Supplemental Materials

Section 1

Social Fit as a Mediator of the Effects of the Difference-Education and Social-Belonging

Interventions on GPA

Social fit was measured using a 15-item scale from Walton and Cohen (2007). The items were on a seven-point scale (1 = *strongly disagree*, 7 = *strongly agree*) and included questions such as "I am similar to the kind of people who succeed at [university]", "People at [university] are a lot like me" and "I feel like an outsider at [university]".

To examine social fit as a potential mediator of the effect of the difference-education and social-belonging interventions on GPA, we first tested whether the interventions improved social fit relative to the control condition (i.e., 'Path A' of a mediation model'). To test this relationship, we used linear regression models in which social fit at Time 1 and Time 2 was predicted by intervention condition, generation status (first-generation vs. continuing-generation), and the interaction between intervention condition and generation status. Scores for outcomes were standardized within school so that scores reflected social fit relative to other students at the same school. We controlled for race and ethnicity (-1 = disadvantaged, 1 = advantaged), gender (-1 = male, 1 = female), high school GPA, SAT/ACT scores, and Pell grant status (-1 = does not receive Pell Grants, 1 = receives Pell Grants). In addition, we also included a covariate for school.

To examine the effects of the difference-education intervention for first-generation students, we conducted a planned contrasts in which we dummy coded generation status (first-generation = 0, continuing-generation = 1) and intervention condition (difference-education vs. control: difference-education = 1, social-belonging = 0, control = 0; social-belonging vs. control:

difference-education = 0, social-belonging = 1, control = 0). This allowed us to examine the simple effect for first-generation students in (1) the difference-education intervention versus the control and (2) the social-belonging intervention versus the control. To examine the effects of the interventions for continuing-generation students, we reversed the dummy coding of generation status (first-generation = 1, continuing-generation = 0). To determine whether the effects of intervention condition were significantly different for first-generation versus continuing-generation students, we used a univariate analysis of variance to test the interaction effect in the regression model.

Table S1 shows the means and standard deviations for social fit for first-generation and continuing-generation students across the three conditions. At Time 1, first-generation students in the difference-education and social-belonging interventions did not differ in social fit compared to students in the control condition (see Table S2 for statistics). Similarly, at Time 2, first-generation students in the difference-education and social-belonging interventions did not differ compared to students in the control condition (see Table S3 for statistics). The same pattern was evident for continuing-generation students: those in the difference-education and social-belonging interventions did not differ in social fit compared to those in the control condition at Time 1 or Time 2. Consequently, across Time 1 and Time 2, there were no significant interactions between the intervention condition and generation status for social fit.

Table S1

Conditional means and SDs of social fit (standardized)

	FG		CG	
	Mean	*SD*	*Mean*	*SD*
Time 1				
Difference-Education	-0.28	1.02	-0.14	1.01
Social-Belonging	-0.46	0.98	-0.17	0.80
Control	-0.44	1.08	-0.17	0.97
Time 2				
Difference-Education	-0.23	0.98	-0.16	0.92
Social-Belonging	-0.44	0.99	-0.11	0.85
Control	-0.40	1.03	-0.10	0.92

Table S2

Effects of condition on social fit at Time 1 by generation status

	beta	*t-value*	*p-value*	*95%CI*	*Cohen's D*
Simple effects: first-generation students					
DE vs. Control	0.15	1.40	0.16	[-.06, .37]	0.15
Belonging vs. Control	-0.02	-0.15	0.88	[-.25, .22]	0.02
DE vs. Belonging	0.17	1.39	0.17	[-.07, .41]	0.18
Simple effects: continuing-generation students					
DE vs. Control	0.04	0.32	0.75	[-.18, .26]	0.03
Belonging vs. Control	0.01	0.04	0.97	[-.23, .24]	0
DE vs. Belonging	0.03	0.25	0.80	[-.21, .27]	0.03
	F	*DF1*	*DF2*	*p*	η_p^2
Interaction: Generation Status x Condition	0.41	2	853	0.66	0.001

Table S3

Effects of condition on social fit at Time 2 by generation status

	beta	*t-value*	*p-value*	*95%CI*	*Cohen's D*
Simple effects: first-generation students					
DE vs. Control	0.17	1.39	0.17	[-.07, .40]	0.17
Belonging vs. Control	-0.05	-0.35	0.73	[-.30, .21]	0.04
DE vs. Belonging	0.21	1.60	0.11	[-.05, .47]	0.21
Simple effects: continuing-generation students					
DE vs. Control	-0.06	-0.43	0.67	[-.31, .20]	0.07
Belonging vs. Control	-0.01	-0.07	0.95	[-.27, .25]	0.01
DE vs. Belonging	-0.05	-0.34	0.74	[-.32, .22]	0.06
	F	*DF1*	*DF2*	*p*	η_p^2
Interaction: Generation Status x Condition	1.15	2	639	0.32	0.004

Empowerment as a Mediator of the Effect of the Social-Belonging Intervention on GPA

To examine empowerment as a potential mediator of the effect of the social-belonging intervention on GPA, we first tested whether the intervention improved empowerment relative to the control condition (i.e., 'Path A' of a mediation model'). To test this relationship, we used linear regression models in which learning empowerment (at Time 1 and Time 2) and resource-seeking (at Time 1 and Time 2) were predicted by intervention condition, generation status (first-generation vs. continuing-generation), and the interaction between intervention condition and generation status. Scores for outcomes were standardized within school so that scores reflected social fit relative to other students at the same school. We controlled for race and ethnicity (-1 = disadvantaged, 1 = advantaged), gender (-1 = male, 1 = female), high school GPA, SAT/ACT scores, and Pell grant status (-1 = does not receive Pell Grants, 1 = receives Pell Grants). In addition, we also included a covariate for school.

To examine the effects of the social-belonging intervention for first-generation students, we conducted a planned contrasts in which we dummy coded generation status (first-generation = 0, continuing-generation = 1) and intervention condition (social-belonging vs. control: difference-education = 0, social-belonging = 1, control = 0). This allowed us to examine the simple effect for first-generation students in the social-belonging intervention versus the control. To examine the effects of the interventions for continuing-generation students, we reversed the dummy coding of generation status (first-generation = 1, continuing-generation = 0). To determine whether the effects of intervention condition were significantly different for first-generation versus continuing-generation students, we used a univariate analysis of variance to test the interaction effect in the regression model.

At Time 1, first-generation students in the social-belonging intervention and those in the control did not differ in learning-empowerment or resource-seeking (see Tables S21 and S23 in Section 9 for statistics). Similarly, at Time 2, first-generation students in the social-belonging intervention and those in the control did not differ in learning-empowerment or resource-seeking (see Tables S22 and S24 in Section 9 for statistics). The same pattern was evident for continuing-generation students: those in the social-belonging intervention did not differ in empowerment from those in the control.

Consequently, across Time 1 and Time 2, there were no significant interactions between the intervention condition and generation status for learning empowerment or resource seeking.

Section 2

Table S4 *Endowment and cost of lower- vs. higher-resourced institutions*			
School	Current 2020 Endowment	Cost Before Financial Aid	Cost After Financial Aid
Lower-Resourced Institution 1	$4,000 Million	$60,000	$14,000
Lower-Resourced Institution 2	$2,430 Million	$50,000	$13,000
Lower-Resourced Institution 3	$6 Million*	$21,000	$14,000
Lower-Resourced Institution 4	$89 Million*	$11,000	$6,000
Higher-Resourced Institution 1	$11,100 Million	$79,000	$25,000
Higher-Resourced Institution 2	$5,914 Million	$76,000	$30,000
*Data was drawn from the National Association of College and University Business Officers. Numbers are rounded to the nearest million and thousand.			

Given that lower-resourced Institution 1 had relatively more resources (i.e., higher endowment and a higher cost) than the other three lower-resourced institutions (2, 3, and 4), we examined whether our results differed between these universities based on their relative amount of resources. We found no evidence of moderation based on this difference in our sample.

To examine this moderation, we created a new variable and dummy coded each institution as either having relatively fewer resources (i.e., Institution 2, 3, and 4; coded 0), or having relatively more resources (i.e., Institution 1; coded 1). We then examined the three way interaction between intervention condition, first-generation status, and the dummy coded variable capturing university cost. These results revealed no significant interactions between intervention condition and university cost for cumulative GPA, $p = .91$, fall GPA, $p = .76$, spring GPA, $p = .99$, learning empowerment at Time 1, $p = .75$, learning empowerment at Time 2, $p = .40$, resource seeking at Time 1, $p = .78$, resource seeking at Time 2, $p = .85$, comfort with social difference at Time 1, $p = .19$, or comfort with social difference at Time 2, $p = .97$. Additionally

there were no significant three-way interactions between intervention condition, first-generation status, and university cost for cumulative GPA, $p = .38$, fall GPA, $p = .14$, spring GPA, $p = .31$, learning empowerment at Time 1, $p = .67$, learning empowerment at Time 2, $p = .91$, resource seeking at Time 1, $p = .56$, resource seeking at Time 2, $p = .23$, comfort with social difference at Time 1, $p = .79$, or comfort with social difference at Time 2, $p = .57$.

Taken together, these findings indicate that the effects of the interventions did not differ between the relatively more-resourced Institution 1 and the relatively less-resourced Institutions 2, 3 and 4.

Section 3

Table S5

Demographics across four intervention sites after exclusions

	Institution 1		Institution 2		Institution 3		Institution 4	
	N (%)							
Women	302	(68%)	173	(72%)	36	(58%)	82	(60%)
Men	140	(32%)	65	(27%)	25	(40%)	39	(39%)
Non-Binary	2	(1%)	1	(1%)	1	(2%)	1	(1%)
White and Asian	290	(66%)	184	(77%)	50	(81%)	116	(85%)
URM	152	(34%)	55	(23%)	12	(19%)	21	(15%)
First-generation	218	(49%)	134	(56%)	34	(55%)	66	(47%)
Continuing-generation	226	(51%)	105	(44%)	28	(45%)	74	(53%)
Qualifies for Pell Grant	195	(44%)	111	(46%)	27	(46%)	33	(32%)
	Mean (SD)							
High School GPA	3.91	(.15)	3.75	(.30)	3.17	(.36)	3.13	(.58)
SAT/ACT score	1376	(152)	1189	(165)	1031	(111)	1162	(182)

Table S6

Distribution of participant demographics across conditions before exclusions

	Difference-Education	Social-Belonging	Control
	Frequency (%)		
Women	56.4%	57.0%	61.3%
Men	33.8%	29.3%	30.3%
White and Asian	65.2%	65.0%	68.8%
URM	25.7%	22.0%	23.3%
First-generation	48.9%	46.5%	48.7%
Continuing-generation	46.5%	48.2%	46.9%
Pell Grant recipients	37.5%	36.4%	35.7%
	Mean		
High School GPA	3.62	3.62	3.62
SAT/ACT score	1238	1239	1245

Table S7

Distribution of generation status and Pell Grant eligibility across four intervention sites after exclusions

	Institution 1	Institution 2	Institution 3	Institution 4
	N (%)			
First-generation	151 (69.6%)	86 (64.2%)	22 (66.7%)	22 (37.3%)
Continuing-generation	44 (19.5%)	25 (23.8%)	5 (19.2%)	9 (12.7%)

Section 4

Intent-to-Treat and Per-Protocol Parameters

A significant number of participants in the study did not comply with the research protocols as indicated by the amount of time that they spent on the intervention and control materials. In the main text, we excluded all participants who did not comply in the two intervention conditions (difference-education and social-belonging) as well as in the control condition. This approach constituted a "per-protocol" (PP) strategy in which we estimated the effects of the interventions using participants who complied with the research protocol to which they were assigned.

Below, Tables S8 through S9 display effects estimated using both this per protocol strategy and one additional strategy: the intent-to-treat (ITT) approach, in which estimates are calculated based on the conditions to which participants were assigned, regardless of whether they complied with their specific research protocols.

Among first-generation students, we find a significant effect of the two interventions (difference-education and social-belonging) on Fall GPA in the per-protocol analysis. In addition, we find a significant effect on Fall GPA for only the difference-education intervention in the more conservative ITT analysis.

Table S8
Estimated effects of intervention condition on student GPA

	Cumulative GPA		Fall GPA		Spring GPA	
	ITT	PP	ITT	PP	ITT	PP
FG						
DE vs. Control	.09	.14	.18*	.22*	.00	.06
Belonging vs. Control	-.01	.19†	.15	.38***	-.14	-.02
CG						
DE vs. Control	.04	.03	.04	.07	.05	.01
Belonging vs. Control	.01	-.04	.02	-.05	.04	-.01

For the empowerment analyses, among both first- and continuing-generation students, we find no significant differences across conditions.

Table S9
Estimated effects of intervention condition on student empowerment

	Learning Empowerment		Resource-seeking	
	ITT	PP	ITT	PP
FG				
DE vs. Control	.04	.08	.03	.10
Belonging vs. Control	-.01	.10	.07	.04
CG				
DE vs. Control	-.14	-.08	-.03	.04
Belonging vs. Control	-.19[†]	-.06	-.18[†]	-.17

Note. ITT = intent-to-treat; PP = per-protocol; FG = first-generation student; CG = continuing-generation student; DE = difference-education intervention; Belonging = social-belonging intervention; [†] .05 < p < .10; *.01 < p < .05, **.001 < p < .01, *** p < .001.

We also conducted the ITT analyses and Per Protocol analyses with the intervention variable coded to contrast the two interventions (difference-education = 1, social-belonging = 1) to the control condition (control = -2). The results are displayed in Table S10. Among first-generation students, the two interventions combined (compared to the control) show a significant effect in the Fall in both the per-protocol and more conservative ITT analysis.

Table S10
Estimated effects of intervention vs control on student GPA

	Cumulative GPA		Fall GPA		Spring GPA	
	ITT	PP	ITT	PP	ITT	PP
Intervention vs. Control						
FG	0.01	0.04	.05*	.10**	-0.03	-0.003
CG	0.01	0.004	0.01	0.01	0.01	0.001

Note. ITT = intent-to-treat; PP = per-protocol; FG = first-generation student; CG = continuing-generation student; intervention = difference-education intervention and social-belonging intervention; [†].05 < *p* < .10; *.01 < *p* < .05, **.001 < *p* < .01, *** *p* < .001.

Section 5

Analysis of Participants Excluded From Sample

Comparison of participants who did and did not comply with the research protocol. Of the original 1249 participants recruited for the study, 287 participants were excluded from the study because they did not meet the 1 minute criterion for reading the intervention materials. To determine if the participants who did not comply (i.e., spent less than 60 seconds on the study materials) differed significantly from those who complied (i.e., spent more than 60 seconds on the study materials), we conducted binomial regression models in which student characteristics and study condition predicted whether or not students were excluded or included in the study. Table S11 below displays the descriptive statistics of each predictor for the group of participants excluded from the sample, the group of participants included in the sample, and the total sample including both groups. For continuous predictors, Table S11 reports the mean and standard deviation for each group. For categorical predictors, Table S11 reports the frequency and percentage for each group. Lastly, Table S11 indicates which of the predictors significantly predicted exclusion or inclusion in the sample based on the time spent on study materials.

Overall, we found that students were more likely to be excluded from the sample (i.e., spent less than 60 seconds on study materials) if they reported lower high school GPAs and standardized test scores, were male, or were in the social-belonging intervention. Race, social class background (i.e., first-generation status and Pell Grant eligibility), and first-time enrollment did not predict likelihood of exclusion.

Table S11
Demographic differences in exclusion from or inclusion in the final sample based on time spent on study materials

	Excluded	Included	Total Sample
		Mean (SD)	

Student characteristic			
High school GPA***	3.33 (.62)	3.69 (.46)	3.56 (.53)
SAT/ACT score***	1150 (222)	1265 (202)	1228 (212)
		N (%)	
Student characteristic			
*Gender***			
Female	109 (15%)	619 (85%)	728
Male	94 (24%)	295 (76%)	389
Race			
URM	50 (17%)	246 (83%)	296
White/Asian	156 (19%)	673 (81%)	829
Generation status			
First-generation	120 (20%)	480 (80%)	600
Continuing-generation	133 (23%)	456 (77%)	589
Pell Grant status			
Received Pell Grant	76 (17%)	380 (83%)	456
Did not receive Pell Grant	126 (19%)	534 (81%)	660
First-time enrollment			
Yes	177 (18%)	806 (82%)	983
No	27 (19%)	114 (81%)	141
*Condition***			
Difference-Education	70 (17%)	341 (83%)	411
Social-Belonging	145 (36%)	263 (64%)	408
Control	71 (17%)	358 (83%)	429

Notes. Asterisks indicate demographic factors that are significant predictors of being excluded from the sample (i.e., spending less than 1 minute on study materials); *$.01 < p < .05$, **$.001 < p < .01$, *** $p < .001$. Total sample sizes for each category vary due to missing data.

As noted above, given the 1-minute criterion, participants were more likely to be excluded from the social-belonging intervention condition (41%) than the difference-education intervention condition (21%) or the control condition (24%). We examined the distribution of participants across conditions based on multiple demographic factors. Table S12 displays the frequency and means of the demographic factors across conditions. Overall, we found the participants were evenly distributed across conditions on the basis of: gender, $\chi^2 = 3.37$, $p = .19$; race, $\chi^2 = .75$, $p = .69$; generation status, $\chi^2 = .63$, $p = .73$; and Pell Grant status, $\chi^2 = 1.74$, $p =$

.42. Furthermore, participants in the three conditions did not differ in high school GPA, F (2, 884) = .30, p = .74, or SAT/ACT scores, F (2, 880) = .16, p = .85.

Table S12 *Distribution of included participant demographics across conditions*	Difference-Education	Social-Belonging	Control
	Frequency (%)		
Women	64.2%	71.6%	68.2%
Men	35.8%	28.4%	31.8%
White and Asian	71.0%	73.7%	73.7%
URM	29.0%	26.3%	26.3%
First-generation	51.0%	50.8%	47.5%
Continuing-generation	49.0%	49.2%	52.5%
Pell Grant recipients	41.9%	45.0%	39.5%
	Mean		
High School GPA	3.69	3.71	3.69
SAT/ACT score	1265	1270	1260

One possible consequence of higher attrition in the social-belonging condition is that any benefits of the condition could be because students who were excluded had less academic potential than students who were included. To address the question of whether those excluded from each of the three conditions differed in academic potential or demographic factors, we tested whether there were significant differences in demographic variables and baseline academic performance (i.e., high school GPA and SAT/ACT scores) by condition among the students who were excluded from the sample. Table S13 shows the results of these analysis.

We found no differences in gender, race, first-generation status, or Pell Grant status across the different conditions in the excluded sample. There were significant differences evident in high school GPA and SAT/ACT scores, but they were in the opposite direction as would be expected if students with less academic potential dropped out more in the treatment conditions than the control. Specifically, excluded students who were assigned to the social-belonging

condition had higher high school GPAs than excluded students assigned to the control condition.

Furthermore, there were no differences between excluded students assigned to the control and

those assigned to either intervention condition in SAT/ACT scores. However, excluded students

assigned to the social-belonging condition did have higher SAT/ACT scores than those assigned

to the difference-education condition.

Table S13
Distribution of excluded participants' demographics across conditions

	Difference-Education	Social- Belonging	Control
	Frequency (%)		
Women	54.7%	54.0%	57.9%
Men	45.3%	43.6%	40.4%
White and Asian	75.0%	76.6%	80.7%
URM	25.0%	23.4%	19.3%
First-generation	48.9%	46.5%	48.7%
Continuing-generation	47.5%	51.0%	56.2%
Pell Grant recipients	40.3%	37.2%	35.1%
	Mean		
High School GPA*	3.2[a]	3.4[b]	3.2[a]
SAT/ACT score**	1060[a]	1167[b]	1125[a,b]

Note. Asterisks indicate there was a significant difference among the three conditions; *.01 < *p* < .05, **.001 < *p* < .01, *** *p* < .001. Different superscripted letters indicate that the difference between specific conditions was significant.

Section 6

<u>Interview Protocol to Adapt Materials to Intervention Contexts:</u>

When scheduling interview

1. Year, major, race, gender identity, generation status.

Before asking questions, thank the student for taking the time to talk with you and give them an overview of the project we are working on.

Sample script: Thank you for agreeing to chat with me today, I really appreciate it and I'm excited to be talking with you! As, [contact] may have mentioned, we wanted to talk with a few students from [university name] to get a sense of what student life is like here. We are working in partnership with [university name] in an effort to understand how to better support students. We've conducted this program in the past with other colleges where we've shown students stories of successful senior students in an effort to improve various college outcomes. We have a set of stories that we have been successful with in the past but we want to understand how to adapt these stories to the [university name] context. We will not use your name or any identifying details if we do modify our stories to include some of what you share with me today. How does this sound to you? Is it okay if I record the conversation for the purposes of accurately reflecting what your experiences are, should we choose to include some of your stories in this program?

Great, this interview will have two parts. First, I will ask you some more general questions about your experience at [university name]. Next, I will ask you some more specific, logistical questions about [university name]. Do you have any questions before we begin?

General Questions

1. Before you went to college, what did you expect college would be like? Were your expectations realized, or was college very different from what you thought?

2. What surprised you about the college experience? (please provide a specific story or example)

3. What was the transition like for you? (please provide a specific story or example)

4. Thanks for sharing all of this with me so far. So, to give you a little more context, a lot of other school are starting to create programs around the theme of failure and struggles in college, with the hopes of using these stories shared by students to help other students put their struggles and obstacles into context. If you don't mind sharing, what obstacles did you face, in general, and how did your background prior to college affect the challenges you faced? (please elaborate on as many obstacles as you can think of)

5. What are the major lessons that you have learned from your transition to [college name] and from your adjustment to college? (please be specific and offer examples)

6. If you were to start college again, what would you do differently? Why?

7. What would you advise other students to do with backgrounds similar to yours?

8. What aspect about your college have you personally appreciated the most?

9. In what way do you feel most similar to most students at [university name]? What is one thing about you that makes you feel particularly different from most students at [university name]?

10. What does belonging in college mean to you? What are some times or situations that you have felt like you belong?

11. How important is belonging to [university name] to you? How important is belonging to other students at [university name]?

12. What are the obstacles to belonging that you experienced? What are the obstacles to belonging that you think other students experienced?

13. How important is academic belonging to you (i.e., feeling like you belong in classes, etc.)? What are situations where you felt like you belong and what are the obstacles to academic belonging that you experienced?

Logistical Questions

1. What are some common majors at your school? What would you say is the most common major?

2. In your classes, if you are struggling, what are the options you have to receive extra help: TAs? Email a professor? Go to a professor's office hours? Tutoring? How do each of these work? What is the name of the writing center? Tutoring center? Success services? Graduate students (is interacting with graduate students possible--especially important for students at Institution 1)?

3. At what point during their college career do students typically declare a major? At what time are students required to declare a major? Do you have to declare a major at all?

4. If you are trying to get into a class and it's full, what is the typical course of action? Is it appropriate to email a professor or come talk to him/her on the first day of classes?

5. Is there an office on campus that organizes student activities? What is this called? What is the name of the drama club? Black Student Union? What are some clubs you are involved in? Do students involve themselves in research activities, is this even possible? Do students form study groups and have lab partners?

6. How often do students go home? To what extent is the school considered a "commuter school"? Do most students live on campus? Are students required to live on campus? Do

students' parents visit them often? How often do you or other students typically talk with people from home? Would the phrase "go home" make sense to most students to mean that they are going to their hometown? Do students ever feel homesick?

7. Do students live away from or with their families, typically? (only ask at Institution 1)

8. Can student ever attend school on a part-time status?

9. What is the average class size at your college? What is the range of class sizes (i.e. are there some rather small classes and some very large ones)? Do you have discussion sections in addition to large lectures?

10. How do people typically make friends when they get to [university name] (e.g., events on campus, parties, campus organizations, etc.)? Also, for [Institution 1] specifically, what is the social scene like? Do people tend to socialize with people on campus and have friends from college? Do students have friends from high school that they already know often?

11. How do people typically view [university name] academically? Is it known for being a good school amongst students? Are professors well-regarded in their field? Do students consider themselves part of an academic or intellectual community at [university name] or as generally high-achieving? Do professors have "weeding out" practices?

12. For CCs: Do you typically feel as though you "applied" for college or simply enrolled? What was the process like?

13. For CCs: Would you use "freshman year" as a way to describe your first year at college? Or do people typically say something like, "my first year of college". What about "sophomore", "junior", and "senior" years? Also, would you ever say "upperclassmen"?

14. For CCs: How active are people on campus with extracurriculars (e.g., clubs)?

Section 7

Measures Included in Study

Internalizing the Message

Difference-Education & Control

Open-ended Questions
1. Please summarize three of the key points that you learned from the stories.
2. How does your story relate to the stories that you just read?
3. Which stories resonate with you most and why?
4. Based on what you learned from the stories, what are the three key pieces of advice that you would give to [university] students about how to succeed in college?

Social-Belonging

We would like you to describe:

Essay
1. Any worries you had about fitting in and belonging when you came to college.
2. How you have overcome these concerns as you have spent more time at [university]."
3. Why these worries are likely to be common in the transition to college.

Open-ended Questions
1. Which stories resonate the most with your own experiences coming to [university]? Why?
2. Which stories do you think resonate the most with the typical experiences of students coming to [university]? Why?
3. Are there any stories that you do not think resonate with common experiences of students coming to [university]? Why?
4. Are there any difficulties that you think students commonly experience in the transition to [university] that were not discussed in one or more of the stories?

Empowerment

Learning Empowerment

Instructions
Using the scale below (1 = Strongly Disgree, 7 = Strongly Agree), please rate your agreement with the following statements:

Items
1. I can do things at my college in a way that is right for me.
2. I have a choice about what I am doing and learning at my college.
3. I have the power to influence my college experience.
4. When I really want to do something, I usually find a way to succeed at it.
5. [Time 1] I'm certain I can master the skills taught at my college this upcoming year.
   [Time 2] I'm certain I can master the skills taught at my college.
6. I can do all of the work in class if I don't give up.
7. I'm certain I can figure out how to do the most difficult classwork.

Resource Seeking

Instructions   *[Time 1] Please think about your expectations for your first year of college. Approximately how many times per month (0-5) do you think you will engage in the following actions?*

[Time 2] Please think about your experiences during your first year of college. Approximately how many times per month (0-5) did you engage in the following actions?

Items
1. Email a professor to ask a question
2. Meet with a professor outside of class
3. Go to the Career Center
4. Use the Academic Advancement Program services
5. Go to the Undergraduate Writing Center
6. Meet with other students to work on homework outside of class
7. Meet with other students to study for tests or exams outside of class
8. Meet with a mentor or advisor to seek feedback or advice on course assignments
9. Meet with a mentor or advisor to seek feedback or advice on choosing classes or narrowing an area of interest
10. Meet with a mentor or advisor to seek feedback or advice on future aspirations or career goals
11. Meet with a TA outside of class
12. Email a TA to ask a question

Social Fit

Sense of Belonging

Instructions   *Using the scale below (1 = Strongly Disagree, 7=Strongly Agree), please rate your agreement with the following statements:*

Items
1. People at [university] accept me.
2. I would be comfortable spending some time with my parents on campus and showing them around.
3. I am similar to the kind of people who succeed at [university.
4. I feel a part of the college community at [university].
5. [University] is a place for students like me.
6. I get along well with people at [university].
7. Other people understand more than I do about what is going on at [university].
8. [Time 1] I expect that the academic experience at [university] will be difficult for me.
[Time 2] I feel that the academic experience at [university] will be difficult for me.
9. I feel like an outsider at [university].

10. I am well prepared to be academically successful as a student at [university].
11. It is a mystery to me how things work at [university].
12. I belong at [university].
13. People at [university] are a lot like me.
14. People who have backgrounds like my own are included at [university].
15. [Time 1] I expect that I will have to change who I am to fit in at [university].
    [Time 2] I have to change who I am to fit in at [university].

Comfort with Social Group Difference

Motivation to Bridge Differences

Instructions	*Using the scale below (1 = Strongly Disagree, 7=Strongly Agree), please rate your agreement with the following two items:*
Items	1. [Time 1] In college, I hope to have the opportunity to educate others about my social groups (e.g., race, gender, social class background). [Time 2] In college, I have the opportunity to educate others about my social groups (e.g., race, gender, social class background). 2. [Time 1] In college, I look forward to learning about social groups (e.g., race, gender, social class background) different from my own. [Time 2] In college, I have learned about social groups (e.g., race, gender, social class background) different from my own.

Multigroup Ethnic Identity Measure

Instructions	*Please consider your social class background or identity in terms of your family's income, education, or occupational status. Using the scale below (1 = Strongly Disagree, 7=Strongly Agree), rate your agreement with the following statements:*
Items	1. I feel a strong sense of pride about people with the same social class background as me. 2. I feel good about my social class background. 3. I feel ashamed of my social class background.

Intergroup Warmth

Instructions	*How warmly (1 = Not Warm at All, 7 = Very Warm) do you feel toward...*
Items	1. People who are low income/working-class in the United States? 2. People who are middle income/middle-class in the United States? 3. People who are wealthy/upper-class in the United States?

Intergroup Respect

Instructions	*How much respect/admiration (1 = Not Much Respect at All, 7 = A Lot of Respect) do you feel toward...*
Items	1. People who are low income/working-class in the United States?

2. People who are middle income/middle-class in the United States?

3. People who are wealthy/upper-class in the United States?

Intergroup Comfort

Instructions   *How comfortable (1 = Not Comfortable at All, 7 = Very Comfortable) would you be interacting with someone…*

Items
1. From a different social class background than you?
2. From a different racial or ethnic background than you?
3. From a different country than you?
4. From a different religious background than you?

Additional Measures Not Included in Manuscript

Appreciation of Differences

Instructions   *Using the scale below (1 = Strongly Disagree, 7 = Strongly Agree), please rate your agreement with the following statements:*

Items
1. Students with different backgrounds and experiences can find their own ways of being successful at my college.
2. There are different ways to be a successful college student.
3. My college makes an effort to include ideas and practices that represent a wide variety of backgrounds.
4. Please select a "6" for this question.
5. I think that my background will help me succeed at my college.

Social Identity Threat

Instructions   *Using the scale below (1= Strongly Disagree, 7 = Strongly Agree), please rate your agreement with the following statements:*

Items
1. [Time 1] I expect students at my college to be accepting of people who have diverse backgrounds.
   [Time 2] Students at my college to be accepting of people who have diverse backgrounds.
2. [Time 1] I expect other students at my college to make unfair assumptions about me based on my background.
   [Time 2] Students at my college to make unfair assumptions about me based on my background.
3. [Time 1] I expect professors at my college to make unfair assumptions about me based on my background.
   [Time 2] Professors at my college to make unfair assumptions about me based on my background.

Perceived Diversity

Instructions   *Using the scale below (1= Strongly Disagree, 7 = Strongly Agree), please rate your agreement with the following statements:*

Items

1. The families of students attending [university] mostly come from similar backgrounds.

2. Students at [university] differ in the type of upbringing and education they received before attending [university].

Self-Construal Overlap

Instructions/ Items

1. *[Family] Please select the picture below that best describes your current relationship with your FAMILY.*

2. *[Friends] Please select the picture below that best describes your current relationship with your FRIENDS FROM HOME.*

3. *[College Community] Please select the picture below that best describes your current relationship with your COLLEGE COMMUNITY.*

Section 8

Analyses With Additional Measures Not Included in Main Text

In addition to empowerment and social fit, we also measured perceived diversity, appreciation of differences in the university, and self-construal overlap (for both family and friends from home).

Both perceived diversity and appreciation of differences captured students' perceptions of how their universities manage and respond to diversity, i.e., the extent to which diversity is present and valued in the university (see Section 5 for measure items).

To measure self-construal overlap with family and friends from home, we used an adapted version of the Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1994). In this measure, participants were shown a series of two increasingly overlapping circles—one labeled "self" and one labeled "family"/"friends from home." At one end the "self" and "family"/"friends from home" were completely separate from each other (1); at the other end of the scale, the majority of the circles were overlapping (7). Participants were asked to choose which image best represented "your current relationship with your family" and "your current relationship with your friends from home."

To examine the effects of difference-education and social-belonging interventions on perceived diversity, appreciation of differences in the university, and self-construal overlap with family and friends from home, we tested linear regressions model in which outcome was predicted by intervention condition (difference-education vs. social-belonging vs. control), generation status (first-generation vs. continuing-generation), and the interaction between intervention condition and generation status. Scores for outcomes were standardized within school so that scores reflected social fit relative to other students at the same school. We

controlled for race and ethnicity (-1 = disadvantaged, 1 = advantaged), gender (-1 = male, 1 = female), high school GPA, SAT/ACT scores, and Pell grant status (-1 = does not receive Pell Grants, 1 = receives Pell Grants). In addition, we also included a covariate for school.

To examine the effects of the intervention conditions for first-generation students, we conducted planned contrasts in which we dummy coded generation status (first-generation = 0, continuing-generation = 1) and intervention condition (difference-education vs. control: difference-education = 1, social-belonging = 0, control = 0; social-belonging vs. control: difference-education = 0, social-belonging = 1, control = 0). This allowed us to examine the simple effect for first-generation students in (1) the difference-education intervention versus the control and (2) the social-belonging intervention versus the control. To examine the effects of the interventions for continuing-generation students, we reversed the dummy coding of generation status (first-generation = 1, continuing-generation = 0). To determine whether the effects of intervention condition were significantly different for first-generation versus continuing-generation students, we used a univariate analysis of variance to test the interaction effect in the regression model.

Time 1

First-generation students in the difference-education and social-belonging interventions did not differ in perceived diversity, appreciation of differences in the university, self-construal overlap with family, or self-construal overlap with friends from home compared to students in the control condition, p's > .14.

Continuing-generation students in the difference-education and social-belonging interventions did not differ in appreciation of differences in the university or self-construal overlap with family, p's > .35. Furthermore, continuing-generation students in the difference-

education intervention did not differ in perceived diversity compared to students in the control, p = .44, and continuing-generation students in the social-belonging intervention did not differ in self-construal overlap with friends from home compared to students in the control, p = .29. However, continuing-generation students in the social-belonging intervention reported marginally more perceived diversity compared to students in the control, b = .20, t = 1.69, p = .09. Additionally, and continuing-generation students in the difference-education intervention reported less self-construal overlap with friends from home compared to students in the control, b = -.24, t = 2.14, p = .03.

There were no significant interactions between the intervention condition and generation status for appreciation of differences in the university, self-construal overlap with family, or self-construal overlap with friends from home, p's > .31. However, the interaction between the intervention condition and generation status for perceived diversity reached a marginal level of significance, $F(2, 853)$ = 2.60, p = .07. The interaction was driven by a marginally significant positive effect of the social-belonging intervention (vs. the control condition) on perceived diversity for continuing-generation students and a nonsignificant negative effect for first-generation students.

Time 2

First-generation students in the difference-education and social-belonging interventions did not differ in perceived diversity, appreciation of differences in the university, self-construal overlap with family, or self-construal overlap with friends from home compared to students in the control condition, p's > .21.

Continuing-generation students in the difference-education and social-belonging interventions did not differ in perceived diversity, appreciation of differences in the university, or

self-construal overlap with family, *p*'s > .41. Furthermore, continuing-generation students in the

social-belonging intervention did not differ in self-construal overlap with friends from home

compared to students in the control, *p* = .16. However, continuing-generation students in the

difference-education intervention reported marginally less self-construal overlap with friends

from home compared to students in the control, *b* = -.25, *t* = -1.84, *p* = .07.

Nevertheless, there were no significant interactions between the intervention condition

and generation status for perceived diversity, appreciation of differences in the university, self-

construal overlap with family, or self-construal overlap with friends from home, *p*'s > .26.

Section 9

Complete Statistics for Analyses of the Effect of Difference-Education on Outcomes in Manuscript: GPA, Learning Empowerment, Resource-Seeking, and Comfort With Social Group Difference

The following tables report the complete statistics for the analyses conducted in the study. These statistics are reported in three sections.

First, Tables S14 through S17 report the descriptive statistics for study outcomes (i.e., GPA, learning empowerment, resource-seeking and comfort with social group difference) across the three study conditions (i.e., difference-education intervention, social-belonging intervention, and control condition) for each subgroup of first-generation students and continuing-generation students.

Tables S18 through S26 report the effects of the interaction between generation status (first-generation vs. continuing-generation) and study condition (difference-education vs. social-belonging vs. control) on study outcomes while controlling for the covariates reported in the manuscript. Each table reports the simple effects of study condition for first-generation and continuing-generation students as well as the interaction effect between these two factors. Tables S27 through S35 report the effects without covariates report the same analyses as S18 through S26 without controlling for covariates.

Conditional means and SDs for study outcomes

Table S14
Conditional means and SDs of cumulative, Fall, and Spring GPA (standardized)

	FG		CG	
	Mean	*SD*	*Mean*	*SD*
Cumulative				
Difference-Education	0.08	1.09	0.24	0.73
Social-Belonging	0.14	1.03	0.17	0.88
Control	-0.04	0.95	0.21	0.82
Fall				
Difference-Education	0.17	1.05	0.31	0.69
Social-Belonging	0.33	0.91	0.20	0.92
Control	-0.05	0.98	0.24	0.96
Spring				
Difference-Education	0.00	1.10	0.12	0.80
Social-Belonging	-0.08	1.14	0.11	0.87
Control	-0.06	0.91	0.11	0.81

Table S15
Conditional means and SDs of learning empowerment (standardized)

	FG		CG	
	Mean	*SD*	*Mean*	*SD*
Time 1				
Difference-Education	0.07	1.07	0.09	0.86
Social-Belonging	0.09	0.88	0.11	0.88
Control	-0.01	0.87	0.17	0.97
Time 2				
Difference-Education	0.03	1.12	0.04	0.95
Social-Belonging	0.06	0.87	0.08	0.99
Control	0.01	0.99	0.23	1.00

Table S16

Conditional means and SDs of resource-seeking (standardized)

	FG		*CG*	
	Mean	*SD*	*Mean*	*SD*
Time 1				
Difference-Education	-0.16	1.05	-0.18	0.96
Social-Belonging	-0.23	1.12	-0.41	0.86
Control	-0.26	1.01	-0.22	0.94
Time 2				
Difference-Education	-0.13	1.02	0.04	1.01
Social-Belonging	-0.27	0.91	-0.13	0.80
Control	-0.05	1.10	0.00	1.05

Table S17

Conditional means and SDs of comfort with social group difference (standardized)

	FG		*CG*	
	Mean	*SD*	*Mean*	*SD*
Time 1				
Difference-Education	-0.02	0.65	-0.09	0.64
Social-Belonging	-0.11	0.58	-0.13	0.57
Control	-0.17	0.63	-0.07	0.62
Time 2				
Difference-Education	-0.23	0.64	-0.25	0.62
Social-Belonging	-0.21	0.53	-0.32	0.64
Control	-0.31	0.63	-0.20	0.59

Effects of condition (difference-education vs. social-belonging vs. control) on study

outcomes by generation status (first-generation vs. continuing-generation)

Table S18					
Effects of condition on cumulative GPA by generation status					
					Cohen's
	beta	*t-value*	*p-value*	*95%CI*	*D*
Simple effects: first-generation students					
DE vs. Control	0.12	1.27	0.21	[-.07, .31]	0.12
Belonging vs. Control	0.19	1.76	0.08	[-.02, .39]	0.18
DE vs. Belonging	-0.07	-0.60	0.55	[-.28, .15]	0.06
Simple effects: continuing-generation students					
DE vs. Control	0.03	0.31	0.75	[-.16, .22]	0.04
Belonging vs. Control	-0.04	-0.36	0.72	[-.25, .17]	0.05
DE vs. Belonging	0.07	0.65	0.52	[-.14, .28]	0.09
	F	*DF1*	*DF2*	*p*	η_p^2
Interaction: Generation Status x Condition	1.13	2	843	0.32	0.003

Table S19					
Effects of condition on Fall GPA by generation status					
					Cohen's
	beta	*t-value*	*p-value*	*95%CI*	*D*
Simple effects: first-generation students					
DE vs. Control	0.22	2.23	0.03	[.03, .40]	0.22
Belonging vs. Control	0.38	3.52	0.00	[.17, .59]	0.40
DE vs. Belonging	-0.16	-1.48	0.14	[-.37, .05]	0.16
Simple effects: continuing-generation students					
DE vs. Control	0.07	0.66	0.51	[-.13, .26]	0.08
Belonging vs. Control	-0.05	-0.42	0.67	[-.25, .16]	0.04
DE vs. Belonging	0.11	1.03	0.30	[-.10, .32]	0.14
	F	*DF1*	*DF2*	*p*	η_p^2
Interaction: Generation Status x Condition	3.91	2	847	0.02	0.01

Table S20

Effects of condition on Spring GPA by generation status

	beta	t-value	p-value	95%CI	Cohen's D
Simple effects: first-generation students					
DE vs. Control	0.06	0.58	0.56	[-.14, .25]	0.06
Belonging vs. Control	-0.02	-0.22	0.83	[-.24, .19]	0.02
DE vs. Belonging	0.08	0.72	0.47	[-.14, .30]	0.07
Simple effects: continuing-generation students					
DE vs. Control	0.01	0.07	0.94	[-.20, .21]	0.01
Belonging vs. Control	-0.01	-0.06	0.96	[-.22, .21]	0.00
DE vs. Belonging	0.01	0.12	0.90	[-.21, .23]	0.01
	F	DF1	DF2	p	η_p^2
Interaction: Generation Status x Condition	0.11	2	817	0.90	0.00

Table S21

Effects of condition on learning empowerment at Time 1 by generation status

	beta	t-value	p-value	95%CI	Cohen's D
Simple effects: first-generation students					
DE vs. Control	0.08	0.81	0.42	[-.12, .29]	0.08
Belonging vs. Control	0.10	0.90	0.37	[-.12, .33]	0.11
DE vs. Belonging	-0.02	-0.16	0.87	[-.25, .21]	0.02
Simple effects: continuing-generation students					
DE vs. Control	-0.08	-0.77	0.44	[-.29, .13]	0.09
Belonging vs. Control	-0.07	-0.59	0.56	[-.29, .16]	0.06
DE vs. Belonging	-0.02	-0.13	0.89	[-.24, .21]	0.02
	F	DF1	DF2	p	η_p^2
Interaction: Generation Status x Condition	0.82	2	853	0.44	0.002

Table S22

Effects of condition on learning empowerment at Time 2 by generation status

	beta	t-value	p-value	95% CI	Cohen's D
Simple effects: first-generation students					
DE vs. Control	0.02	0.16	0.88	[-.23, .27]	0.02
Belonging vs. Control	0.05	0.34	0.73	[-.23, .32]	0.05
DE vs. Belonging	-0.03	-0.18	0.86	[-.30, .25]	0.03
Simple effects: continuing-generation students					
DE vs. Control	-0.19	-1.38	0.17	[-.46, .08]	0.20
Belonging vs. Control	-0.15	-1.07	0.29	[-.43, .13]	0.15
DE vs. Belonging	-0.04	-0.25	0.80	[-.32, .25]	0.04
	F	DF1	DF2	p	η_p^2
Interaction: Generation Status x Condition	0.78	2	639	0.46	0.002

Table S23

Effects of condition on resource-seeking at Time 1 by generation status

	beta	t-value	p-value	95% CI	Cohen's D
Simple effects: first-generation students					
DE vs. Control	0.10	0.89	0.38	[-.12, .31]	0.1
Belonging vs. Control	0.03	0.21	0.83	[-.21, .26]	0.03
DE vs. Belonging	0.07	0.58	0.56	[-.17, .31]	0.06
Simple effects: continuing-generation students					
DE vs. Control	0.04	0.39	0.69	[-.18, .27]	0.04
Belonging vs. Control	-0.18	-1.53	0.13	[-.42, .05]	0.21
DE vs. Belonging	0.23	1.87	0.06	[-.01, .47]	0.25
	F	DF1	DF2	p	η_p^2
Interaction: Generation Status x Condition	0.78	2	854	0.46	0.002

Table S24

Effects of condition on resource-seeking at Time 2 by generation status

	beta	t-value	p-value	95% CI	Cohen's D
Simple effects: first-generation students					
DE vs. Control	-0.08	-0.62	0.53	[-.33, .17]	0.08
Belonging vs. Control	-0.22	-1.62	0.11	[-.50, .05]	0.23
DE vs. Belonging	0.14	1.04	0.30	[-.13, .42]	0.14
Simple effects: continuing-generation students					
DE vs. Control	0.04	0.27	0.79	[-.23, .30]	0.04
Belonging vs. Control	-0.13	-0.95	0.34	[-.41, .14]	0.14
DE vs. Belonging	0.17	1.17	0.24	[-.12, .46]	0.19
	F	DF1	DF2	p	η_p^2
Interaction: Generation Status x Condition	0.21	2	639	0.81	0.00

Table S25

Effects of condition on comfort with social group difference at Time 1 by generation status

	beta	t-value	p-value	95% CI	Cohen's D
Simple effects: first-generation students					
DE vs. Control	0.16	2.35	0.02	[.03, .29]	0.23
Belonging vs. Control	0.07	0.90	0.37	[-.08, .21]	0.1
DE vs. Belonging	0.09	1.20	0.23	[-.06, .24]	0.15
Simple effects: continuing-generation students					
DE vs. Control	-0.02	-0.22	0.83	[-.15, .12]	0.03
Belonging vs. Control	-0.06	-0.80	0.42	[-.21, .09]	0.1
DE vs. Belonging	0.04	0.59	0.55	[-.10, .19]	0.07
	F	DF1	DF2	p	η_p^2
Interaction: Generation Status x Condition	1.70	2	852	0.18	0.004

Table S26

Effects of condition on comfort with social group difference at Time 2 by generation status

	beta	t-value	p-value	95%CI	Cohen's D
Simple effects: first-generation students					
DE vs. Control	0.08	1.00	0.32	[-.07, .23]	0.13
Belonging vs. Control	0.10	1.13	0.26	[-.07, .26]	0.17
DE vs. Belonging	-0.02	-0.21	0.83	[-.19, .15]	0.03
Simple effects: continuing-generation students					
DE vs. Control	-0.05	-0.61	0.54	[-.21, .11]	0.08
Belonging vs. Control	-0.12	-1.37	0.17	[-.29, .05]	0.19
DE vs. Belonging	0.07	0.76	0.45	[-.11, .24]	0.11
	F	DF1	DF2	p	η_p^2
Interaction: Generation Status x Condition	1.62	2	638	0.20	0.01

Effects of condition (difference-education vs. social-belonging vs. control) on study outcomes by generation status (first-generation vs. continuing-generation) without covariates

Table S27

Effects of condition on cumulative GPA by generation status

	beta	t-value	p-value	95%CI
Simple effects: first-generation students				
DE vs. Control	0.09	0.89	0.37	[-.11, .29]
Belonging vs. Control	0.11	0.98	0.33	[-.11, .33]
DE vs. Belonging	-0.02	-0.16	0.87	[-.24, -.21]
Simple effects: continuing-generation students				
DE vs. Control	0.04	0.42	0.67	[-.16, .25]
Belonging vs. Control	0.03	0.29	0.77	[-.19, .25]
DE vs. Belonging	0.01	0.10	0.92	[-.21, -.23]
	F	DF1	DF2	p
Interaction: Generation Status x Condition	0.12	2	868	0.89

Table S28

Effects of condition on Fall GPA by generation status

	beta	t-value	p-value	95%CI
Simple effects: first-generation students				
DE vs. Control	0.21	2.04	0.04	[.01, .41]
Belonging vs. Control	0.33	2.93	0.003	[.11, .55]
DE vs. Belonging	-0.12	-1.06	0.29	[-.34, .10]
Simple effects: continuing-generation students				
DE vs. Control	0.08	0.74	0.46	[-.13, .29]
Belonging vs. Control	0.03	0.27	0.79	[-.19, .25]
DE vs. Belonging	0.05	0.42	0.67	[-.17, .27]
	F	*DF1*	*DF2*	*p*
Interaction: Generation Status x Condition	3.02	2	871	0.17

Table S29

Effects of condition on Spring GPA by generation status

	beta	t-value	p-value	95%CI
Simple effects: first-generation students				
DE vs. Control	0.00	0.00	1.00	[-.21, .21]
Belonging vs. Control	-0.09	-0.81	0.83	[-.32, .13]
DE vs. Belonging	0.09	0.79	0.43	[-.14, .32]
Simple effects: continuing-generation students				
DE vs. Control	0.00	0.01	0.99	[-.21, .22,]
Belonging vs. Control	0.02	0.21	0.84	[-.20, .25]
DE vs. Belonging	-0.02	-0.19	0.85	[-.25, .21]
	F	*DF1*	*DF2*	*p*
Interaction: Generation Status x Condition	0.31	2	839	0.73

Table S30

Effects of condition on learning empowerment at Time 1 by generation status

	beta	t-value	p-value	95%CI
Simple effects: first-generation students				
DE vs. Control	0.06	0.63	0.53	[-.14, .26]
Belonging vs. Control	0.08	0.75	0.45	[-.14, .30]
DE vs. Belonging	-0.02	-0.18	0.86	[-.25, .20]
Simple effects: continuing-generation students				
DE vs. Control	-0.07	-0.66	0.51	[-.28, .14]
Belonging vs. Control	-0.06	-0.46	0.65	[-.27, .17]
DE vs. Belonging	-0.02	-0.16	0.87	[-.24, .20]
	F	*DF1*	*DF2*	*p*
Interaction: Generation Status x Condition	0.54	2	871	0.58

Table S31

Effects of condition on learning empowerment at Time 2 by generation status

	beta	t-value	p-value	95% CI
Simple effects: first-generation students				
DE vs. Control	0.04	0.33	0.74	[-.20, .29]
Belonging vs. Control	0.05	0.34	0.73	[-.22, .31]
DE vs. Belonging	-0.01	-0.04	0.97	[-.28, .26]
Simple effects: continuing-generation students				
DE vs. Control	-0.18	-1.33	0.18	[-.44, .08]
Belonging vs. Control	-0.16	-1.13	0.26	[-.43, .12]
DE vs. Belonging	-0.02	-0.14	0.89	[-.30, .26]
	F	*DF1*	*DF2*	*p*
Interaction: Generation Status x Condition	0.88	2	655	0.42

Table S32

Effects of condition on resource-seeking at Time 1 by generation status

	beta	t-value	p-value	95% CI
Simple effects: first-generation students				
DE vs. Control	0.09	0.80	0.42	[-.13, .30]
Belonging vs. Control	0.03	0.27	0.79	[-.20, .27]
DE vs. Belonging	0.05	0.45	0.65	[-.19, .30]
Simple effects: continuing-generation students				
DE vs. Control	0.03	0.31	0.76	[-.19, .26]
Belonging vs. Control	-0.18	-1.51	0.13	[-.42, .05]
DE vs. Belonging	0.22	1.79	0.07	[-.02, .45]
	F	*DF1*	*DF2*	*p*
Interaction: Generation Status x Condition	0.83	2	872	0.44

Table S33

Effects of condition on resource-seeking at Time 2 by generation status

	beta	t-value	p-value	95% CI
Simple effects: first-generation students				
DE vs. Control	-0.06	-0.48	0.63	[-.30, .19]
Belonging vs. Control	-0.21	-1.58	0.12	[-.48, .05]
DE vs. Belonging	0.16	1.13	0.26	[-.11, .43]
Simple effects: continuing-generation students				
DE vs. Control	0.02	0.14	0.89	[-.25, 28]
Belonging vs. Control	-0.17	-1.20	0.23	[-.44, .11]
DE vs. Belonging	0.19	1.30	0.20	[-.10, .47]
	F	*DF1*	*DF2*	*p*
Interaction: Generation Status x Condition	0.09	2	655	0.91

Table S34

Effects of condition on comfort with social group difference at Time 1 by generation status

	beta	t-value	p-value	95%CI
Simple effects: first-generation students				
DE vs. Control	0.11	1.68	0.09	[-.02, .25]
Belonging vs. Control	0.06	0.85	0.40	[-.08, .21]
DE vs. Belonging	0.05	0.66	0.51	[-.10, .20]
Simple effects: continuing-generation students				
DE vs. Control	-0.01	-0.07	0.94	[-.14, .13]
Belonging vs. Control	-0.05	-0.71	0.48	[-.20, .09]
DE vs. Belonging	0.05	0.64	0.53	[-.10, 20]
	F	DF1	DF2	p
Interaction: Generation Status x Condition	0.94	2	870	0.39

Table S35

Effects of condition on comfort with social group difference at Time 2 by generation status

	beta	t-value	p-value	95%CI
Simple effects: first-generation students				
DE vs. Control	0.08	1.00	0.32	[-.12, .18]
Belonging vs. Control	0.10	1.13	0.26	[-.10, .23]
DE vs. Belonging	-0.03	-0.38	0.71	[-.20, .13]
Simple effects: continuing-generation students				
DE vs. Control	-0.05	-0.61	0.54	[-.22, .11]
Belonging vs. Control	-0.12	-1.37	0.17	[-.27, .07]
DE vs. Belonging	0.04	0.51	0.61	[-.13, .22]
	F	DF1	DF2	p
Interaction: Generation Status x Condition	0.95	2	654	0.39

Section 10

To determine whether the null effects of the intervention conditions for first-generation students in the Spring reflected "fade out" effects (e.g., the intervention was less effective over time) vs. "catch up" effects (e.g., students in control condition improved over time), we tested the three way interaction between generation-status, condition, and term (Fall vs. Spring). Results are mixed, providing some support for both interpretations. Supporting a "fade out" effect, first-generation students in the social belonging intervention showed a significant *decrease* in GPA between the Fall and Spring terms, $p = .03$. However, supporting a "catch up" effect, first-generation students in the control condition also showed a significant *increase* in GPA between the Fall and Spring terms, $p = .002$ while first-generation students in the difference-education intervention did not show any change in GPA, $p = .96$. Figure S1 illustrates changes in GPA across the two terms for first-generation students. Table S36 displays the full statistics for these changes for both first-generation and continuing-generation students.
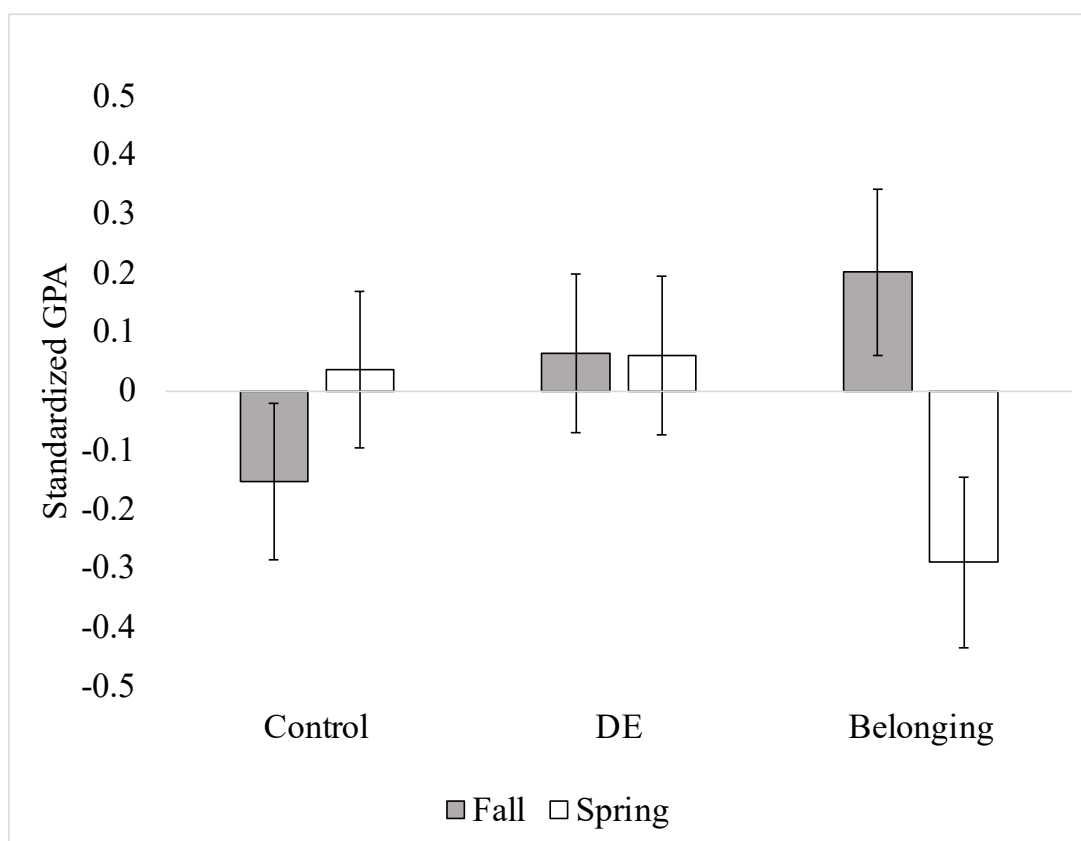
Figure S1. Difference in GPA scores across Spring and Fall Terms for First-Generation College Students

Table S36				
Difference between Fall and Spring term grades by condition and generation status				
	beta	*t-value*	*p-value*	*95% CI*
First-generation students				
Control	0.19	3.05	0.00	[.07, .31]
DE	0.00	-0.05	0.96	[-.13, .13]
Belonging	-0.17	-2.23	0.03	[-.33, -.02]
Continuing-generation students				
Control	0.00	0.07	0.94	[-.12, .13]
DE	-0.05	-0.75	0.45	[-.18, .08]
Belonging	0.04	0.50	0.62	[-.11, .19]