

## Supplemental Materials

### Individual and Collapsed Treatment Effects on Post-Study Grade Point Average (GPA)

An ordinary least squares (OLS) regression assessing the effect of treatment on semester GPA was reported in the main text. The regression output is shown in Supplemental Table 1.

We also conducted the regression using baseline GPA as a moderator in place of at-risk status. Again the moderation was significant,  $b=-0.06$ ,  $t(1573)=-2.22$ ,  $p=0.026$ . Lower performing students based on prior GPA (-1 SD) showed a significant intervention effect on post-study GPA,  $b=0.08$ ,  $t(1573)=2.25$ ,  $p=0.024$ ; higher-performing students (+1 SD) showed no effect,  $t<1$ .

Similar results for GPA were obtained using a mixed-effects model with the outcome of individual class grades. As with the OLS model, we controlled for pre-study GPA, race, and gender, and included random intercepts for school, classroom, and student. The regression revealed the predicted At-Risk  $\times$  Treatment interaction for each treatment condition: It was significant for At-Risk  $\times$  Mindset,  $b=0.13$ ,  $p=0.042$ , 95% CI [0.00, 0.26]; significant for At-Risk  $\times$  Purpose,  $b=0.16$ ,  $p=0.034$ , 95% CI [0.01, 0.30]; and marginally significant for At-Risk  $\times$  Combined,  $b=0.14$ ,  $p=0.054$ , 95% CI [-0.00, 0.29]. Collapsing across treatment groups into a single dummy code (0=control, 1=treatment), the At-Risk  $\times$  Treatment interaction was significant,  $b=0.14$ ,  $p=0.011$ , 95% CI [0.03, 0.25].

The OLS and mixed model regression output can be found in Supplemental Table 1.

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Supplemental Table 1: Individual and collapsed treatment effects on post-study semester GPA.

Model: Outcome:	<i>By Condition</i>		<i>Collapsed Treatment</i>	
	OLS (GPA)	Mixed Model (Course Grade)	OLS (GPA)	Mixed Model (Course Grade)
Mindset:At-Risk	0.132* (0.067)	0.133* (0.066)		
Purpose:At-Risk	0.174* (0.075)	0.156* (0.074)		
Combined:At-Risk	0.136 (0.075)	0.142 (0.074)		
Treatment:At-Risk			0.144* (0.056)	0.141* (0.055)
Mindset	-0.012 (0.037)	-0.016 (0.036)		
Purpose	-0.031 (0.044)	-0.031 (0.043)		
Combined	-0.025 (0.044)	-0.031 (0.043)		
Treatment			-0.020 (0.032)	-0.024 (0.031)
At-Risk	-0.106 (0.064)	-0.126* (0.062)	-0.107 (0.063)	-0.126* (0.062)
Pre-GPA	0.984*** (0.023)	0.992*** (0.023)	0.983*** (0.023)	0.992*** (0.023)
Gender (Male)	-0.038 (0.025)	-0.046 (0.024)	-0.038 (0.025)	-0.046 (0.024)
Black	-0.133* (0.055)	-0.144** (0.053)	-0.133* (0.055)	-0.144** (0.053)
Latino	-0.157*** (0.047)	-0.177*** (0.046)	-0.157*** (0.047)	-0.177*** (0.046)
Other	-0.076 (0.046)	-0.086 (0.045)	-0.076 (0.045)	-0.087 (0.045)
White	-0.094* (0.047)	-0.094* (0.046)	-0.095* (0.047)	-0.094* (0.046)
Intercept	2.511*** (0.066)	2.639*** (0.066)	2.513*** (0.066)	2.640*** (0.066)
Observations	1,594	5,839	1,594	5,839
R <sup>2</sup>	0.820		0.819	
Adjusted R <sup>2</sup>	0.817		0.817	
Log Likelihood		-6,347.7		-6,339.4
AIC		12,731.3		12,706.7
Residual Std. Error	0.483 df(1568)		0.482 df(1572)	
F Statistic	284.8*** df(25;1568)		339.8*** df(21;1572)	

\* p&lt;.05; \*\* p&lt;.01; \*\*\* p&lt;.001

Note: School intercepts omitted from table

## Satisfactory Course Completion

The main text reports a logistic mixed-effect model assessing the effect of treatment on students' likelihood of satisfactory performance in each core academic class (earning an A, B, C, P, or CR vs. D, F, NC, W, or I). This analysis is restricted to at-risk students, as these students accounted for the vast majority of post-intervention course failures.

This “collapsed treatment” regression revealed a significant Time  $\times$  Treatment interaction, such that treatment-group students were significantly more likely to earn satisfactory grades in core academic classes after the intervention than before the intervention ( $\Delta=+6.0\%$ ,  $M=49\%$ ) compared to control-group students ( $\Delta=-0.4\%$ ,  $M=41\%$ ),  $OR=1.48$ ,  $Z=2.18$ ,  $p=0.029$ , 95% CI [1.04, 2.10].

We focused on the “collapsed treatment” regression because this analysis is less statistically powerful than the analysis of semester GPA due to the smaller sample (only at-risk students) and the less sensitive binary outcome. However, we also conducted a “by condition” regression; this was equivalent except that it used individual treatment contrasts in place of collapsed treatment effects. The model revealed a significant Time  $\times$  Purpose interaction,  $OR=1.58$ ,  $Z=1.97$ ,  $p=0.048$ , 95% CI [1.00, 2.48], a trending Time  $\times$  Mindset interaction,  $OR=1.38$ ,  $Z=1.52$ ,  $p=0.13$ , 95% CI [0.91, 2.10], and a marginal Time  $\times$  Combined interaction,  $OR=1.52$ ,  $Z=1.78$ ,  $p=0.075$ , 95% CI [0.95, 2.41].

The mixed-model regression output for course completion is reported in Supplemental Table 2.

Supplemental Table 2: Individual and collapsed treatment effects on satisfactory course completion.

	Collapsed Treatment	By Condition
Time:All Treatments	0.391* (0.180)	
Time:Growth Mindset		0.325 (0.213)
Time:Purpose		0.457* (0.232)
Time:Combined		0.418 (0.235)
All Treatment	0.065 (0.170)	
Growth Mindset		0.001 (0.203)
Purpose		0.189 (0.221)
Combined		0.023 (0.222)
Time (pre-post)	0.054 (0.156)	0.055 (0.156)
Gender (male)	-0.500*** (0.132)	-0.496*** (0.132)
Black	0.007 (0.394)	0.033 (0.393)
Latino	-0.231 (0.363)	-0.216 (0.362)
Other	-0.188 (0.390)	-0.182 (0.389)
White	0.258 (0.413)	0.289 (0.412)
Intercept	0.546 (0.420)	0.535 (0.419)
Observations	3,848	3,848
Log Likelihood	-2,152.8	-2,151.7
Akaike Inf. Crit.	4,329.5	4,335.3
Bayesian Inf. Crit.	4,404.6	4,435.4
Num. Schools	13	13
Num. Classes	212	212
Num. Students	519	519
Variance: Schools	0.22	0.22
Variance: Classes	2.01	2.01
Variance: Students	1.25	1.24

\* p&lt;.05; \*\* p&lt;.01; \*\*\* p&lt;.001

Note: School intercepts omitted from table