failure in 5 th Year	(0.000) 0.003	(0.000) 0.002	(0.001) -0.000	(0.004) -0.009	(0.000) -0.060***	(0.000) -0.039***
Failed a Math Course	(0.771) -0.046***	(0.753) -0.200***	(0.965) 0.050***	(0.080) -0.026***	(0.000) 0.012***	(0.000) -0.081***
Failed a Science Course	(0.000) -0.060***	(0.000) -0.176***	(0.000) 0.026***	(0.000) -0.032***	(0.000) -0.060***	(0.000) -0.025***
Failed a Social Studies Course	(0.000) -0.030***	(0.000) -0.195***	(0.000) 0.037***	(0.000) -0.041***	(0.000) -0.092***	(0.000) -0.001
Failed an English Course	(0.001) -0.014	(0.000) -0.203***	(0.000) 0.039***	(0.000) -0.041***	(0.000) -0.129***	(0.852) 0.025***
Avg. Distance Passing (1 st Failures)	(0.127) -0.033***	(0.000) -0.131***	(0.000) -0.085***	(0.000) -0.086***	(0.000) -0.101***	(0.000) 0.064***
Avg. Distance Passing, EOC Courses	(0.000) -0.031***	(0.000) -0.035***	(0.000) -0.014*	(0.000) -0.001	(0.000) -0.217***	(0.000) 0.182***

	Treatment				Outcomes	
	CR	F2F	CR & F2F	None	Graduate	Drop Out
(1 st Enroll)	(0.000)	(0.000)	(0.035)	(0.792)	(0.000)	(0.000)
Avg. Score EOCs (1 st Enroll)	-0.001	0.043***	-0.034***	0.011*	0.145***	-0.050***
	(0.881)	(0.000)	(0.000)	(0.030)	(0.000)	(0.000)
Avg. Distance Passing EOC X Avg. Score EOCs (1 st Enroll)	-0.004	0.004	-0.003	0.003	0.171***	-0.117***
	(0.680)	(0.448)	(0.665)	(0.534)	(0.000)	(0.000)
Received a Disciplinary Infraction	0.025**	0.025***	0.010	0.006	0.029***	-0.051***
	(0.005)	(0.000)	(0.105)	(0.236)	(0.000)	(0.000)
Missing 8 th Grade Demographics	0.029**	0.021***	0.004	0.028***	-0.046***	0.033***
	(0.001)	(0.000)	(0.522)	(0.000)	(0.000)	(0.000)
Missing 8 th Grade Tests	0.034***	0.032***	0.007	0.032***	-0.092***	0.071***
	(0.000)	(0.000)	(0.290)	(0.000)	(0.000)	(0.000)
Missing 8 th Grade Transcripts	0.032***	0.024***	0.008	0.027***	-0.061***	0.045***
	(0.000)	(0.000)	(0.224)	(0.000)	(0.000)	(0.000)
Missing 8 th Grade Grades	0.031***	0.025***	0.011	0.025***	-0.060***	0.045***
	(0.001)	(0.000)	(0.087)	(0.000)	(0.000)	(0.000)
Missing Overage in 8 th	0.032***	0.035***	0.015*	0.032***	-0.123***	0.092***
	(0.000)	(0.000)	(0.022)	(0.000)	(0.000)	(0.000)
Missing Grades for EOC Courses	0.011	0.107***	-0.025***	0.018***	-0.068***	0.122***
	(0.199)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Missing Number Grades	-0.019*	0.044***	-0.027***	0.070***	0.018***	0.029***
	(0.030)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Missing EOC Scores	0.011	0.079***	0.003	0.037***	-0.233***	0.282***
	(0.229)	(0.000)	(0.672)	(0.000)	(0.000)	(0.000)
Missing Discipline Data	-0.078***	-0.078***	0.007	-0.013*	-0.168***	0.188***
	(0.000)	(0.000)	(0.258)	(0.012)	(0.000)	(0.000)
Observations	12774	29511	24033	37846	104164	104164

Notes. p-values in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table B2*Full balance check comparing students across the four different treatment/comparison conditions.*

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Student is Black	CR	0.384	0.486			0.395	0.489		
	F2F	0.395	0.489	0.024	0.995	0.395	0.489	0	1
	CR&F2F	0.43	0.495	0.094	0.982	0.399	0.49	0.008	0.998
	None	0.366	0.482	0.036	1.009	0.394	0.489	0.004	1.001
Student is Hispanic	CR	0.153	0.36			0.164	0.37		
	F2F	0.165	0.371	0.033	0.969	0.165	0.371	0.004	0.996
	CR&F2F	0.178	0.382	0.068	0.941	0.168	0.374	0.012	0.989
	None	0.158	0.365	0.015	0.986	0.163	0.37	0.001	1.001
Student is Other Race	CR	0.078	0.268			0.082	0.274		
	F2F	0.083	0.276	0.021	0.969	0.081	0.273	0.003	1.005
	CR&F2F	0.076	0.265	0.006	1.009	0.083	0.276	0.005	0.992
	None	0.086	0.281	0.031	0.954	0.083	0.276	0.004	0.994
Student is Female	CR	0.43	0.495			0.409	0.492		
	F2F	0.41	0.492	0.039	1.006	0.406	0.491	0.006	1.001
	CR&F2F	0.348	0.476	0.168	1.039	0.407	0.491	0.005	1.001
	None	0.454	0.498	0.05	0.994	0.414	0.493	0.009	0.998
Student was Gifted (8th Grade)	CR	0.047	0.213			0.052	0.223		
	F2F	0.044	0.204	0.018	1.041	0.051	0.22	0.006	1.013
	CR&F2F	0.023	0.151	0.13	1.406	0.043	0.202	0.045	1.101
	None	0.089	0.285	0.166	0.746	0.055	0.228	0.012	0.977
Student was SPED (8th Grade)	CR	0.174	0.379			0.18	0.384		
	F2F	0.182	0.386	0.023	0.981	0.187	0.39	0.018	0.985
	CR&F2F	0.214	0.41	0.103	0.923	0.193	0.395	0.033	0.974
	None	0.163	0.369	0.029	1.026	0.185	0.388	0.013	0.99
Student was Previously LEP (8th Grade)	CR	0.046	0.21			0.045	0.206		
	F2F	0.042	0.201	0.02	1.045	0.042	0.202	0.01	1.024

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Student was LEP (8th Grade)	CR&F2F	0.042	0.2	0.023	1.053	0.041	0.198	0.018	1.041
	None	0.042	0.201	0.019	1.043	0.041	0.198	0.019	1.044
	CR	0.06	0.238			0.067	0.249		
	F2F	0.068	0.251	0.031	0.946	0.069	0.253	0.009	0.985
	CR&F2F	0.085	0.279	0.096	0.852	0.071	0.257	0.017	0.971
Student is Economically Disadvantaged	None	0.055	0.229	0.02	1.039	0.066	0.247	0.005	1.008
	CR	0.649	0.477			0.67	0.47		
	F2F	0.678	0.467	0.061	1.021	0.674	0.469	0.009	1.003
	CR&F2F	0.729	0.444	0.173	1.074	0.686	0.464	0.035	1.013
	None	0.625	0.484	0.052	0.985	0.67	0.47	0	1
Percent Days Absent (8th Grade)	CR	5.9	6.219			6.283	6.801		
	F2F	6.296	6.912	0.06	0.9	6.56	7.239	0.039	0.939
	CR&F2F	6.596	6.599	0.109	0.942	6.763	7.219	0.068	0.942
	None	6.659	7.989	0.106	0.778	6.609	7.498	0.046	0.907
	CR	0.21	0.407			0.225	0.418		
Chronically Absent (8th Grade)	F2F	0.222	0.416	0.03	0.98	0.238	0.426	0.032	0.98
	CR&F2F	0.248	0.432	0.09	0.943	0.247	0.431	0.052	0.968
	None	0.234	0.423	0.057	0.963	0.24	0.427	0.036	0.977
	CR	13.163	4.285			13.161	4.318		
	F2F	13.134	4.359	0.007	0.983	13.24	4.236	0.018	1.019
Approximate Age (8th Grade)	CR&F2F	13.423	3.98	0.063	1.077	13.196	4.313	0.008	1.001
	None	13.06	4.474	0.024	0.958	13.12	4.415	0.01	0.978
	CR	0.26	0.439			0.264	0.441		
	F2F	0.269	0.443	0.02	0.989	0.273	0.446	0.022	0.989
	CR&F2F	0.297	0.457	0.082	0.96	0.277	0.448	0.031	0.984
Overage (8th Grade)	None	0.25	0.433	0.024	1.014	0.275	0.446	0.025	0.987
	CR	-0.345	0.718			-0.372	0.731		
	F2F	-0.399	0.738	0.074	0.974	-0.389	0.758	0.023	0.964
	CR&F2F	-0.584	0.718	0.334	1	-0.417	0.741	0.061	0.987
	Average 8th Test Score (8th Grade)								

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Failed a Class (8th Grade)	None	-0.199	0.797	0.191	0.902	-0.371	0.782	0.001	0.935
	CR	0.281	0.449			0.315	0.464		
	F2F	0.309	0.462	0.063	0.972	0.325	0.468	0.022	0.992
	CR&F2F	0.412	0.492	0.278	0.913	0.332	0.471	0.037	0.986
Took Remedial Course (8th Grade)	None	0.259	0.438	0.049	1.026	0.315	0.464	0	1
	CR	0.027	0.162			0.027	0.163		
	F2F	0.027	0.162	0	0.999	0.028	0.166	0.006	0.982
	CR&F2F	0.027	0.161	0.001	1.003	0.028	0.166	0.007	0.981
Took Advanced Course (8th Grade)	None	0.03	0.171	0.019	0.947	0.028	0.166	0.007	0.981
	CR	0.155	0.362			0.179	0.383		
	F2F	0.172	0.377	0.044	0.961	0.172	0.378	0.017	1.015
	CR&F2F	0.11	0.313	0.134	1.157	0.16	0.367	0.049	1.045
GPA (8th Grade)	None	0.247	0.431	0.23	0.84	0.177	0.382	0.003	1.003
	CR	2.225	1.025			2.161	1.022		
	F2F	2.141	1.028	0.082	0.997	2.146	1.032	0.014	0.99
	CR&F2F	1.979	0.923	0.253	1.11	2.102	0.995	0.059	1.027
First Failed in 2nd Year	None	2.295	1.126	0.064	0.91	2.136	1.088	0.023	0.939
	CR	0.285	0.451			0.254	0.436		
	F2F	0.29	0.454	0.012	0.995	0.254	0.436	0	1
	CR&F2F	0.251	0.433	0.077	1.041	0.263	0.44	0.02	0.989
First Failed in 3rd Year	None	0.197	0.398	0.206	1.135	0.25	0.433	0.01	1.006
	CR	0.262	0.44			0.175	0.38		
	F2F	0.167	0.373	0.232	1.179	0.192	0.394	0.045	0.964
	CR&F2F	0.11	0.312	0.399	1.407	0.18	0.384	0.014	0.988
First Failed in 4th Year	None	0.202	0.401	0.142	1.095	0.172	0.377	0.008	1.007
	CR	0.119	0.324			0.084	0.277		
	F2F	0.04	0.196	0.296	1.654	0.057	0.231	0.107	1.2
	CR&F2F	0.03	0.169	0.347	1.913	0.068	0.252	0.059	1.099
	None	0.169	0.375	0.142	0.865	0.097	0.296	0.046	0.936

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
First Failed in 5th Year	CR	0.008	0.09			0.005	0.071		
	F2F	0.002	0.046	0.085	1.954	0.003	0.055	0.032	1.287
	CR&F2F	0.004	0.059	0.061	1.521	0.005	0.068	0.006	1.04
	None	0.005	0.07	0.041	1.291	0.004	0.063	0.015	1.121
Received a Disciplinary Infraction	CR	0.178	0.382			0.126	0.332		
	F2F	0.113	0.317	0.184	1.207	0.125	0.33	0.004	1.004
	CR&F2F	0.111	0.314	0.192	1.219	0.128	0.334	0.005	0.994
	None	0.121	0.326	0.16	1.173	0.122	0.328	0.011	1.012
Missing 8th Grade Covariates	CR	0.094	0.292			0.095	0.294		
	F2F	0.097	0.297	0.011	0.984	0.091	0.288	0.015	1.021
	CR&F2F	0.079	0.27	0.054	1.082	0.095	0.293	0.002	1.003
	None	0.103	0.304	0.03	0.96	0.1	0.3	0.015	0.98
Missing 8th Grade Test Scores	CR	0.12	0.325			0.125	0.33		
	F2F	0.128	0.334	0.024	0.973	0.123	0.328	0.007	1.008
	CR&F2F	0.107	0.309	0.041	1.051	0.129	0.335	0.014	0.985
	None	0.139	0.346	0.058	0.938	0.133	0.339	0.023	0.974
Missing 8th Grade Transcript	CR	0.095	0.293			0.097	0.296		
	F2F	0.099	0.298	0.012	0.984	0.092	0.29	0.015	1.021
	CR&F2F	0.082	0.275	0.045	1.068	0.096	0.295	0.001	1.001
	None	0.101	0.302	0.022	0.971	0.101	0.302	0.015	0.98
Missing 8th Grade Grades	CR	0.103	0.304			0.105	0.306		
	F2F	0.107	0.309	0.013	0.984	0.101	0.301	0.013	1.017
	CR&F2F	0.09	0.286	0.045	1.063	0.105	0.306	0.001	0.999
	None	0.111	0.314	0.026	0.968	0.11	0.313	0.017	0.978
Missing Overage in 8th Grade	CR	0.173	0.379			0.186	0.389		
	F2F	0.188	0.391	0.037	0.97	0.185	0.389	0.001	1.001
	CR&F2F	0.169	0.375	0.012	1.01	0.195	0.397	0.025	0.981
	None	0.205	0.403	0.08	0.939	0.197	0.398	0.029	0.977
Missing Discipline Data	CR	0.475	0.499			0.612	0.487		

Variable	Pre-Match				Post-Match			
	Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
F2F	0.651	0.477	0.361	1.048	0.624	0.484	0.024	1.006
CR&F2F	0.735	0.441	0.551	1.131	0.619	0.486	0.014	1.003
None	0.532	0.499	0.114	1.001	0.607	0.489	0.012	0.997

Note. Standardized differences and standard deviation (SD) ratios are between the CR mean/SD and the other treatment statuses mean/SD; Post matching estimates are weighted using the propensity score; Differences outside of the acceptable range of values are bolded (greater than 0.25 for standardized differences and outside of the 0.5 to 2 range for SD ratios); Means will be lower in this table than overall descriptive for variables that we transformed to zero when data were missing.

Table B3*Balance check on covariates not used in the matching process.*

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Teaching Experience of 8th Grade Teachers	CR	9.817	6.362			9.721	6.338		
	None	9.819	6.487	0	0.981	9.517	6.297	0.032	1.006
	CR&F2F	9.564	6.261	0.04	1.016	9.522	6.24	0.032	1.016
	F2F	9.9	6.498	0.013	0.979	9.883	6.494	0.025	0.976
Teaching Evaluation of 8th Grade Teachers	CR	3.614	0.582			3.601	0.585		
	None	3.581	0.567	0.057	1.026	3.566	0.571	0.061	1.025
	CR&F2F	3.578	0.57	0.063	1.021	3.588	0.573	0.022	1.021
	F2F	3.578	0.566	0.062	1.029	3.58	0.564	0.037	1.037
EVAAS of 8th Grade Teachers	CR	0.004	2.092			0.015	2.07		
	None	0.083	2.164	0.037	0.967	0.065	2.252	0.023	0.919
	CR&F2F	-0.128	2.093	0.063	1	-0.045	2.129	0.028	0.972
	F2F	-0.171	2.174	0.082	0.963	-0.138	2.155	0.073	0.961
Math Scores of Classmates in 8th Grade	CR	0.011	0.053			0.013	0.055		
	None	0.008	0.058	0.066	0.919	0.013	0.057	0.007	0.963
	CR&F2F	0.019	0.059	0.13	0.901	0.015	0.058	0.034	0.943
	F2F	0.012	0.053	0.022	0.993	0.012	0.055	0.018	0.992
Reading Scores of Classmates in 8th Grade	CR	0.009	0.06			0.011	0.064		
	None	0.004	0.067	0.075	0.901	0.01	0.07	0.012	0.908
	CR&F2F	0.017	0.073	0.127	0.822	0.012	0.078	0.017	0.817
	F2F	0.01	0.063	0.014	0.944	0.01	0.065	0.005	0.983
Percent Black, 8th Grade Classes	CR	32.658	24.657			33.672	24.632		
	None	34.203	25.167	0.062	0.98	36.468	25.612	0.111	0.962
	CR&F2F	36.456	25.331	0.152	0.973	34.926	25.231	0.05	0.976
	F2F	35.34	25.727	0.106	0.958	35.724	25.874	0.081	0.952
Percent Hispanic, 8th Grade Classes	CR	14.661	12.691			15.007	12.807		
	None	14.368	12.463	0.023	1.018	14.765	12.919	0.019	0.991

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Percent White, 8th Grade Classes	CR&F2F	15.672	13.466	0.077	0.942	14.943	12.965	0.005	0.988
	F2F	14.612	13.049	0.004	0.973	14.668	13.151	0.026	0.974
	CR	45.324	28.222			43.901	28.072		
	None	43.874	28.436	0.051	0.992	41.345	28.474	0.09	0.986
Percent Economically Disadvantaged, 8th Grade Classes	CR&F2F	40.498	27.763	0.172	1.017	42.826	28.157	0.038	0.997
	F2F	42.803	28.398	0.089	0.994	42.485	28.459	0.05	0.986
	CR	60.745	21.967			60.682	22.296		
	None	58.957	23.183	0.079	0.948	61.563	22.844	0.039	0.976
Average Class Size	CR&F2F	65.063	20.881	0.201	1.052	62.477	21.953	0.081	1.016
	F2F	63.143	21.968	0.109	1	63.16	22.02	0.112	1.013
	CR	23.541	4.507			23.561	4.623		
	None	23.759	4.863	0.047	0.927	23.396	4.956	0.034	0.933
Title I, Middle School	CR&F2F	23.092	4.645	0.098	0.97	23.248	4.725	0.067	0.978
	F2F	23.429	4.765	0.024	0.946	23.385	4.796	0.037	0.964
	CR	0.286	0.452			0.275	0.446		
	None	0.294	0.455	0.018	0.992	0.312	0.463	0.082	0.963
Enrollment/100, Middle School	CR&F2F	0.322	0.467	0.079	0.967	0.297	0.457	0.05	0.977
	F2F	0.329	0.47	0.093	0.962	0.333	0.471	0.127	0.947
	CR	7.702	2.849			7.829	2.896		
	None	7.64	2.933	0.021	0.972	7.56	2.913	0.093	0.994
Overall Performance Composite, Middle School	CR&F2F	7.641	2.806	0.021	1.015	7.699	2.897	0.045	0.999
	F2F	7.441	2.804	0.092	1.016	7.414	2.803	0.146	1.033
	CR	57.275	21.617			58.794	21.653		
	None	59.021	21.894	0.08	0.987	59.399	21.655	0.028	1
Proportion of Teachers with 3 Years of Less Experience, Middle School	CR&F2F	56.365	21.624	0.042	1	55.804	22.114	0.137	0.979
	F2F	57.005	21.59	0.012	1.001	56.067	21.68	0.126	0.999
	CR	0.213	0.104			0.214	0.105		
	None	0.217	0.105	0.039	0.997	0.219	0.107	0.049	0.983
	CR&F2F	0.22	0.106	0.067	0.987	0.217	0.107	0.025	0.983

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Proportion of National Board Certified Teachers, Middle School	F2F	0.217	0.105	0.036	0.997	0.218	0.105	0.033	0.995
	CR	0.135	0.078			0.136	0.079		
	None	0.133	0.083	0.03	0.945	0.128	0.081	0.095	0.975
	CR&F2F	0.13	0.078	0.073	1.004	0.133	0.08	0.037	0.981
Student:Teacher Ratio, Middle School	F2F	0.133	0.083	0.031	0.946	0.132	0.083	0.049	0.953
	CR	0.067	0.024			0.068	0.025		
	None	0.069	0.028	0.046	0.872	0.069	0.026	0.053	0.97
	CR&F2F	0.068	0.024	0.028	1.031	0.069	0.025	0.036	1.017
Percent Economically Disadvantaged, Middle School	F2F	0.068	0.023	0.019	1.064	0.068	0.023	0.014	1.099
	CR	59.722	20.799			59.639	20.945		
	None	60.378	20.668	0.032	1.006	61.276	20.783	0.078	1.008
	CR&F2F	62.368	20.39	0.128	1.02	61.51	20.747	0.09	1.01
Suspension Rate, Middle School	F2F	62.358	20.254	0.128	1.027	62.462	20.38	0.137	1.028
	CR	30.317	37.061			31.462	40.169		
	None	32.866	43.614	0.063	0.85	35.575	48.201	0.093	0.833
	CR&F2F	33.075	38.314	0.073	0.967	32.907	41.575	0.035	0.966
Violent Acts Per 1K, Middle School	F2F	33.731	40.676	0.088	0.911	34.106	41.661	0.065	0.964
	CR	11.099	14.934			11.562	16.573		
	None	12.254	17.317	0.071	0.862	13.119	19.289	0.087	0.859
	CR&F2F	11.908	15.642	0.053	0.955	12.222	17.889	0.038	0.926
Percent Black, Middle School	F2F	11.939	17.709	0.051	0.843	12.061	18.019	0.029	0.92
	CR	29.732	21.357			30.783	21.346		
	None	32.847	22.186	0.143	0.963	34.29	22.548	0.16	0.947
	CR&F2F	32.57	21.778	0.132	0.981	31.562	21.637	0.036	0.987
Percent Hispanic, Middle School	F2F	32.856	22.615	0.142	0.944	33.233	22.762	0.111	0.938
	CR	14.194	10.094			14.443	10.028		
	None	14.422	9.772	0.023	1.033	14.54	9.962	0.01	1.007
	CR&F2F	14.875	10.237	0.067	0.986	14.484	9.966	0.004	1.006
	F2F	14.124	9.899	0.007	1.02	14.176	9.987	0.027	1.004

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Per Pupil Expenditures, Middle School	CR	7590.50	3944.00			7557.92	4113.20		
	None	7640.12	4175.54	0.012	0.945	7624.91	3680.14	0.017	1.118
	CR&F2F	7619.69	3352.11	0.008	1.177	7694.54	3304.09	0.037	1.245
	F2F	7579.17	3205.57	0.003	1.23	7649.08	3204.33	0.025	1.284
Same District for Middle and High School	CR	0.789	0.408			0.771	0.42		
	None	0.762	0.426	0.065	0.958	0.754	0.431	0.042	0.974
	CR&F2F	0.777	0.416	0.03	0.98	0.706	0.456	0.149	0.922
	F2F	0.746	0.435	0.103	0.937	0.746	0.435	0.059	0.965

Note. Standardized differences and standard deviation (SD) ratios are between the CR mean/SD and the other treatment statuses mean/SD; Post matching estimates are weighted using the propensity score; Differences outside of the acceptable range of values are bolded (greater than 0.25 for standardized differences and outside of the 0.5 to 2 range for SD ratios).

C. Estimating results using the same sample, same method, and same covariates.

Table C1

Results estimated with a common sample and same methodology (school-by-cohort fixed effect and same covariates).

	(1) EOC Score	(2) Graduated	(3) Dropout
CR	-0.02 (0.01)	0.10*** (0.01)	-0.09*** (0.01)
F2F	0.10*** (0.01)	-0.06*** (0.01)	0.07*** (0.01)
CR&F2F	0.03 (0.02)	0.10*** (0.01)	-0.12*** (0.01)
Black	-0.00 (0.01)	0.13*** (0.01)	-0.14*** (0.01)
Hispanic	-0.02** (0.01)	0.02** (0.01)	-0.04*** (0.01)
Other Race	-0.01 (0.01)	0.01 (0.01)	-0.03*** (0.01)
Female	0.00 (0.00)	0.03*** (0.00)	-0.00 (0.00)
Gifted in 8th Grade	0.05*** (0.01)	-0.03 (0.01)	0.02 (0.01)
SPED in 8th Grade	-0.04*** (0.01)	0.02*** (0.01)	-0.04*** (0.00)
Was LEP in 8th Grade	0.03*** (0.01)	0.04*** (0.01)	-0.05*** (0.01)
Current LEP in 8th Grade	0.04*** (0.01)	0.06*** (0.01)	-0.06*** (0.01)
Economically Disadvantaged	0.01** (0.01)	-0.06*** (0.01)	0.04*** (0.01)
Percent Absences in 8th Grade	0.00* (0.01)	-0.01*** (0.01)	0.01*** (0.01)

	(1) EOC Score (0.00)	(2) Graduated (0.00)	(3) Dropout (0.00)
Chronically Absent in 8th Grade	-0.00 (0.01)	-0.05*** (0.01)	0.05*** (0.01)
Approximate Age in 8th Grade	-0.02** (0.00)	-0.03*** (0.00)	0.06*** (0.00)
Overage in 8th Grade	-0.00 (0.01)	-0.05*** (0.01)	0.05*** (0.01)
Average Test Scores in 8th	0.06*** (0.01)	0.00 (0.00)	-0.01 (0.00)
Failed a Course in 8th Grade	-0.00 (0.01)	-0.05*** (0.01)	0.03*** (0.01)
Remedial Course in 8th Grade	-0.01 (0.02)	-0.03* (0.01)	-0.02 (0.01)
Accelerated Course in 8th Grade	0.05*** (0.01)	0.05*** (0.01)	-0.04*** (0.01)
GPA in 8th Grade	-0.00 (0.00)	0.06*** (0.00)	-0.04*** (0.00)
First Failure in Second Year	-0.06*** (0.01)	0.03*** (0.01)	-0.04*** (0.01)
First Failure in Third Year	-0.13*** (0.02)	0.00 (0.01)	-0.07*** (0.01)
First Failure in Fourth Year	-0.06 (0.04)	0.06** (0.02)	-0.26*** (0.02)
First Failure in Fifth Year	-0.09** (0.03)	-0.35*** (0.06)	-0.45*** (0.03)
Failed a Math Class	0.04*** (0.01)	0.02** (0.01)	-0.02*** (0.01)
Failed a Science Class	0.01* (0.01)	-0.01 (0.01)	-0.02*** (0.01)

	(1) EOC Score	(2) Graduated	(3) Dropout
Failed a Social Studies Class	-0.02*** (0.00)	-0.10*** (0.01)	0.05*** (0.00)
Failed an English Class	-0.05*** (0.01)	-0.06*** (0.01)	0.02*** (0.01)
Average Distance From Passing for Failed Courses	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Average Distance from Passing EOC Courses	-0.00** (0.00)	-0.01*** (0.00)	0.01*** (0.00)
Average EOC Score When Passed Class First Time	0.77*** (0.02)	0.09*** (0.01)	-0.03*** (0.01)
Average Distance from Passing EOC Courses X Average EOC Score When Passed Class	-0.00 (0.00)	0.00** (0.00)	-0.00** (0.00)
Whether the Student Was Involved in a Disciplinary Incident in Year of First Cou	-0.03** (0.01)	-0.07*** (0.01)	0.06*** (0.01)
Missing 8th Grade Covariates	-0.16* (0.07)	-0.36*** (0.08)	0.81*** (0.07)
Missing 8th Grade Test Score	-0.04* (0.01)	-0.11*** (0.02)	0.08*** (0.01)
Missing 8th Grade Transcript	-0.03 (0.03)	-0.05 (0.03)	0.05 (0.03)
Missing 8th Grade Grades	0.04 (0.03)	0.13*** (0.03)	-0.07** (0.02)
Missing Overage	-0.08*** (0.02)	-0.06*** (0.01)	0.05*** (0.01)

	(1)	(2)	(3)
	EOC Score	Graduated	Dropout
Missing Grades for EOC Courses	0.04*** (0.01)	-0.13*** (0.01)	0.16*** (0.01)
Missing Number Grades	0.02** (0.01)	0.04** (0.01)	-0.01 (0.01)
Missing Discipline Data	-0.03* (0.01)	-0.05*** (0.01)	0.02* (0.01)
Constant	0.11 (0.07)	1.07*** (0.08)	-0.57*** (0.07)
Observations	73170	50126	50126

Note. Standard errors in parentheses; Standard errors clustered at the school level; Difference in observations reflects different unit of analyses with the EOC analysis at the test-test date level and high school graduation/dropout analysis at the student level.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

D. Robustness checks for EOC scores outcome.

Table D1

Results from student-by-school fixed effect models with standardized end of course exam scores as the outcomes, including CR&F2F coefficients.

	(1) All Students	(2) Non-ED	(3) ED	(4) Non-Black, Non-Hispanic	(5) Black	(6) Hispanic
<i>Panel A: All EOCs</i>						
CR	0.048** (0.018)	0.057 (0.033)	0.043 (0.023)	0.074* (0.033)	0.031 (0.024)	0.041 (0.035)
F2F	0.165*** (0.013)	0.172*** (0.022)	0.160*** (0.015)	0.189*** (0.022)	0.143*** (0.017)	0.167*** (0.020)
CR&F2F	0.076*** (0.022)	0.085 (0.048)	0.071* (0.028)	0.059 (0.036)	0.106** (0.033)	0.067 (0.049)
Observations	196286	57351	138935	79690	81209	35421
R ²	0.81	0.86	0.81	0.82	0.80	0.82
<i>Panel B: Math I EOC</i>						
CR	0.019 (0.042)	0.029 (0.062)	0.017 (0.053)	0.013 (0.070)	0.020 (0.055)	0.035 (0.068)
F2F	0.102*** (0.024)	0.112* (0.054)	0.099** (0.032)	0.092* (0.041)	0.089* (0.037)	0.152** (0.046)
CR&F2F	0.027 (0.038)	0.036 (0.074)	0.027 (0.053)	-0.003 (0.053)	0.049 (0.056)	0.062 (0.095)
Observations	83321	23133	60188	34815	33960	14566
R ²	0.89	0.91	0.90	0.88	0.89	0.89
<i>Panel C: English II EOC</i>						
CR	-0.010 (0.057)	-0.025 (0.144)	-0.020 (0.076)	0.027 (0.087)	-0.037 (0.069)	-0.024 (0.129)
F2F	0.137*** (0.041)	0.097 (0.107)	0.135** (0.052)	0.141 (0.075)	0.131** (0.048)	0.110 (0.100)
CR&F2F	0.061 (0.074)	0.128 (0.196)	0.040 (0.096)	0.013 (0.144)	0.073 (0.113)	0.071 (0.147)
Observations	57504	17174	40330	23322	23483	10705
R ²	0.94	0.96	0.94	0.94	0.93	0.94
<i>Panel D: Biology EOC</i>						
CR	0.026 (0.080)	0.079 (0.149)	-0.006 (0.105)	0.120 (0.158)	-0.026 (0.102)	-0.060 (0.147)
F2F	0.217*** (0.061)	0.278* (0.139)	0.203** (0.069)	0.282* (0.113)	0.190** (0.073)	0.146 (0.098)
CR&F2F	0.102 (0.076)	0.143 (0.199)	0.091 (0.085)	0.118 (0.140)	0.110 (0.096)	0.040 (0.154)
Observations	55461	17044	38417	21553	23766	10150
R ²	0.92	0.93	0.93	0.91	0.91	0.93

Note. Standard errors in parentheses; Standard errors clustered at the school level; Covariates omitted for brevity.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D2

Results from student-by-school fixed effect models with standardized end of course exam scores as the outcomes weighted with propensity scores.

	(1) All Students	(2) Non-ED	(3) ED	(4) Non-Black, Non-Hispanic	(5) Black	(6) Hispanic
<i>Panel A: All EOCs</i>						
CR	0.048* (0.019)	0.049 (0.034)	0.045 (0.025)	0.077* (0.033)	0.029 (0.026)	0.035 (0.038)
F2F	0.168*** (0.013)	0.174*** (0.023)	0.166*** (0.015)	0.189*** (0.021)	0.144*** (0.018)	0.182*** (0.021)
CR&F2F	0.065** (0.024)	0.065 (0.052)	0.061* (0.029)	0.023 (0.039)	0.105** (0.034)	0.087 (0.051)
Observations	188761	54939	133822	76443	78315	34037
R ²	0.81	0.86	0.81	0.82	0.80	0.82
<i>Panel B: Math I EOC</i>						
CR	0.025 (0.044)	0.039 (0.073)	0.026 (0.054)	0.023 (0.075)	0.025 (0.055)	0.043 (0.075)
F2F	0.111*** (0.026)	0.125* (0.056)	0.109** (0.033)	0.103* (0.044)	0.096* (0.038)	0.168** (0.051)
CR&F2F	0.014 (0.041)	0.014 (0.087)	0.020 (0.053)	-0.029 (0.064)	0.049 (0.059)	0.062 (0.085)
Observations	80259	22271	57988	33460	32792	14027
R ²	0.89	0.91	0.90	0.88	0.90	0.88
<i>Panel C: English II EOC</i>						
CR	-0.016 (0.060)	-0.022 (0.159)	-0.032 (0.075)	0.035 (0.090)	-0.051 (0.076)	-0.044 (0.127)
F2F	0.129** (0.043)	0.096 (0.113)	0.125* (0.054)	0.132 (0.076)	0.122* (0.052)	0.103 (0.100)
CR&F2F	0.020 (0.080)	0.105 (0.208)	-0.007 (0.099)	-0.067 (0.146)	0.054 (0.112)	0.060 (0.143)
Observations	54845	16248	38597	22134	22516	10201
R ²	0.94	0.96	0.94	0.94	0.94	0.94
<i>Panel D: Biology EOC</i>						
CR	0.025 (0.084)	0.073 (0.145)	-0.008 (0.107)	0.120 (0.153)	-0.032 (0.104)	-0.057 (0.151)
F2F	0.221*** (0.058)	0.284* (0.130)	0.213** (0.068)	0.287** (0.105)	0.186* (0.073)	0.157 (0.100)
CR&F2F	0.108 (0.079)	0.143 (0.202)	0.091 (0.091)	0.112 (0.137)	0.108 (0.101)	0.083 (0.177)
Observations	53657	16420	37237	20849	23007	9809
R ²	0.92	0.93	0.94	0.92	0.92	0.94

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure; Covariates omitted for brevity. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D3

Results from school-by-cohort fixed effect models with standardized end of course exam scores as the outcomes weighted with propensity scores.

	(1) All Students	(2) Non-ED	(3) ED	(4) Non-Black, Non-Hispanic	(5) Black	(6) Hispanic
<i>Panel A: All EOCs</i>						
CR	0.034*** (0.009)	0.019 (0.013)	0.044*** (0.010)	0.036** (0.013)	0.027* (0.012)	0.042* (0.018)
F2F	0.174*** (0.006)	0.181*** (0.009)	0.172*** (0.006)	0.172*** (0.009)	0.162*** (0.007)	0.204*** (0.012)
CR&F2F	0.027 (0.015)	-0.008 (0.029)	0.046** (0.016)	-0.032 (0.023)	0.062** (0.023)	0.090** (0.028)
Observations	188761	54939	133822	76443	78315	34037
R ²	0.34	0.43	0.32	0.37	0.33	0.46
<i>Panel B: Math I EOC</i>						
CR	0.067*** (0.011)	0.051** (0.018)	0.076*** (0.013)	0.053** (0.017)	0.064*** (0.017)	0.065** (0.025)
F2F	0.167*** (0.007)	0.183*** (0.012)	0.160*** (0.009)	0.171*** (0.011)	0.153*** (0.011)	0.187*** (0.016)
CR&F2F	0.043** (0.016)	0.010 (0.030)	0.060*** (0.018)	-0.003 (0.023)	0.098*** (0.025)	0.086* (0.036)
Observations	80259	22271	57988	33460	32792	14027
R ²	0.39	0.49	0.39	0.42	0.42	0.54
<i>Panel C: English II EOC</i>						
CR	0.016 (0.015)	0.011 (0.029)	0.022 (0.018)	0.025 (0.026)	-0.006 (0.022)	0.024 (0.036)
F2F	0.159*** (0.011)	0.157*** (0.021)	0.159*** (0.013)	0.146*** (0.018)	0.155*** (0.016)	0.169*** (0.028)
CR&F2F	-0.002 (0.031)	-0.057 (0.066)	0.025 (0.033)	-0.107 (0.059)	0.027 (0.045)	0.170** (0.063)
Observations	54845	16248	38597	22134	22516	10201
R ²	0.49	0.60	0.48	0.55	0.50	0.60
<i>Panel D: Biology EOC</i>						
CR	0.039* (0.016)	0.030 (0.026)	0.042* (0.020)	0.060* (0.024)	0.008 (0.029)	0.062 (0.038)
F2F	0.268*** (0.011)	0.286*** (0.020)	0.255*** (0.012)	0.279*** (0.020)	0.223*** (0.016)	0.328*** (0.022)
CR&F2F	0.097** (0.036)	0.136 (0.073)	0.094* (0.040)	0.078 (0.065)	0.088 (0.058)	0.157* (0.066)
Observations	53657	16420	37237	20849	23007	9809
R ²	0.39	0.53	0.39	0.44	0.40	0.58

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure; Covariates omitted for brevity. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D4

Results from student-by-school fixed effect models with standardized end of course exam scores as the outcomes, restricted to students with at least two EOC scores in a given course.

	(1) All Students	(2) Non-ED	(3) ED	(4) Non-Black, Non-Hispanic	(5) Black	(6) Hispanic
<i>Panel A: All EOCs</i>						
CR	0.038 (0.022)	0.060 (0.036)	0.029 (0.028)	0.071* (0.036)	0.020 (0.026)	0.029 (0.046)
F2F	0.165*** (0.015)	0.185*** (0.028)	0.159*** (0.018)	0.196*** (0.026)	0.139*** (0.019)	0.165*** (0.027)
CR&F2F	0.075*** (0.022)	0.108* (0.050)	0.066* (0.028)	0.065 (0.037)	0.099** (0.033)	0.065 (0.046)
Observations	101349	29085	72264	39910	43415	18044
R^2	0.73	0.79	0.75	0.73	0.73	0.75
<i>Panel B: Math I EOC</i>						
CR	0.019 (0.032)	0.029 (0.048)	0.017 (0.040)	0.013 (0.053)	0.020 (0.042)	0.035 (0.051)
F2F	0.102*** (0.019)	0.112** (0.042)	0.099*** (0.024)	0.092** (0.031)	0.089** (0.028)	0.152*** (0.035)
CR&F2F	0.027 (0.029)	0.036 (0.056)	0.027 (0.040)	-0.003 (0.040)	0.049 (0.043)	0.062 (0.072)
Observations	48351	13456	34895	20049	20009	8309
R^2	0.77	0.82	0.80	0.77	0.78	0.78
<i>Panel C: English II EOC</i>						
CR	-0.010 (0.038)	-0.025 (0.095)	-0.020 (0.052)	0.027 (0.057)	-0.037 (0.048)	-0.024 (0.087)
F2F	0.137*** (0.028)	0.097 (0.071)	0.135*** (0.035)	0.141** (0.049)	0.131*** (0.033)	0.110 (0.068)
CR&F2F	0.061 (0.050)	0.128 (0.129)	0.040 (0.066)	0.013 (0.095)	0.073 (0.079)	0.071 (0.099)
Observations	26257	7451	18806	10119	11283	4856
R^2	0.84	0.88	0.86	0.84	0.84	0.84
<i>Panel D: Biology EOC</i>						
CR	0.026 (0.056)	0.079 (0.103)	-0.006 (0.073)	0.120 (0.106)	-0.026 (0.073)	-0.060 (0.102)
F2F	0.217*** (0.042)	0.278** (0.096)	0.203*** (0.048)	0.282*** (0.076)	0.190*** (0.052)	0.146* (0.068)
CR&F2F	0.102 (0.053)	0.143 (0.138)	0.091 (0.059)	0.118 (0.094)	0.110 (0.068)	0.040 (0.107)
Observations	26741	8178	18563	9742	12123	4879
R^2	0.79	0.81	0.82	0.77	0.79	0.82

Note. Standard errors in parentheses; Standard errors clustered at the school level; Covariates omitted for brevity.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D5

Results from student-by-school fixed effect models with standardized end of course exam scores as the outcomes of the sample to students who did not score proficient on their first test.

	(1) All Students	(2) Non-ED	(3) ED	(4) Non-Black, Non-Hispanic	(5) Black	(6) Hispanic
<i>Panel A: All EOCs</i>						
CR	0.085*** (0.018)	0.113*** (0.033)	0.073** (0.023)	0.130*** (0.032)	0.052* (0.024)	0.072* (0.035)
F2F	0.191*** (0.013)	0.210*** (0.023)	0.182*** (0.015)	0.225*** (0.023)	0.160*** (0.017)	0.194*** (0.020)
CR&F2F	0.107*** (0.022)	0.131** (0.048)	0.098*** (0.027)	0.104** (0.037)	0.119*** (0.033)	0.101* (0.048)
Observations	183055	51431	131624	71992	77779	33315
R ²	0.79	0.84	0.80	0.79	0.78	0.81
<i>Panel B: Math I EOC</i>						
CR	0.025 (0.042)	0.045 (0.063)	0.019 (0.052)	0.022 (0.070)	0.023 (0.055)	0.034 (0.066)
F2F	0.103*** (0.024)	0.107 (0.054)	0.101** (0.032)	0.092* (0.041)	0.089* (0.036)	0.154*** (0.046)
CR&F2F	0.032 (0.037)	0.050 (0.074)	0.028 (0.052)	0.010 (0.052)	0.045 (0.055)	0.061 (0.092)
Observations	81007	22242	58765	33426	33394	14204
R ²	0.88	0.90	0.90	0.87	0.89	0.88
<i>Panel C: English II EOC</i>						
CR	0.035 (0.057)	0.062 (0.138)	0.013 (0.077)	0.085 (0.086)	-0.006 (0.070)	0.034 (0.130)
F2F	0.181*** (0.041)	0.175 (0.104)	0.167** (0.052)	0.205*** (0.072)	0.159*** (0.048)	0.153 (0.102)
CR&F2F	0.102 (0.073)	0.177 (0.196)	0.081 (0.094)	0.093 (0.137)	0.082 (0.116)	0.109 (0.143)
Observations	50500	14012	36488	19462	21528	9516
R ²	0.92	0.94	0.93	0.92	0.92	0.92
<i>Panel D: Biology EOC</i>						
CR	0.028 (0.080)	0.083 (0.150)	-0.004 (0.105)	0.120 (0.157)	-0.020 (0.103)	-0.050 (0.144)
F2F	0.220*** (0.061)	0.289* (0.139)	0.205** (0.070)	0.287* (0.112)	0.192* (0.074)	0.158 (0.096)
CR&F2F	0.113 (0.076)	0.163 (0.192)	0.099 (0.085)	0.130 (0.137)	0.113 (0.096)	0.066 (0.147)
Observations	51548	15177	36371	19104	22857	9595
R ²	0.91	0.91	0.92	0.90	0.91	0.92

Note. Standard errors in parentheses; Standard errors clustered at the school level; Covariates omitted for brevity.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table D6

Models with outcome of ACT composite score (standardized) with propensity score weighting and school-by-cohort fixed effects.

	(1) ACT (std.)	(2) ACT (std.)	(3) ACT (std.)	(4) ACT (std.)
CR Only	-0.22*** (0.040)	-0.25*** (0.054)	-0.23*** (0.043)	-0.31*** (0.071)
CR & F2F	-0.58*** (0.035)	-0.69*** (0.045)	-0.61*** (0.039)	-0.84*** (0.065)
Neither Only	0.28*** (0.035)	0.37*** (0.048)	0.29*** (0.039)	0.46*** (0.066)
Black	-0.90*** (0.043)	-0.92*** (0.047)		
Black CR Student		0.093 (0.078)		
Black CR & F2F Student		0.28*** (0.064)		
Black Neither Student		-0.21** (0.065)		
Hispanic	-0.66*** (0.056)		-0.68*** (0.065)	
Hispanic CR Student			0.091 (0.082)	
Hispanic CR & F2F Student			0.13 (0.085)	
Hispanic Neither Student			-0.096 (0.078)	
ED	-0.19*** (0.031)			-0.22*** (0.043)
ED CR Student				0.14 (0.077)
ED CR & F2F Student				0.38*** (0.073)
ED Neither Student				-0.29*** (0.071)
Observations	65,044	65,044	65,044	65,044
R ²	0.513	0.514	0.513	0.514

Note. Standard errors in parentheses; Standard errors clustered at the school level; ACT scores are composite scores of all sections of the ACT and are standardized; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure; Covariates omitted for brevity.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

E. Robustness checks for graduating/dropout outcomes.

Table E1

Propensity score weighted results including all treatment and comparison conditions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Graduate	Graduate	Graduate	Graduate	Dropout	Dropout	Dropout	Dropout
CR Only	0.072*** (0.0081)	0.069*** (0.0089)	0.066*** (0.0080)	0.055*** (0.010)	-0.061*** (0.0073)	-0.060*** (0.0082)	-0.056*** (0.0073)	-0.042*** (0.0095)
CR & F2F	-0.0057 (0.0074)	-0.0081 (0.0083)	-0.0084 (0.0073)	-0.031** (0.0099)	-0.079*** (0.0058)	-0.077*** (0.0065)	-0.075*** (0.0059)	-0.063*** (0.0081)
Neither Only	-0.088*** (0.0065)	-0.12*** (0.0066)	-0.089*** (0.0069)	-0.100*** (0.0077)	0.13*** (0.0061)	0.15*** (0.0060)	0.12*** (0.0065)	0.14*** (0.0072)
Black	0.11*** (0.0051)	0.089*** (0.0063)			-0.12*** (0.0049)	-0.10*** (0.0064)		
Black CR Student		0.0082 (0.012)				-0.0032 (0.011)		
Black CR & F2F Student		0.0066 (0.0098)				-0.0054 (0.0081)		
Black Neither Student		0.080*** (0.0086)				-0.072*** (0.0086)		
Hispanic	-0.0024 (0.0069)		-0.011 (0.0084)		-0.021*** (0.0062)		-0.015 (0.0077)	
Hispanic CR Student			0.038* (0.016)				-0.031* (0.014)	
Hispanic CR & F2F Student			0.016 (0.012)				-0.027** (0.0093)	
Hispanic Neither Student			0.00082 (0.0099)				0.012 (0.0092)	
ED	-0.060*** (0.0042)			-0.076*** (0.0056)	0.045*** (0.0035)			0.058*** (0.0051)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Graduate	Graduate	Graduate	Graduate	Dropout	Dropout	Dropout	Dropout
ED CR Student				0.026*				-0.029**
				(0.011)				(0.010)
ED CR & F2F Student				0.037***				-0.024**
				(0.0090)				(0.0080)
ED Neither Student				0.017*				-0.016
				(0.0082)				(0.0083)
Observations	104,164	104,164	104,164	104,164	104,164	104,164	104,164	104,164
R ²	0.239	0.240	0.239	0.239	0.238	0.239	0.238	0.238

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E2

Models with outcome of high school graduation and dropout with propensity score weighting and school-by-cohort fixed effects estimated using logistic regression. Coefficients are logged odds.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Graduate	Graduate	Graduate	Graduate	Dropout	Dropout	Dropout	Dropout
CR Only	0.38*** (0.027)	0.36*** (0.034)	0.35*** (0.029)	0.31*** (0.046)	-0.41*** (0.030)	-0.39*** (0.037)	-0.38*** (0.033)	-0.33*** (0.052)
CR & F2F	0.015 (0.020)	0.013 (0.025)	0.0065 (0.022)	-0.13*** (0.036)	-0.52*** (0.022)	-0.50*** (0.028)	-0.49*** (0.024)	-0.41*** (0.041)
Neither Only	-0.45*** (0.020)	-0.60*** (0.025)	-0.45*** (0.021)	-0.49*** (0.033)	0.70*** (0.021)	0.83*** (0.026)	0.69*** (0.023)	0.76*** (0.035)
Black	0.60*** (0.021)	0.48*** (0.029)			-0.77*** (0.023)	-0.64*** (0.031)		
Black CR Student		0.035 (0.054)				-0.059 (0.061)		
Black CR & F2F Student		0.022 (0.039)				-0.056 (0.044)		
Black Neither Student		0.41*** (0.039)				-0.37*** (0.042)		
Hispanic	-0.036 (0.029)		-0.069 (0.039)		-0.11*** (0.032)		-0.076 (0.042)	
Hispanic CR Student			0.19** (0.071)				-0.21* (0.082)	
Hispanic CR & F2F Student			0.050 (0.050)				-0.16** (0.057)	
Hispanic Neither Student			0.010 (0.050)				0.043 (0.053)	
ED	-0.34*** (0.020)			-0.42*** (0.029)	0.30*** (0.022)			0.37*** (0.032)

ED CR Student				0.099				-0.13*
				(0.055)				(0.062)
ED CR & F2F Student				0.21***				-0.15**
				(0.042)				(0.048)
ED Neither Student				0.049				-0.094*
				(0.040)				(0.042)
Observations	103,633	103,633	103,633	103,633	103,442	103,442	103,442	103,442

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure; Covariates omitted for brevity; The difference in sample size between this model and the linear probability models is caused by the logistic regression procedure dropping units where there was no variation on the outcome within school-cohort (i.e., all students within student cohort graduated or did not drop out).

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E3

Comparison of models with propensity score weighting with indicators for missing data versus case-wise deletion of missing data.

	(1)	(2)	(3)	(4)
	<u>Case-Wise Deletion</u>		<u>Missing Indicators</u>	
	Graduate	Dropout	Graduate	Dropout
CR Only	0.03*** (0.01)	-0.03*** (0.01)	0.07*** (0.01)	-0.06*** (0.01)
CR&F2F	-0.07*** (0.01)	-0.03*** (0.01)	-0.01 (0.01)	-0.08*** (0.01)
Neither	-0.08*** (0.01)	0.12*** (0.01)	-0.09*** (0.01)	0.13*** (0.01)
Black	0.10*** (0.01)	-0.10*** (0.01)	0.11*** (0.01)	-0.12*** (0.00)
Hispanic	0.02* (0.01)	-0.03** (0.01)	-0.00 (0.01)	-0.02*** (0.01)
Other Race	-0.02 (0.01)	-0.01 (0.01)	0.00 (0.01)	-0.02*** (0.01)
Female	0.01 (0.01)	0.00 (0.00)	0.03*** (0.00)	-0.01** (0.00)
Gifted in 8th Grade	-0.01 (0.01)	0.00 (0.01)	-0.03*** (0.01)	0.02** (0.01)
SPED in 8th Grade	0.00 (0.01)	-0.02** (0.01)	0.00 (0.00)	-0.03*** (0.00)
Was LEP in 8th Grade	0.03* (0.01)	-0.05*** (0.01)	0.08*** (0.01)	-0.08*** (0.01)
LEP in 8th Grade	0.01 (0.01)	-0.01 (0.01)	0.07*** (0.01)	-0.07*** (0.01)
Economically Disadvantaged	-0.05*** (0.01)	0.04*** (0.01)	-0.06*** (0.00)	0.04*** (0.00)
Percent Absences in 8th Grade	-0.01*** (0.00)	0.01*** (0.00)	-0.01*** (0.00)	0.01*** (0.00)

Chronically Absent in 8th Grade	-0.04*** (0.01)	0.02* (0.01)	-0.08*** (0.01)	0.07*** (0.01)
Approximate Age in 8th Grade	-0.03*** (0.01)	0.04*** (0.01)	-0.04*** (0.00)	0.07*** (0.00)
Overage in 8th Grade	-0.04*** (0.01)	0.04*** (0.01)	-0.06*** (0.00)	0.05*** (0.00)
Average Test Scores in 8th	0.03*** (0.01)	-0.01*** (0.00)	0.04*** (0.00)	-0.03*** (0.00)
Failed a Course in 8th Grade	-0.04*** (0.01)	0.02** (0.01)	-0.06*** (0.00)	0.04*** (0.00)
Remedial Course in 8th Grade	-0.06** (0.02)	0.02 (0.02)	-0.04*** (0.01)	-0.00 (0.01)
Accelerated Course in 8th Grade	0.03*** (0.01)	-0.02*** (0.01)	0.04*** (0.00)	-0.02*** (0.00)
GPA in 8th Grade	0.05*** (0.01)	-0.04*** (0.00)	0.07*** (0.00)	-0.05*** (0.00)
First Failure in Second Year	0.47*** (0.09)	0.31*** (0.03)	0.06*** (0.01)	-0.07*** (0.01)
First Failure in Third Year	0.53*** (0.09)	0.23*** (0.03)	0.11*** (0.01)	-0.14*** (0.01)
First Failure in Fourth Year	0.52*** (0.09)	0.14*** (0.03)	0.08*** (0.01)	-0.24*** (0.01)
First Failure in Fifth Year			-0.42*** (0.07)	-0.37*** (0.03)
Disciplinary Incident in Year of First Failure	-0.08*** (0.01)	0.06*** (0.01)	-0.07*** (0.01)	0.06*** (0.00)
Missing 8th Grade Covariates			-0.56*** (0.06)	0.91*** (0.05)
Missing 8th Grade Test Score			-0.12*** (0.02)	0.10*** (0.01)
Missing 8th Grade Transcript			-0.09***	0.06**

			(0.02)	(0.02)
Missing 8th Grade Grades			0.18*** (0.02)	-0.12*** (0.02)
Missing Overage			-0.13*** (0.01)	0.08*** (0.01)
Missing Discipline Data			-0.04*** (0.01)	0.02** (0.01)
Constant	0.70*** (0.13)	-0.65*** (0.09)	1.21*** (0.06)	-0.63*** (0.05)
Observations	32415	32415	104164	104164

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E4*Balance on covariates in models with extra high school covariates.*

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Student is Black	CR	0.386	0.487			0.394	0.489		
	None	0.395	0.489	0.019	0.996	0.401	0.49	0.014	0.997
	CR&F2F	0.43	0.495	0.09	0.983	0.391	0.488	0.006	1.001
	F2F	0.366	0.482	0.04	1.01	0.407	0.491	0.026	0.995
Student is Hispanic	CR	0.153	0.36			0.163	0.37		
	None	0.165	0.371	0.032	0.971	0.166	0.372	0.007	0.993
	CR&F2F	0.177	0.382	0.065	0.943	0.167	0.373	0.01	0.991
	F2F	0.158	0.365	0.013	0.988	0.158	0.365	0.013	1.012
Student is Other Race	CR	0.077	0.266			0.08	0.271		
	None	0.083	0.276	0.023	0.965	0.081	0.273	0.004	0.993
	CR&F2F	0.076	0.265	0.002	1.004	0.084	0.278	0.016	0.976
	F2F	0.086	0.281	0.034	0.949	0.084	0.278	0.016	0.977
Student is Female	CR	0.425	0.494			0.411	0.492		
	None	0.41	0.492	0.031	1.005	0.405	0.491	0.012	1.002
	CR&F2F	0.348	0.476	0.159	1.038	0.408	0.491	0.008	1.001
	F2F	0.454	0.498	0.059	0.993	0.425	0.494	0.027	0.996
Student was Gifted (8th Grade)	CR	0.046	0.21			0.055	0.228		
	None	0.044	0.204	0.012	1.027	0.047	0.212	0.036	1.077
	CR&F2F	0.023	0.151	0.124	1.387	0.041	0.198	0.067	1.153
	F2F	0.089	0.284	0.171	0.737	0.055	0.228	0	0.999
Student was SPED (8th Grade)	CR	0.174	0.379			0.18	0.384		
	None	0.182	0.386	0.02	0.983	0.189	0.392	0.024	0.981
	CR&F2F	0.214	0.41	0.101	0.925	0.196	0.397	0.042	0.967
	F2F	0.162	0.368	0.033	1.03	0.18	0.384	0	1
Student was Previously LEP (8th Grade)	CR	0.047	0.211			0.045	0.207		
	None	0.042	0.201	0.022	1.05	0.043	0.202	0.012	1.027

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Student was LEP (8th Grade)	CR&F2F	0.042	0.2	0.025	1.057	0.041	0.197	0.022	1.051
	F2F	0.042	0.201	0.022	1.051	0.039	0.193	0.031	1.074
	CR	0.061	0.24			0.065	0.247		
	None	0.068	0.251	0.027	0.954	0.069	0.254	0.015	0.974
Student is Economically Disadvantaged	CR&F2F	0.085	0.279	0.092	0.859	0.071	0.257	0.022	0.964
	F2F	0.055	0.228	0.026	1.051	0.061	0.24	0.017	1.031
	CR	0.651	0.477			0.667	0.471		
	None	0.677	0.468	0.053	1.019	0.68	0.467	0.027	1.01
Percent Days Absent (8th Grade)	CR&F2F	0.729	0.445	0.168	1.072	0.684	0.465	0.037	1.014
	F2F	0.621	0.485	0.064	0.982	0.663	0.473	0.01	0.997
	CR	5.922	6.231			6.406	7.047		
	None	6.281	6.914	0.055	0.901	6.493	7.09	0.012	0.994
Chronically Absent (8th Grade)	CR&F2F	6.593	6.602	0.105	0.944	6.804	7.61	0.054	0.926
	F2F	6.619	7.984	0.097	0.781	6.487	7.328	0.011	0.962
	CR	0.211	0.408			0.23	0.421		
	None	0.222	0.415	0.026	0.982	0.234	0.423	0.009	0.994
Approximate Age (8th Grade)	CR&F2F	0.247	0.432	0.087	0.945	0.249	0.432	0.043	0.974
	F2F	0.232	0.422	0.051	0.966	0.235	0.424	0.01	0.994
	CR	13.18	4.264			13.131	4.35		
	None	13.104	4.399	0.018	0.969	13.191	4.294	0.014	1.013
Overage (8th Grade)	CR&F2F	13.415	3.993	0.057	1.068	13.002	4.567	0.029	0.952
	F2F	12.978	4.578	0.046	0.931	13.048	4.47	0.019	0.973
	CR	0.261	0.439			0.258	0.437		
	None	0.268	0.443	0.016	0.992	0.273	0.445	0.034	0.982
Average 8th Grade Test Score	CR&F2F	0.297	0.457	0.079	0.962	0.276	0.447	0.041	0.979
	F2F	0.248	0.432	0.031	1.017	0.26	0.438	0.005	0.997
	CR	-0.354	0.716			-0.364	0.734		
	None	-0.398	0.737	0.06	0.972	-0.404	0.756	0.055	0.971
	CR&F2F	-0.584	0.718	0.32	0.998	-0.424	0.737	0.083	0.996

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Failed a Class (8th Grade)	F2F	-0.198	0.794	0.207	0.902	-0.349	0.787	0.019	0.932
	CR	0.285	0.451			0.314	0.464		
	None	0.309	0.462	0.053	0.977	0.326	0.469	0.024	0.991
	CR&F2F	0.411	0.492	0.269	0.917	0.33	0.47	0.033	0.987
Took Remedial Course (8th Grade)	F2F	0.257	0.437	0.062	1.033	0.306	0.461	0.019	1.008
	CR	0.027	0.162			0.027	0.163		
	None	0.027	0.162	0.002	1.005	0.028	0.164	0.003	0.992
	CR&F2F	0.027	0.161	0.003	1.008	0.027	0.161	0.004	1.013
Took Advanced Course (8th Grade)	F2F	0.03	0.17	0.016	0.955	0.027	0.161	0.003	1.008
	CR	0.153	0.36			0.181	0.385		
	None	0.172	0.377	0.051	0.954	0.166	0.372	0.041	1.036
	CR&F2F	0.11	0.313	0.126	1.149	0.152	0.359	0.079	1.073
GPA (8th Grade)	F2F	0.246	0.431	0.235	0.835	0.179	0.384	0.005	1.004
	CR	2.218	1.017			2.153	1.032		
	None	2.138	1.031	0.079	0.986	2.129	1.031	0.023	1.001
	CR&F2F	1.978	0.924	0.247	1.101	2.054	1.019	0.096	1.013
First Failed in 2 nd Year	F2F	2.283	1.135	0.06	0.896	2.139	1.085	0.013	0.951
	CR	0.285	0.451			0.249	0.432		
	None	0.29	0.454	0.011	0.995	0.257	0.437	0.019	0.99
	CR&F2F	0.251	0.433	0.077	1.041	0.25	0.433	0.001	0.999
First Failed in 3 rd Year	F2F	0.197	0.397	0.207	1.135	0.268	0.443	0.043	0.977
	CR	0.262	0.44			0.182	0.386		
	None	0.167	0.373	0.233	1.179	0.189	0.392	0.018	0.986
	CR&F2F	0.11	0.312	0.399	1.407	0.18	0.385	0.005	1.004
First Failed in 4 th Year	F2F	0.201	0.401	0.143	1.096	0.225	0.418	0.107	0.924
	CR	0.119	0.324			0.096	0.295		
	None	0.04	0.196	0.296	1.655	0.069	0.253	0.1	1.166
	CR&F2F	0.03	0.17	0.346	1.911	0.09	0.286	0.022	1.031
	F2F	0.168	0.374	0.14	0.866	0.109	0.312	0.043	0.946

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
First Failed in 5 th Year	CR	0.008	0.09			0.005	0.068		
	None	0.002	0.046	0.085	1.954	0.004	0.061	0.013	1.102
	CR&F2F	0.004	0.059	0.061	1.52	0.006	0.08	0.024	0.85
	F2F	0.005	0.07	0.041	1.29	0.006	0.076	0.016	0.893
Failed a Math Class	CR	0.555	0.497			0.586	0.493		
	None	0.641	0.48	0.177	1.036	0.608	0.488	0.044	1.009
	CR&F2F	0.853	0.354	0.691	1.403	0.615	0.487	0.059	1.012
	F2F	0.302	0.459	0.527	1.082	0.593	0.491	0.014	1.003
Failed a Science Class	CR	0.359	0.48			0.403	0.491		
	None	0.403	0.491	0.091	0.978	0.42	0.494	0.034	0.994
	CR&F2F	0.658	0.475	0.627	1.011	0.42	0.494	0.033	0.994
	F2F	0.195	0.396	0.373	1.211	0.398	0.49	0.01	1.002
Failed a Social Studies Class	CR	0.36	0.48			0.361	0.48		
	None	0.336	0.472	0.05	1.016	0.385	0.487	0.05	0.987
	CR&F2F	0.641	0.48	0.587	1	0.394	0.489	0.069	0.983
	F2F	0.157	0.364	0.475	1.318	0.369	0.483	0.016	0.995
Failed an English Class	CR	0.366	0.482			0.378	0.485		
	None	0.364	0.481	0.004	1.001	0.4	0.49	0.046	0.99
	CR&F2F	0.66	0.474	0.617	1.017	0.412	0.492	0.07	0.985
	F2F	0.16	0.367	0.48	1.313	0.382	0.486	0.009	0.998
Numerical Distance from Passing Grade, Average	CR	7.315	9.922			8.224	12.36		
	None	6.341	10.467	0.096	0.948	7.984	12.014	0.02	1.029
	CR&F2F	9.674	10.091	0.236	0.983	8.581	12.174	0.029	1.015
	F2F	11.046	18.375	0.253	0.54	7.884	14.872	0.025	0.831
Numerical Distance from Passing Grade, Average of EOC Courses Only	CR	1.432	4.948			2.38	7.06		
	None	2.192	6.174	0.136	0.802	2.491	6.562	0.016	1.076
	CR&F2F	3.737	7.291	0.37	0.679	2.642	7.124	0.037	0.991
	F2F	2.181	7.395	0.119	0.669	2.147	6.655	0.034	1.061
Average EOC Score for Courses,	CR	-0.336	0.601			-0.337	0.623		

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
First-Time Enrollment Only	None	-0.354	0.6	0.029	1.002	-0.365	0.632	0.045	0.986
	CR&F2F	-0.527	0.533	0.336	1.127	-0.379	0.569	0.07	1.095
	F2F	-0.179	0.668	0.247	0.9	-0.333	0.739	0.006	0.843
Average EOC Score X Distance From Passing, First-Time Enrollment Only	CR	-0.849	5.43			-1.381	8.162		
	None	-1.248	5.467	0.073	0.993	-1.411	5.918	0.004	1.379
	CR&F2F	-2.573	6.976	0.276	0.778	-1.465	5.537	0.012	1.474
Disciplinary Infraction	F2F	-0.552	6.362	0.05	0.854	-1.139	10.203	0.026	0.8
	CR	0.184	0.388			0.13	0.336		
	None	0.113	0.317	0.2	1.223	0.125	0.331	0.014	1.016
Missing 8th Grade Covariates	CR&F2F	0.111	0.314	0.209	1.236	0.128	0.335	0.005	1.006
	F2F	0.12	0.325	0.178	1.192	0.136	0.343	0.017	0.982
	CR	0.093	0.29			0.097	0.296		
Missing 8th Grade Test Scores	None	0.099	0.299	0.022	0.97	0.094	0.292	0.01	1.014
	CR&F2F	0.08	0.271	0.048	1.073	0.108	0.31	0.036	0.954
	F2F	0.109	0.311	0.052	0.933	0.103	0.304	0.02	0.973
Missing 8th Grade Transcript	CR	0.119	0.324			0.129	0.335		
	None	0.13	0.336	0.032	0.965	0.125	0.331	0.013	1.015
	CR&F2F	0.108	0.31	0.037	1.046	0.144	0.351	0.043	0.955
Missing 8th Grade Grades	F2F	0.145	0.352	0.076	0.921	0.134	0.341	0.015	0.984
	CR	0.093	0.291			0.099	0.298		
	None	0.1	0.3	0.022	0.97	0.096	0.294	0.011	1.014
Missing 8th Grade Transcript	CR&F2F	0.082	0.275	0.038	1.058	0.108	0.311	0.032	0.959
	F2F	0.106	0.308	0.042	0.946	0.104	0.305	0.018	0.977
	CR	0.101	0.301			0.107	0.309		
Missing 8th Grade Grades	None	0.108	0.31	0.022	0.971	0.103	0.305	0.011	1.014
	CR&F2F	0.09	0.286	0.038	1.054	0.119	0.323	0.037	0.955
	F2F	0.115	0.319	0.045	0.945	0.112	0.316	0.018	0.978
Missing Overage in 8th Grade	CR	0.173	0.378			0.192	0.394		
	None	0.19	0.392	0.043	0.965	0.188	0.391	0.011	1.009

Variable		Pre-Match				Post-Match			
		Mean	SD	Std. Diff with CR	SD Ratio	Mean	SD	Std. Diff with CR	SD Ratio
Missing Numerical Distance from Passing for EOC Courses	CR&F2F	0.17	0.375	0.009	1.007	0.21	0.407	0.045	0.967
	F2F	0.21	0.407	0.094	0.929	0.201	0.401	0.023	0.982
	CR	0.407	0.491			0.425	0.494		
	None	0.397	0.489	0.02	1.004	0.407	0.491	0.037	1.006
	CR&F2F	0.296	0.456	0.235	1.077	0.422	0.494	0.008	1.001
Missing Numerical Distance from Passing	F2F	0.515	0.5	0.219	0.983	0.455	0.498	0.061	0.993
	CR	0.355	0.479			0.438	0.496		
	None	0.516	0.5	0.328	0.958	0.448	0.497	0.021	0.998
	CR&F2F	0.281	0.449	0.16	1.065	0.45	0.497	0.024	0.997
Missing Average EOC Scores for Courses Passed First Time	F2F	0.477	0.499	0.248	0.958	0.521	0.5	0.166	0.993
	CR	0.044	0.206			0.07	0.256		
	None	0.062	0.241	0.078	0.855	0.063	0.243	0.031	1.055
	CR&F2F	0.033	0.178	0.06	1.156	0.087	0.282	0.063	0.906
Missing Discipline Data	F2F	0.12	0.324	0.276	0.635	0.073	0.26	0.01	0.983
	CR	0.457	0.498			0.597	0.491		
	None	0.651	0.477	0.398	1.045	0.612	0.487	0.032	1.007
	CR&F2F	0.735	0.441	0.591	1.129	0.606	0.489	0.018	1.004
	F2F	0.534	0.499	0.154	0.999	0.538	0.499	0.12	0.984

Note. Standardized differences and standard deviation (SD) ratios are between the CR mean/SD and the other treatment statuses mean/SD; Post matching estimates are weighted using the propensity score; Differences outside of the acceptable range of values are bolded (greater than 0.25 for standardized differences and outside of the 0.5 to 2 range for SD ratios); Means will be lower in this table than overall descriptive for variables that we transformed to zero when data were missing.

Table E5

Propensity score weighted results including all treatment and comparison conditions with extra high school covariates.

	(1) Graduate	(2) Graduate	(3) Graduate	(4) Graduate	(5) Dropout	(6) Dropout	(7) Dropout	(8) Dropout
CR Only	0.075*** (0.0083)	0.070*** (0.0092)	0.070*** (0.0083)	0.064*** (0.011)	-0.057*** (0.0078)	-0.056*** (0.0087)	-0.053*** (0.0077)	-0.040*** (0.010)
CR & F2F	0.049*** (0.0086)	0.049*** (0.010)	0.043*** (0.0087)	0.033* (0.013)	-0.071*** (0.0076)	-0.072*** (0.0091)	-0.064*** (0.0078)	-0.068*** (0.011)
Neither Only	-0.039*** (0.0070)	-0.066*** (0.0077)	-0.035*** (0.0073)	-0.040*** (0.0096)	0.066*** (0.0073)	0.084*** (0.0078)	0.063*** (0.0071)	0.062*** (0.0089)
Black	0.10*** (0.0065)	0.083*** (0.0070)			-0.11*** (0.0062)	-0.099*** (0.0070)		
Black CR Student		0.012 (0.012)				-0.0046 (0.011)		
Black CR & F2F Student		0.00027 (0.012)				0.0032 (0.011)		
Black Neither Student		0.069*** (0.012)				-0.046*** (0.012)		
Hispanic	0.0016 (0.0084)		-0.0048 (0.0092)		-0.019* (0.0079)		-0.013 (0.0089)	
Hispanic CR Student			0.032* (0.016)				-0.028 (0.015)	
Hispanic CR & F2F Student			0.039* (0.016)				-0.038** (0.014)	
Hispanic Neither Student			-0.021 (0.014)				0.019 (0.015)	
ED	-0.043*** (0.0056)			-0.051*** (0.0066)	0.038*** (0.0050)			0.041*** (0.0059)
ED CR Student				0.017				-0.027*

				(0.012)				(0.011)
ED CR & F2F Student				0.023				-0.0035
				(0.014)				(0.012)
ED Neither Student				0.0017				0.0058
				(0.010)				(0.010)
Observations	104,164	104,164	104,164	104,164	104,164	104,164	104,164	104,164
R ²	0.310	0.311	0.310	0.310	0.293	0.294	0.293	0.293

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E6

Propensity score weighted results including all treatment and comparison conditions, restricted to students with access to CR since 9th grade.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Graduate	Graduate	Graduate	Graduate	Dropout	Dropout	Dropout	Dropout
CR Only	0.074*** (0.0081)	0.070*** (0.0090)	0.067*** (0.0081)	0.055*** (0.010)	-0.062*** (0.0074)	-0.061*** (0.0083)	-0.056*** (0.0074)	-0.041*** (0.0097)
CR & F2F	-0.0034 (0.0073)	-0.0064 (0.0083)	-0.0061 (0.0074)	-0.029** (0.0099)	-0.081*** (0.0059)	-0.078*** (0.0066)	-0.076*** (0.0060)	-0.063*** (0.0083)
Neither Only	-0.091*** (0.0068)	-0.12*** (0.0068)	-0.091*** (0.0072)	-0.10*** (0.0080)	0.13*** (0.0064)	0.16*** (0.0062)	0.13*** (0.0068)	0.14*** (0.0076)
Black	0.11*** (0.0052)	0.088*** (0.0065)			-0.12*** (0.0051)	-0.10*** (0.0066)		
Black CR Student		0.010 (0.013)				-0.0026 (0.011)		
Black CR & F2F Student		0.0080 (0.010)				-0.0077 (0.0081)		
Black Neither Student		0.082*** (0.0089)				-0.074*** (0.0088)		
Hispanic	-0.0029 (0.0072)		-0.010 (0.0086)		-0.022*** (0.0064)		-0.015 (0.0079)	
Hispanic CR Student			0.040* (0.016)				-0.033* (0.014)	
Hispanic CR & F2F Student			0.016 (0.012)				-0.028** (0.0094)	
Hispanic Neither Student			-0.0035 (0.010)				0.013 (0.0096)	
ED	-0.062*** (0.0043)			-0.079*** (0.0058)	0.047*** (0.0036)			0.061*** (0.0053)

ED CR Student				0.029**				-0.030**
				(0.011)				(0.010)
ED CR & F2F Student				0.038***				-0.027**
				(0.0091)				(0.0081)
ED Neither Student				0.015				-0.015
				(0.0086)				(0.0087)
Observations	98,475	98,475	98,475	98,475	98,475	98,475	98,475	98,475
R ²	0.234	0.235	0.234	0.234	0.233	0.234	0.233	0.233

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E7

Results from a coarsened exact matching models with matching based on 8th grade test scores and receiving a disciplinary infraction with Mahalanobis distance determining matches based on full set of covariates with case-wise deletion and with missing indicators.

	(1)	(2)	(3)	(4)
	<u>Case-Wise Deletion</u>		<u>Missing Indicators</u>	
	Graduate	Dropout	Graduate	Dropout
CR	-0.02 (0.01)	-0.04*** (0.01)	0.03*** (0.01)	-0.08*** (0.01)
Black	0.10*** (0.01)	-0.08*** (0.01)	0.11*** (0.01)	-0.11*** (0.01)
Hispanic	0.04* (0.02)	-0.03 (0.01)	0.00 (0.01)	-0.03*** (0.01)
Other Race	0.00 (0.01)	-0.01 (0.01)	0.01 (0.01)	-0.02** (0.01)
Female	0.02* (0.01)	-0.00 (0.01)	0.04*** (0.00)	-0.01** (0.00)
Gifted in 8th Grade	-0.03 (0.02)	0.02 (0.01)	-0.05*** (0.01)	0.03*** (0.01)
SPED in 8th Grade	0.00 (0.01)	-0.00 (0.01)	0.01* (0.01)	-0.03*** (0.00)
Was LEP in 8th Grade	-0.01 (0.02)	-0.02 (0.02)	0.06*** (0.01)	-0.06*** (0.01)
Current LEP in 8th Grade	0.03 (0.02)	-0.04** (0.01)	0.07*** (0.01)	-0.07*** (0.01)
Economically Disadvantaged	-0.04*** (0.01)	0.03*** (0.01)	-0.06*** (0.01)	0.04*** (0.00)
Percent Absences in 8th Grade	-0.01*** (0.00)	0.01*** (0.00)	-0.01*** (0.00)	0.01*** (0.00)
Chronically Absent in 8th Grade	-0.01 (0.01)	0.01 (0.01)	-0.05*** (0.01)	0.04*** (0.01)
Approximate Age in 8th Grade	-0.02 (0.01)	0.03*** (0.01)	-0.03*** (0.00)	0.06*** (0.00)

Overage in 8th Grade	-0.03** (0.01)	0.03** (0.01)	-0.05*** (0.01)	0.05*** (0.01)
Average Test Scores in 8th	0.05*** (0.01)	-0.03*** (0.01)	0.05*** (0.00)	-0.03*** (0.00)
Failed a Course in 8th Grade	-0.05*** (0.01)	0.03*** (0.01)	-0.06*** (0.01)	0.03*** (0.01)
Remedial Course in 8th Grade	-0.06* (0.03)	0.04 (0.03)	-0.07*** (0.01)	-0.01 (0.01)
Accelerated Course in 8th Grade	0.01 (0.01)	-0.01 (0.01)	0.04*** (0.01)	-0.02*** (0.01)
GPA in 8th Grade	0.05*** (0.01)	-0.03*** (0.01)	0.07*** (0.00)	-0.05*** (0.00)
First Failure in Second Year	0.55*** (0.09)	0.20*** (0.03)	0.08*** (0.01)	-0.08*** (0.01)
First Failure in Third Year	0.56*** (0.09)	0.17*** (0.02)	0.10*** (0.01)	-0.12*** (0.01)
First Failure in Fourth Year	0.50*** (0.10)	0.10*** (0.02)	0.03 (0.02)	-0.19*** (0.01)
First Failure in Fifth Year			-0.45*** (0.07)	-0.30*** (0.03)
Disciplinary Incident First Year Of failure	-0.10*** (0.01)	0.07*** (0.01)	-0.08*** (0.01)	0.05*** (0.01)
Missing 8th Grade Covariates			-0.45*** (0.07)	0.78*** (0.06)
Missing 8th Grade Test Score			-0.13*** (0.02)	0.10*** (0.02)
Missing 8th Grade Transcript			-0.04 (0.03)	0.03 (0.03)
Missing 8th Grade Grades			0.19*** (0.03)	-0.11*** (0.02)

Missing Overage			-0.13*** (0.01)	0.08*** (0.01)
Missing Discipline Data			-0.05*** (0.01)	0.03*** (0.01)
Constant	0.43** (0.15)	-0.41*** (0.10)	1.07*** (0.06)	-0.50*** (0.06)
Observations	14403	14403	59914	59914

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models are not weighted by inverse probability weights or propensity scores instead the sample is restricted to students who matched through coarsened exact matching and by Mahalanobis distance.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E8

Models with outcome of high school graduation and dropout with propensity score weighting and school-by-cohort fixed effects restricted to students who failed one course in high school.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Graduate	Graduate	Graduate	Graduate	Dropout	Dropout	Dropout	Dropout
CR Only	0.022*** (0.0067)	0.025** (0.0081)	0.019** (0.0069)	0.017 (0.0095)	-0.020** (0.0066)	-0.022** (0.0083)	-0.018** (0.0063)	-0.0087 (0.0092)
CR & F2F	-0.00070 (0.010)	-0.0025 (0.013)	0.0018 (0.011)	-0.0095 (0.016)	-0.033*** (0.0072)	-0.033** (0.010)	-0.034*** (0.0079)	-0.017 (0.013)
Neither Only	-0.12*** (0.0061)	-0.14*** (0.0070)	-0.12*** (0.0066)	-0.12*** (0.0080)	0.13*** (0.0054)	0.16*** (0.0063)	0.13*** (0.0057)	0.13*** (0.0074)
Black	0.082*** (0.0062)	0.054*** (0.0078)			-0.083*** (0.0058)	-0.056*** (0.0074)		
Black CR Student		-0.0075 (0.012)				0.0061 (0.010)		
Black CR & F2F Student		0.0051 (0.019)				-0.00038 (0.015)		
Black Neither Student		0.070*** (0.010)				-0.066*** (0.0095)		
Hispanic	-0.011 (0.0085)		-0.012 (0.010)		-0.0064 (0.0070)		-0.010 (0.0082)	
Hispanic CR Student			0.019 (0.016)				-0.014 (0.014)	
Hispanic CR & F2F Student			-0.016 (0.026)				0.0024 (0.020)	
Hispanic Neither Student			-0.0016 (0.012)				0.013 (0.011)	
ED	-0.037*** (0.0051)			-0.040*** (0.0073)	0.027*** (0.0044)			0.033*** (0.0059)

ED CR Student				0.0074 (0.011)				-0.018 (0.0096)
ED CR & F2F Student				0.014 (0.021)				-0.026 (0.016)
ED Neither Student				0.0030 (0.0094)				-0.0061 (0.0090)
Observations	43,749	43,749	43,749	43,749	43,749	43,749	43,749	43,749
R ²	0.279	0.280	0.279	0.279	0.242	0.244	0.243	0.243

Note. Standard errors in parentheses; Standard errors clustered at the school level; Models weighted with propensity scores created through a marginal mean weighting through stratification procedure; Covariates omitted for brevity.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table E9***Results exploiting cross-cohort differences in access to CR.***

	(1)	(2)
	Graduated in Four	Dropout
Cohort with CR Access	0.028 (0.029)	-0.00050 (0.046)
Observations	1,307	1,307
R ²	0.349	0.279

Note. Standard errors in parentheses; Standard errors clustered at the school level; Covariates omitted for brevity.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$