Empirical Research Paper

Educators' Beliefs About Students' Socioeconomic Backgrounds as a Pathway for Supporting Motivation

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Abstract

Students' understandings of their socioeconomic status (SES) backgrounds have important implications for their motivation, achievement, and the emergence of SES-based educational disparities. Educators' beliefs about students' backgrounds likely play a meaningful role in shaping these understandings and, thus, may represent an important opportunity to support students from lower-SES backgrounds. We first experimentally demonstrate that educators can be encouraged to adopt *background-specific strengths* beliefs—which view students' lower-SES backgrounds as potential sources of unique and beneficial strengths ($N_{Study\ 1} = 125$). Subsequently, we find that exposure to educators who communicate background-specific strengths beliefs positively influences the motivation and academic persistence of students, particularly those from lower-SES backgrounds ($N_{Study\ 2} = 256$; $N_{Study\ 3} = 276$). Furthermore, lower-SES students' own beliefs about their backgrounds mediated these effects. Altogether, our work contributes to social-psychological theory and practice regarding how key societal contexts can promote equity through identity-based processes.

Keywords

educators, background-specific strengths, socioeconomic status, identity, motivation

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Students' lower-socioeconomic status (SES) backgrounds and associated lived experiences often equip them with unique skills and perspectives that can help them succeed in school and life generally (e.g., Hatt, 2007; Hernandez et al., 2021). These strengths—including resilience, empathy, and increased effectiveness on group tasks—can benefit students from lower-SES backgrounds as they progress throughout their educational careers (Dittmann et al., 2020; Kraus et al., 2009; Masten, 2001). In spite of these assets, however, the gap between the academic achievement of students from lower- and higher-SES backgrounds is vast and growing in the United States, reinforcing insidious patterns of economic and health inequity (Adler & Stewart, 2010; Baum et al., 2013; Reardon, 2013). The paradox between the beneficial strengths that students from lower-SES backgrounds frequently bring to their educations and the adverse outcomes they often face may be in part due to the ways in which academic contexts overlook or dismiss the value of students' lower-SES backgrounds (Stephens, Fryberg, et al., 2012).

The current research tests the potential role that educators may play in addressing this paradox through their expression of *background-specific strengths beliefs* that instead recognize the value of the unique skills and perspectives that students often gain as a factor of their lower-SES backgrounds. In this way, we aim to advance social-psychological theory regarding how important societal forces shape students' beliefs and behaviors and identify new avenues for supporting students from lower-SES backgrounds.

Contextual Influence and Educators

The psychological processes through which social contexts influence individuals' beliefs and behaviors are of central concern to social psychology (Reis & Holmes, 2012). Academic contexts, specifically—comprised of educators and broader classroom and institutional environments—often endorse norms and expectations that frame students' lower-SES backgrounds as barriers to their success, thereby negatively affecting how these students make sense of their backgrounds and their subsequent achievement and

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well-being (see Destin, 2020). For instance, students from lower-SES backgrounds face negative achievement and health-related outcomes as a result of the mismatch between the interdependent norms that they often bring to their educations (e.g., valuing community) and the independent norms that are frequently emphasized by their educational institutions (e.g., valuing individual achievement; Stephens, Fryberg, et al., 2012; Stephens, Townsend, et al., 2012). In addition, the stigma that is commonly attached to students' lower-SES backgrounds in academic contexts has been shown to have a variety of negative implications for their performance in school (e.g., Croizet & Claire, 1998). However, it is precisely because of the powerful influence that academic contexts have on students' outcomes that they also represent opportunities for targeted efforts aimed at promoting educational equity (e.g., Browman & Destin, 2016; Okonofua et al., 2016).

Educators, including K–12 teachers and university professors, are especially well positioned to support students from lower-SES backgrounds given their potent influence on students' graduation rates, attendance, course grades, and lifetime earnings (e.g., Chetty et al., 2014; Jackson, 2018). The beliefs that educators hold about their students may be one important pathway through which educators elicit such potent influences on student outcomes. For example, both educators' reported beliefs about whether intelligence is fixed or malleable and students' perceptions of those beliefs are associated with student motivation and the emergence of academic achievement gaps (Canning et al., 2019; Reich & Arkin, 2006). Furthermore, correlational research in K–12 settings suggests that students from lower-SES backgrounds may be particularly sensitive to their educators' beliefs and expectations (e.g., Sorhagen, 2013). We extend the research on the power of social contexts and educators through examining how educators' background-specific strengths beliefs influence the motivation and persistence of students from lower-SES backgrounds.

Background-Specific Strengths

Individuals from lower-SES backgrounds are often viewed as less capable than those from higher-SES backgrounds (e.g., Autin et al., 2019; Durante & Fiske, 2017; Harvey et al., 2016). In particular, within academic contexts, the experiences and identities that are associated with students' lower-SES backgrounds (e.g., coming from a lower-income household, being a first-generation college student) are often viewed as barriers to student success (e.g., Gorski, 2011). As a result, educators may adopt deficit-based beliefs about students from lower-SES backgrounds. These beliefs posit that students from lower-SES backgrounds are less capable because the skills, resources, and perspectives that are common among these students are not in line with those that are privileged by prevailing educational norms that favor students from higher-SES backgrounds (see Stephens et al., 2014). This perspective is limited and thus has inspired a growing body of research that critically examines the beneficial strengths of students from marginalized backgrounds that often go unrecognized or underappreciated in academic contexts (e.g., Yosso, 2005). For example, *background-specific strengths* (BSS) refer to the unique knowledge, perspectives, skills, and fortitude that students acquire as a result of their marginalized backgrounds and associated experiences (Hernandez et al., 2021). Students from lower-SES backgrounds can leverage their BSS—which may include skills like being able to navigate complex situations or persevere through challenges (Yosso, 2005) as valuable resources across a variety of settings, including their schools.

In this way, BSS serves as a framework that views the experiences and identities of students from lower-SES backgrounds as an asset to their education and society broadly. BSS builds from analytic theories that directly challenge the notion that students from historically marginalized backgrounds lack the necessary knowledge, strengths, and abilities to thrive in school (e.g., Yosso, 2005). Rather than locating the onus for reducing educational disparities within lower-SES students themselves (e.g., by encouraging them to accommodate to the norms that have been historically valued in schools), the BSS framework calls on academic contexts to reconceptualize their approaches to students from lower-SES backgrounds through valuing the unique strengths that they often bring to their educations. In line with related theories on person-context interactions (e.g., Schmader & Sedikides, 2018), the BSS framework emphasizes the role of context in influencing individuals' psychological and behavioral processes through guiding the activation and interpretation of their identities.

Given the outsized impacts of educators on student outcomes and the beneficial effects that leading students from lower-SES backgrounds to reflect on their BSS have for their motivation and well-being (Hernandez et al., 2021), we suggest that educators may trigger a variety of positive psychological processes for these students through acknowledging the unique strengths that they may gain as a direct factor of their backgrounds. We draw on identity-based motivation theory (IBM; Oyserman & Destin, 2010) to make specific predictions regarding how educators' BSS beliefs may influence a variety of outcomes among students from lower-SES backgrounds.

Identity-Based Motivation Theory

According to IBM (Oyserman & Destin, 2010), educators' beliefs about students' backgrounds may influence students' own interpretations of their lower-SES identities, as well as a variety of related motivational processes. Broadly, IBM posits that an individual's motivation is determined by the extent to which their active identities feel congruent with their current social contexts. Thus, when a student perceives their educator to view their background as a source of beneficial

strengths (i.e., to hold BSS beliefs), the student may come to see their lower-SES identity as congruent with their success in school and their future goals. Subsequently, IBM predicts that the student will identify more strongly with their education (IBM's principle of *dynamic construction*), feel greater efficacy and drive to participate in positive academic behaviors like studying (IBM's principle of *action readiness*), and will be more likely to interpret difficulty encountered on academic tasks as an indication that the tasks are important, and not impossible, for them to complete successfully (IBM's principle of *interpretation of difficulty*).

The effects of educators' beliefs about students' backgrounds may be pronounced among students from lower-SES backgrounds, who are less likely to encounter cues from their academic contexts that regularly reinforce the value of their identities compared with their peers from higher-SES backgrounds (see Plaut & Markus, 2005). Thus, when students from lower-SES backgrounds encounter an educator who communicates, or is perceived to hold, BSS beliefs, this may have especially positive consequences for their sense of congruence between their backgrounds and education, as well as their identity-based motivational outcomes. Given that these outcomes are both inherently important and have meaningful implications for students' academic achievement (Oyserman et al., 2015), educators' strengths-based beliefs may play an important role in bolstering the success of students from lower-SES backgrounds. In testing the uniquely powerful role that educators may play as catalysts of specific social psychological pathways to student motivation, we provide an experimental evaluation of IBM's proposed model of the processes through which contexts influence individuals' outcomes.

Research Overview

The current research addresses two major questions in investigating the relationship between educators' BSS beliefs and student motivation. Study 1 tested whether educators' positive beliefs about students' lower-SES backgrounds are malleable and can be promoted through a learning session about the unique strengths that students often gain from their lower-SES backgrounds. Studies 2 and 3 then examined whether educators' cues indicating that they hold strengths-based beliefs influence identity-based motivational processes among students, particularly those from lower-SES backgrounds. Specifically, Study 2 served as an initial correlational investigation of the relationships between students' perceptions of their educators' BSS beliefs and their (a) positive beliefs about their backgrounds (i.e., their own *BSS*), (b) feelings that their identities are positively linked with their academic success (i.e., *dynamic construction*), (c) sense of empowerment over their academic success (i.e., *action readiness*), and (d) productive responses to academic challenge (i.e., *interpretation of difficulty*). Study 3 then directly tested the causal effects of educators who communicate BSS beliefs on these outcomes, as well as students' persistence on an actual academic task.

We report all manipulations, measures, and exclusions within each study in our Supplemental Material. Analyses were completed in R v4.0.3 using the "lme4" (Bates et al., 2015), "mgcv" (Wood, 2011), and "mediation" (Tingley et al., 2014) packages. The analytic code, materials, and data for all studies are available at https://osf.io/mvr95/.

Study 1

To examine the malleability of educators' beliefs about students' lower-SES backgrounds, Study 1 experimentally tested the effects of a strengths-based learning session on educators' beliefs about lower-SES students. In our pre-registered hypotheses (https://osf.io/jm5ug/), we predicted that the learning session would increase educators' BSS beliefs, while decreasing their beliefs that students' lower-SES backgrounds serve as barriers to their success (i.e., deficit-based beliefs).

Method

Participants. We recruited 125 educators[1] who had voluntarily enrolled in a strengths-based learning session focused on the value of the identities and unique strengths of students from lower-SES backgrounds. The session was administered with four separate groups of educators. Within each group, educators were randomly assigned to complete a survey including the measures listed below either before the experimental session was administered (i.e., the control condition; $n = 73$) or after it was administered (i.e., the treatment condition; $n = 52$).

In both conditions, the educators received the survey over email and consented to participate in the study prior to responding to the scales below. Educators in the control condition completed their survey up to 2 weeks prior to the strengths-based session. Educators in the treatment condition were able to complete their survey up to 1 month after the session. To help ensure that our findings would generalize to a variety of educators, we recruited participants from both higher education and K–12 settings. The educators were not directly compensated for their participation. See Table 1 for demographic information.

Strengths-based session materials. Educators completed the strengths-based session online as part of a live interactive discussion with an expert researcher on the experiences of students from lower-SES backgrounds in education. The session lasted 1–2 hr and consisted of a presentation on the empirical evidence undergirding the BSS framework and a guided discussion of different ways for educators to incorporate this framework into their academic contexts.

Table 1. Study 1 Demographics.

Generation status	
First generation (neither parent received a 4-year college degree)	18.4%
Continuing generation (at least one parent received a 4-year college degree)	73.6%
Gender	
Woman	72.0%
Man	20.8%
Another gender identity	0.8%
Race	
White	76.0%
Southeast Asian	1.6%
Latinx	0.8%
Black/African-American	4.0%
Indian subcontinent	0.8%
Multi-racial	10.5%
Strengths-based session	
Group 1 (university educators, January 2021)	56.8%
Group 2 (university educators, March 2021)	16.8%
Group 3 (university educators, May 2021)	5.6%
Group 4 (K–12 educators, March 2021)	20.8%
Average years teaching at current institution	9.79 (SD = 6.96)

Note. Rates of missingness in the demographic information ranged from 6.4% to 8.0%.

Measures. Due to differences in the length of the surveys that we were able to administer with the groups of educators, as well as differences in the academic settings from which educators were sampled, some of the measures below differed slightly between the sessions (see Supplemental Material). We computed separate reliability estimates for the measures for each of the groups to account for these differences.

Educators were prompted to specifically think about students from lower-SES backgrounds as they completed the measures below on a 1 (*strongly disagree*) to 6 (*strongly agree*) scale. Both measures were adapted from prior measures of students' BSS beliefs (Hernandez et al., 2021). We conducted psychometric analyses with both scales within a separate sample of educators prior to conducting confirmatory factor analyses within the current sample (see Supplemental Material).

Educators' BSS beliefs. Educators rated the extent to which they thought that students' lower-SES backgrounds can serve as assets to their academic success using a seven-item scale or a condensed three-item scale (αs = 0.70–0.90, M = 4.62, SD = 0.77). Example item: "Students from [marginalized/lower-SES] backgrounds are often uniquely equipped to succeed in school."

Educators' deficit-based beliefs. Educators rated the extent to which they thought that students' lower-SES backgrounds were barriers to their success using a three- or four-item scale (αs = 0.73–0.94, M = 3.59, SD = 1.08). Example item: "Students' [marginalized/lower-SES] backgrounds are often barriers to their success."

Results

Per our pre-registration, mean composites for the scales above were computed within each of the four groups of educators prior to combining these datasets and conducting multilevel analyses predicting the two outcomes from educators' conditional assignment (0 = control, 1 = treatment). We included a random intercept indicating which group educators were a part of to account for variation in the dependent variables that may be attributed to the academic settings from which the educators were sampled.

We found support for each of our preregistered hypotheses.[2] The strengths-based session successfully promoted educators' BSS beliefs (β = .39, $p < .001$, 95% CI [0.23, 0.56]) and decreased their deficit-based beliefs about students from lower-SES backgrounds (β = −.39, $p < .001$, 95% CI [−0.56, −0.22]; see Figure 1). Our findings are particularly promising given that 40% of the educators in the treatment condition completed the measures of their beliefs 1 week or more after the learning session. This gives us greater confidence that our effects are not simply the result of demand characteristics, though this possibility cannot be ruled out, and that sustained engagement with strengths-based ways of thinking about students' lower-SES backgrounds may have longer term implications for the approaches that educators take toward these students.

Study 1 Discussion

In preregistered analyses, we demonstrated that an experimental learning session focused on the strengths that students often gain as a direct factor of their lower-SES backgrounds promoted educators' positive beliefs about students' lower-SES backgrounds. Thus, educators' understandings regarding the value of such backgrounds appear malleable to the messages that they receive about these students. Studies 2 and 3 then sought to determine whether cues from educators demonstrating that they hold positive beliefs about students' lower-SES backgrounds influence students' motivation and academic persistence.

Study 2

In Study 2, we predicted that students' perceptions of their educators' BSS beliefs would be positively correlated with students' BSS beliefs about their own backgrounds, dynamic construction, action readiness, and interpretation of difficulty (the primary outcomes derived from IBM). We also examined whether these relationships were stronger among students from lower-SES backgrounds compared with students from higher-SES backgrounds. Following recommendations from Ledgerwood (2019), we sought to maximize statistical power to detect the hypothesized relationships and provide more stable and precise estimates of our effects through pooling data from surveys conducted with high school and university students.

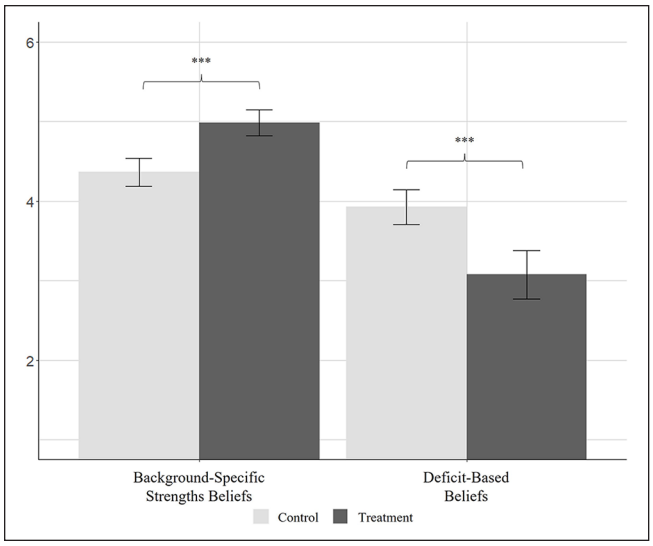

Figure 1. Study 1 complete results.
Note. Error bars indicate 95% confidence intervals.
*** $p < .001$.

Method

Participants. We recruited 77 high school students and 179 university students to complete an online survey after consenting to participate in our research ($N_{Total} = 256$).[3] We initially recruited 122 high school students; however, per our pre-registration for this sample (https://aspredicted.org/n79np.pdf), we removed 45 students for failing an embedded attention check. These 45 students displayed significantly less academic empowerment than students who were retained in the analyses, but otherwise did not differ on any demographic, motivational, or achievement-related variables (see Supplemental Material). We did not preregister hypotheses among the university sample. See Table 2 for demographic information for each sample.

Measures. Unless otherwise noted, the measures were completed on a 1 (*strongly disagree*) to 6 (*strongly agree*) scale. Due to differences in the characteristics of the high school and university samples, as well as constraints on the types and number of items that we could administer, there were slight differences in the measures used with each sample (see Supplemental Material).

Perception of educators' BSS beliefs. Students rated the extent to which they perceived their educators to believe that their backgrounds could serve as assets to their success. High school students completed a six-item scale ($\alpha = .84$, $M = 3.38$, $SD = 1.01$; example item: "My teachers think that my background will help me succeed in school.") while university students completed a seven-item scale ($\alpha = .81$, $M = 4.20$, $SD = 0.70$; example item: "The professors at [university] think that my background will help me succeed in school.") This scale was adapted from an existing measure of students' BSS beliefs (Hernandez et al., 2021). Psychometric analyses with this measure were conducted with a separate sample of students prior to conducting confirmatory factor analyses with the current samples (see Supplemental Material).

Student's own BSS beliefs. Students rated the extent to which they themselves saw their background as an asset to their success. High school students completed an eight-item scale ($\alpha = .82$, $M = 4.12$, $SD = 0.94$) while university students completed a condensed five-item scale ($\alpha = .82$, $M = 5.02$, $SD = 0.64$; adapted from Hernandez et al., 2021). An example item is "I have gained certain strengths because of my lived experiences and background."

Dynamic construction. To capture IBM's principle of dynamic construction (i.e., students' identification with education), we measured the extent to which students felt as though their identities were positively linked to their academic pursuits. High school students completed a three-item measure of this construct focused on their identification with academic success ($\alpha = .84$, $M = 5.03$, $SD = 1.03$; adapted from Osborne, 1997; example item: "Being successful in school is important to me.") while university students completed a related 7-item measure focused on their identification with school broadly ($\alpha = .79$, $M = 4.32$, $SD = 0.74$; adapted from Walton & Cohen, 2007; example item: "I feel part of the [university] community.")

Action readiness. To capture IBM's principle of action readiness (i.e., the extent to which students feel prepared to engage in productive academic behaviors), we measured students' academic empowerment (i.e., their sense of preparation, control, and self-efficacy over their academic success). High school students completed an eight-item scale ($\alpha = .88$, $M = 4.45$, $SD = 1.28$; adapted from Townsend et al., 2019; example item: "I am well prepared to be academically successful as a student at my high school.") while university students completed a four-item scale ($\alpha = .74$, $M = 5.05$, $SD = 0.69$; adapted from Midgley et al., 2000; example item: "I can do even the hardest work in my courses if I try.")

Interpretation of difficulty. To capture IBM's principle of interpretation of difficulty (i.e., the extent to which students view encountered difficulty as an indication that an academic task is important, not impossible, to complete), we administered an eight-item scale with both the high school students ($\alpha = .81$, $M = 3.93$, $SD = 0.91$) and university students ($\alpha = .79$, $M = 4.31$, $SD = 0.74$; Oyserman et al., 2015).[4] The scale included four items measuring students' interpretations of encountered difficulty on an academic task as an indication that the task is important (e.g., "If a school

Table 2. Study 2 Demographics.

Demographic variable	High school students	University students
Generation status		
First generation (neither parent received a 4-year college degree)	N/A	10.1%
Continuing generation (at least one parent received a 4-year college degree)	N/A	79.9%
Free/reduced lunch status		
Eligible for free/reduced lunch	55.8%	N/A
Not eligible for free/reduced lunch	42.9%	N/A
Gender		
Woman	N/A	54.2%
Man	N/A	36.9%
Another gender identity	N/A	1.1%
Sex		
Female	48.1%	N/A
Male	50.6%	N/A
Race		
White	9.1%	47.5%
Asian/Asian American	1.3%	25.7%
Latinx/Hispanic	57.1%	6.7%
Black/African-American/African	15.6%	2.8%
Native American/American Indian	1.3%	0%
Middle Eastern/Arab	0%	1.7%
Multi-racial	9.1%	8.4%
Average age	15.14 (SD = 0.76)	19.28 (SD = 1.10)

Note. Demographic data for the high school students were acquired directly from their school at the end of the academic year in which they completed our survey. Demographic data for the university students were reported by the students themselves within their survey. Rates of missingness for each demographic variable ranged from 1.3% to 10.1%.

task is difficult, it means that it's important for me.") and four reverse-scored items measuring their interpretations of encountered difficulty as an indication that the task is impossible (e.g., "Finding a school task really difficult tells me that I can't complete it successfully."). Higher scores on this composite indicated more productive interpretations of academic difficulty.

Socioeconomic status. Among the high school students, we used eligibility for Free/reduced lunch as an indicator of their objective SES. Students who were eligible for Free/reduced lunch (i.e., were from a lower-SES background) were coded as 0 while students who were not eligible (i.e., were from a higher-SES background) were coded as 1. Given that Free/reduced lunch eligibility is determined based on students' annual household income level in relation to federal poverty line guidelines, it is commonly used as an indicator of SES (for a discussion about this indicator, see Domina et al., 2018).

Among the university students, we computed a composite indicator of students' objective SES by taking the standardized mean of students' self-reported annual household income (1 = *<US$25,000* to 9 = *> US$300,000*) and the highest level of education attained by their parents/guardians (1 = *did not finish high school* to 5 = *graduate or professional degree, MA, Ph.D., JD, MD;* see Kraus et al., 2009).[5]

Analyses

We predicted that students' perceptions of their educators' beliefs about their background would be positively associated with their identity-based motivational outcomes. Prior to testing this prediction, we standardized and pooled the samples of high school and university students (see Supplemental Material; for information regarding this integrated approach, see Curran & Hussong, 2009). Although our preregistration with the high school sample indicated that we would run correlational analyses, we instead conducted multilevel regressions predicting students' identity-based motivational outcomes from their perceptions of their educators' BSS beliefs, SES, and the interaction between these two variables to test whether SES moderated the relationship between perceptions of educators' BSS beliefs and students' outcomes. These models allowed us to examine several possible ways that the data could look, including that perceptions of educators' BSS beliefs are linked to positive outcomes to a similar degree among all students (as would be indicated by significant relationships between the outcomes of interest and students' perceptions of educators' beliefs in the absence of meaningful interaction terms), or that perceptions of educators' BSS beliefs are related to positive outcomes for all students but are particularly closely associated

Table 3. Study 2 Results From Interaction Models Regressing the Four Outcomes of Interest on Students' Perceptions of Educators' BSS Beliefs, SES, and Their Interaction.

Regression term	Students' own BSS beliefs	Dynamic construction	Action readiness	Interpretation of difficulty
Perception of educators' BSS beliefs	.30*** [.18, .43]	.46*** [.35, .57]	.27*** [.15, .39]	.24*** [.12, .37]
SES	.07 [−.06, .19]	.12* [.01, .23]	−.00 [−.13, .12]	.00 [−.12, .13]
Perception of educators' BSS beliefs × SES Interaction	−.06 [−.19, .08]	−.11† [−.24, .01]	−.17* [−.30, −.03]	−.17* [−.31, −.03]
Simple effect of perception of educators' BSS beliefs among lower-SES students (−1 *SD* on the SES variable)	.36*** [.18, .54]	.57*** [.41, .74]	.44*** [.26, .61]	.41*** [.23, .60]
Simple effect of perception of educators' BSS beliefs among higher-SES students (+1 *SD* on the SES variable)	.25* [.06, .44]	.35*** [.18, .52]	.10 [−.08, .29]	.07 [−.12, .27]

Note. Effect sizes for each coefficient are presented above 95% confidence intervals in brackets. BSS = background-specific strengths; SES = socioeconomic status.
†$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

with the outcomes of students from lower-SES backgrounds (as would be indicated by significant relationships between the outcomes of interest and students' perceptions of their educators' beliefs and meaningful interaction terms demonstrating that these relationships were particularly strong among students from lower-SES backgrounds). The models included a random intercept to account for whether students were from the high school or university sample.

Results

As shown in Table 3, we find consistent support for our hypotheses.

Students' own BSS beliefs. Students' perceptions of educators' strengths-based beliefs about their backgrounds were associated with students having more positive beliefs about their own backgrounds. The interaction term was not significant, suggesting that perceiving educators to hold BSS beliefs about one's background was linked to students from both lower- and higher-SES backgrounds viewing their identities and lived experiences as assets to their success.

Dynamic construction. There was a significant main effect of perceptions of educators' strengths-based beliefs about background and a marginally significant interaction on students' dynamic construction. The latter finding suggests that the positive relationship between educators' BSS beliefs and students' construction of identities that were linked to their education appeared stronger among students from lower-SES backgrounds ($\beta = .57$, $p < .001$, 95% CI [0.41, 0.74]) than students from higher-SES backgrounds ($\beta = .35$, $p < .001$, 95% CI [0.18, 0.52]; see Figure 2A).

Action readiness. There was a significant main effect of perceptions of educators' BSS beliefs and interaction with SES on students' action readiness. In other words, the positive association between perceptions of educators' BSS beliefs and students' feelings of academic empowerment was stronger among students from lower-SES backgrounds ($\beta = .44$, $p < .001$, 95% CI [0.26, 0.61]) than students from higher-SES backgrounds ($\beta = .10$, $p = .279$, 95% CI [−0.08, 0.29]; see Figure 2B).

Interpretation of difficulty. There was also a significant main effect of perceptions of educators' BSS beliefs and a significant interaction with SES on students' productive interpretations of difficulty. Once again, the positive relationship between perceptions of educators' BSS beliefs and interpretation of difficulty was stronger among students from lower-SES backgrounds ($\beta = .41$, $p < .001$, 95% CI [0.23, 0.60]) than students from higher-SES backgrounds ($\beta = .07$, $p = .472$, 95% CI [−0.12, 0.27]; see Figure 2C).

Study 2 Discussion

Students' perceptions of their educators' beliefs about the value of their backgrounds were associated with students' identity-based motivational outcomes. In line with our suggestion that students from lower-SES backgrounds may be especially sensitive to their educators' beliefs, we found that several of these relationships were stronger among students from lower-SES backgrounds. Thus, cues from educators indicating that they hold strengths-based beliefs likely matter more for the motivation of students whose identities are regularly stigmatized in education, compared with students who are likely to encounter messages that consistently reinforce the value of their identities (e.g., students from higher-SES backgrounds). Building on the findings of Study 1, Study 2 suggests that as students from lower-SES backgrounds construe the meaning of their identities in academic contexts, signals from educators suggesting that they hold positive

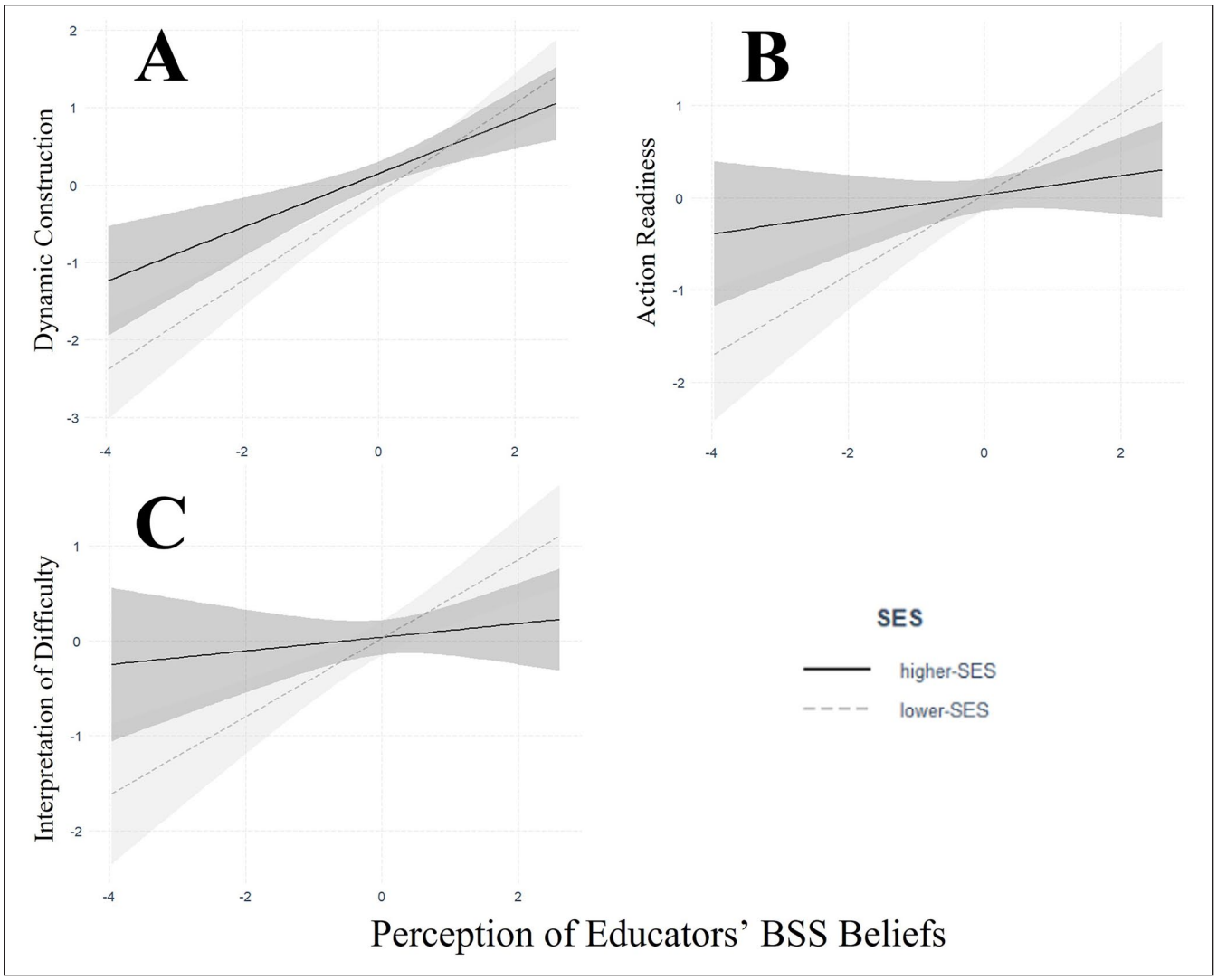

Figure 2. Study 2 interaction plots.
Note. The solid and dashed lines indicate the slopes for students from higher- and lower-SES backgrounds, respectively. The slopes have 95% confidence intervals plotted around them. BSS = background-specific strengths; SES = socioeconomic status.

beliefs about students' backgrounds may have an especially positive influence on lower-SES students' psychological outcomes. It is also worth noting that, within the high school sample, students' perceptions of their educators' BSS beliefs were correlated with their overall grades[6] (see Supplemental Material). This provides an initial indication that educators' strengths-based cues have concrete implications for students' academic performance.

However, it is important to recognize that the surveys administered with the high school and university samples differed slightly in the measures that they used to operationalize four of our constructs of interest. Although the fact that we found similar patterns of results using different operationalizations may be viewed as a strength of this study (Ledgerwood, 2019), additional correlational work with consistent measures may help further establish the link between students' perceptions of their educators' BSS beliefs and their motivation. The different operationalizations of the constructs of interest in the two samples also make it difficult to interpret the random intercept included in the models given that the variance it accounted for may be attributed to differences between the samples (e.g., developmental differences) and/or variation in the measures administered with each sample. To help clarify and extend the promising findings of the previous studies, Study 3 sought to establish causal relationships between educators' expression of their strengths-based beliefs about students' lower-SES backgrounds and students' outcomes.

Study 3

Study 3 was a preregistered experiment testing the prediction that brief exposure to an educator who communicated BSS beliefs would positively affect students' motivation

Table 4. Study 3 Demographics.

Generation status	
First generation (neither parent received a 4-year college degree)	27.1%
Continuing generation (at least one parent received a 4-year college degree)	72.5%
Gender	
Woman	54.7%
Man	44.6%
Another Gender Identity	0.4%
Race	
White	30.8%
Asian/Asian-American	28.6%
Latinx	12.0%
Black/African-American	12.3%
Middle Eastern/Arab	0.4%
Multi-racial	15.6%
Average age	18.82 (SD = 0.88)

Note. Just under 0.4% of the sample did not provide data for the demographic variables.

and persistence, particularly among students from lower-SES backgrounds (https://aspredicted.org/66un9.pdf). We also examined whether students' own strengths-based beliefs about their backgrounds mediated these effects.

Method

Participants. After piloting our materials with 50 students from lower-SES backgrounds (see Supplemental Material for results), we recruited 276 students[7] from a research university to complete Study 3 as part of an introductory psychology class research participation requirement. See Table 4 for demographic information.

Materials. Upon consenting to participate in the online study, students were told that they were going to provide feedback on an excerpt from a lecture written by a professor at their university. Students were told that the professor was planning to use this lecture to introduce their teaching philosophy in one of their courses. Students were then randomly assigned to one-of-two conditions.

In the *BSS condition*, students read an excerpt from a professor's lecture in which the professor explicitly stated that they believed that all students gain important skills and perspectives as a factor of their backgrounds. The professor went on to specifically recognize students' lower-SES backgrounds as potential sources of unique and valuable strengths and provided examples of specific strengths that these students may have gained as a factor of their backgrounds, including creativity and resilience. In the *control condition*, students read an excerpt from a professor's lecture in which the professor conveyed thoughtful support for their students' success without explicitly mentioning students' backgrounds. Both lecture excerpts were 256 words in length (see Supplemental Material for complete condition text). To foster students' engagement with the message of their assigned condition, they were asked to write one to two sentences summarizing the main point the professor was conveying.

To help isolate the cause of any effects of the BSS condition to differences between the content of this condition and that of the control, we first determined that there were no significant differences between the two conditions in students' abilities to understand the teaching philosophy of the professor whose lecture they had read ($\beta = -.06$, $p = .364$, 95% CI [−0.18, 0.07]), or students' perceived competence of the professor as a teacher ($\beta = -.07$, $p = .257$, 95% CI [−0.19, 0.05]).

Measures. Students responded to several measures of their perceptions of the professor's course, motivation, and persistence. Unless otherwise noted, measures were completed on a 1 (*strongly disagree*) to 6 (*strongly agree*) scale. The psychometric analyses for the measures of students' dynamic construction and action readiness may be found in the Supplemental Material.

Perception of educator's BSS beliefs. We included a manipulation check item to test whether students in the BSS condition perceived the professor as holding greater strengths-based beliefs than students in the control condition: "This professor thinks that students have gained unique strengths as a factor of their backgrounds and lived experiences" ($M = 4.90$, $SD = 0.95$).

Students' own BSS beliefs. Students completed an adapted five-item version of the scale used in Study 2 to measure their beliefs that their backgrounds are assets to their success ($\alpha = .78$, $M = 4.73$, $SD = 0.79$).

Dynamic construction in the professor's course. To capture students' dynamic construction in context, we measured students' sense that their authentic identities would be valued in the professor's course using a three-item measure ($\alpha = .78$, $M = 4.81$, $SD = 0.75$). An example item is "I could be my authentic self in this professor's course."

Action readiness in the professor's course. To capture students' action readiness in context, we measured students' sense of academic empowerment in the course using a five-item measure ($\alpha = .82$, $M = 4.78$, $SD = 0.59$). An example item is "I would be able to find my own way to be successful in this class."

Interpretation of difficulty. Students' productive interpretation of academic difficulty was measured using the same eight-item scale as in Study 2 ($\alpha = .80$, $M = 4.15$, $SD = 0.75$).

Performance and persistence on a challenging academic task. To investigate how educators' BSS beliefs may affect students' academic behaviors, students were also asked to

complete a task involving 16 difficult questions from different sections of the Graduate Record Examinations (GRE). Students had 7 minutes to complete as many of the GRE questions as they wished. They could leave the task at any time such that they did not need to spend all 7 minutes on the task (adapted from Destin et al., 2018). We used the total number of questions that students answered correctly as our measure of their performance on the task ($M = 5.92$, $SD = 2.78$). To measure students' persistence on the task, a built-in survey timer recorded the number of seconds that they spent on the task ($M = 352.63$, $SD = 115.39$, skew $= -1.60$).

Socioeconomic status. We used the same socioeconomic composite as in the Study 2 university sample (i.e., a standardized mean of students' annual household income and the highest level of education attained by their parents/guardians). The median household income was relatively high (between US$120,001 and US$150,001) but, among students who were considered as coming from a lower-SES background in our analyses (i.e., who were one standard deviation or more below the mean of the socioeconomic composite), the average income was between US$25,001 and US$70,000 ($M = 2.64$, $SD = 1.75$), and 68.9% of these students identified as first-generation college students (also see Johnson et al., 2011 for a discussion on the effects on coming from a lower-SES background relative to one's peers).

Analyses

Primary hypotheses. To ensure that our manipulation was successful, we first used a Welch's *t*-test to examine whether students in the BSS condition were more likely to perceive the professor to hold BSS beliefs than students in the control condition.

We then used linear regressions to predict students' identity-based motivational outcomes from the condition (0 = control condition, 1 = BSS condition) and SES variables, as well as their interaction. These analyses allowed us to examine who might benefit from an educator who communicates strengths-based beliefs about students from lower-SES backgrounds. On one hand, it is possible that these beliefs benefit all students while eliciting particularly positive effects among students from lower-SES backgrounds (as would be indicated by a significant main effect of the BSS condition on the outcomes of interest and interaction effects suggesting that these effects were stronger among students from lower-SES backgrounds). On the other hand, given that educators' BSS beliefs directly invoke the identities of students from lower-SES backgrounds, it is also possible that these beliefs may exclusively benefit students from lower-SES backgrounds (as would be indicated by interaction effects demonstrating that the BSS condition only positively influenced the outcomes of interest among students from lower-SES backgrounds or reduced differences between students from lower- and higher-SES backgrounds on these outcomes).

Following the results of Study 2, we hypothesized that exposure to an educator who expresses BSS beliefs would have especially positive effects on the identity-based motivational outcomes of students from lower-SES backgrounds.

Secondary hypotheses. We used the same linear regression model specifications as those described above to test the hypothesis that the BSS condition would lead students to answer more questions correctly on the challenging academic task. Due to the measure of time spent on the GRE task being highly skewed, a nonparametric generalized additive model predicting the number of seconds that students spent on the challenging academic task from their conditional assignment, SES, and the interaction of these variables was used to test our other secondary hypothesis (i.e., that the BSS condition would lead students to persist longer on the task than the control condition).

Finally, following our theoretical model, exploratory moderated mediation analyses were used to test whether the effects of condition on the outcomes of interest among students from lower-SES backgrounds were driven by students' own strengths-based beliefs about their backgrounds.

Results

Primary hypotheses

Perception of educator's BSS beliefs. We first confirmed that our manipulation was successful. Students in the BSS condition were more likely to believe that the professor saw students' backgrounds as potential sources of beneficial strengths ($M = 5.42$, $SD = 0.66$) than students in the control condition ($M = 4.37$, $SD = 0.90$), $d = 1.33$, $p < .001$, 95% CI [1.07, 1.59]. This indicates that students' perceptions of their educators' beliefs about background are subject to the approaches that educators take in their classrooms.

Identity-based motivation outcomes. Complete results of our primary analyses may be found in Table 5.

Students' own BSS beliefs. There was no main effect of condition on students' own BSS beliefs, but the hypothesized condition by SES interaction approached statistical significance. Students from lower-SES backgrounds were more likely to see their backgrounds as assets to their success in the BSS condition than the control condition ($\beta = .17$, $p = .049$, 95% CI [0.001, 0.34]; see Figure 3A). This finding indicates that educators who communicate strengths-based beliefs about students from lower-SES backgrounds can meaningfully influence whether these students see their backgrounds as congruent with their success.

Dynamic construction in the professor's course. We found a significant main effect of condition and a condition by SES interaction on perceived dynamic construction in the

Table 5. Study 3 Results From Interaction Models Regressing the Five Outcomes of Interest on Condition, SES, and Their Interaction.

Regression term	Students' own BSS beliefs	Dynamic construction in professor's course	Action readiness in professor's course	Interpretation of difficulty
Main effect of condition	0.06	0.20***	0.04	−0.02
	[−0.06, 0.18]	[0.09, 0.32]	[−0.08, 0.16]	[−0.14, 0.10]
Main effect of SES	−0.00	−0.05	0.05	0.09
	[−0.13, 0.12]	[−0.17, 0.07]	[−0.07, 0.17]	[−0.03, 0.21]
Condition x SES Interaction	−0.11†	−0.17**	−0.14*	−0.12*
	[−0.23, 0.01]	[−0.29, −0.05]	[−0.25, −0.02]	[−0.24, −0.001]
Simple effect of condition among lower-SES students (−1 *SD*)	0.17*	0.37***	0.18*	0.10
	[0.001, 0.34]	[0.21, 0.54]	[0.01, 0.35]	[−0.07, 0.27]
Simple effect of condition among higher-SES students (+1 *SD*)	−0.05	0.03	−0.09	−0.14
	[−0.22, 0.12]	[−0.13, 0.20]	[−0.26, 0.08]	[−0.31, 0.03]
Simple effect of SES among students in control condition	0.10	0.12	0.19*	0.21*
	[−0.07, 0.27]	[−0.05, 0.28]	[0.02, 0.35]	[0.04, 0.38]
Simple effect of SES among students in BSS condition	−0.12	−0.22**	−0.09	−0.03
	[−0.28, 0.05]	[−0.39, −0.05]	[−0.25, 0.08]	[−0.20, 0.14]

Note. Effect sizes for each coefficient are presented above 95% confidence intervals in brackets. BSS = background-specific strengths; SES = socioeconomic status.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

professor's course. Students from lower-SES backgrounds were more likely to think that their identity would be supported in the course of the professor in the BSS condition than the control condition (β = .37, $p < .001$, 95% CI [0.21, 0.54]). Within the BSS condition, students from lower-SES backgrounds thought that their identities would feel more supported than students from higher-SES backgrounds (β = −.22, $p = .010$, 95% CI [−0.39, −0.05]). There was no conditional difference on this outcome among students from higher-SES backgrounds (β = .03, $p = .687$, 95% CI [−0.13, 0.20]; see Figure 3B). Put simply, the professor's message that acknowledged the value of students' lower-SES backgrounds successfully promoted positive patterns of dynamic construction among students from lower-SES backgrounds without negatively influencing those of students from higher-SES backgrounds.

Action readiness in the professor's course. Although the main effect was not significant, results show the predicted condition by SES interaction on perceived action readiness. In the control condition, students from lower-SES backgrounds felt less empowered to succeed in the professor's course than students from higher-SES backgrounds (β = .19, $p = .030$, 95% CI [0.02, 0.35]). This disparity was eliminated in the BSS condition (β = −.09, $p = .320$, 95% CI [−0.25, 0.08]) due to an increase in the academic empowerment of students from lower-SES backgrounds in the BSS condition relative to the control (β = .18, $p = .037$, 95% CI [0.01, 0.35]; see Figure 3C). In other words, the professor's strengths-based message reduced a gap in the action readiness of students from lower- and higher-SES backgrounds through promoting the perceived academic empowerment of students from lower-SES backgrounds.

Interpretation of difficulty. Finally, there was no main effect of condition on students' productive interpretations of academic difficulty, but we once again found the hypothesized condition by SES interaction. Students from lower-SES backgrounds were less likely to have productive interpretations of difficulty than students from higher-SES backgrounds in the control condition (β = .21, $p = .014$, 95% CI [0.04, 0.38]), but this disparity was again eliminated in the BSS condition (β = −.03, $p = .731$, 95% CI [−0.20, 0.14]; see Figure 3D). Put differently, students from lower-SES backgrounds were less likely to interpret difficulty in productive ways than students from higher-SES backgrounds when exposed to a professor who conveyed general support for students (i.e., the control condition), but this gap was erased when students were exposed to a professor who acknowledged the unique strengths that students can gain from their lower-SES backgrounds.

Secondary hypotheses. There was no main effect of condition (β = .02, $p = .714$, 95% CI [−0.10, 0.14]) or condition by SES interaction on students' performance on the challenging academic task (β = .01, $p = .879$, 95% CI [−0.11, 0.13]). However, in support of our other prediction, students in the BSS condition ($M_{seconds} = 363.64$, $SD = 109.71$) persisted 28.32 s longer on the task than students in the control condition ($M_{seconds} = 341.30$, $SD = 120.31$; $p = .048$, 95% CI [0.34, 56.30]; see Figure 4). This suggests that exposure to an educator who endorses strengths-based beliefs about students' backgrounds has meaningful implications for students' tangible academic behaviors. The condition by SES interaction on persistence was not significant ($B = −1.24$, $p = .931$, 95% CI [−29.27, 26.78]), suggesting that the BSS condition increased the academic persistence of all students.

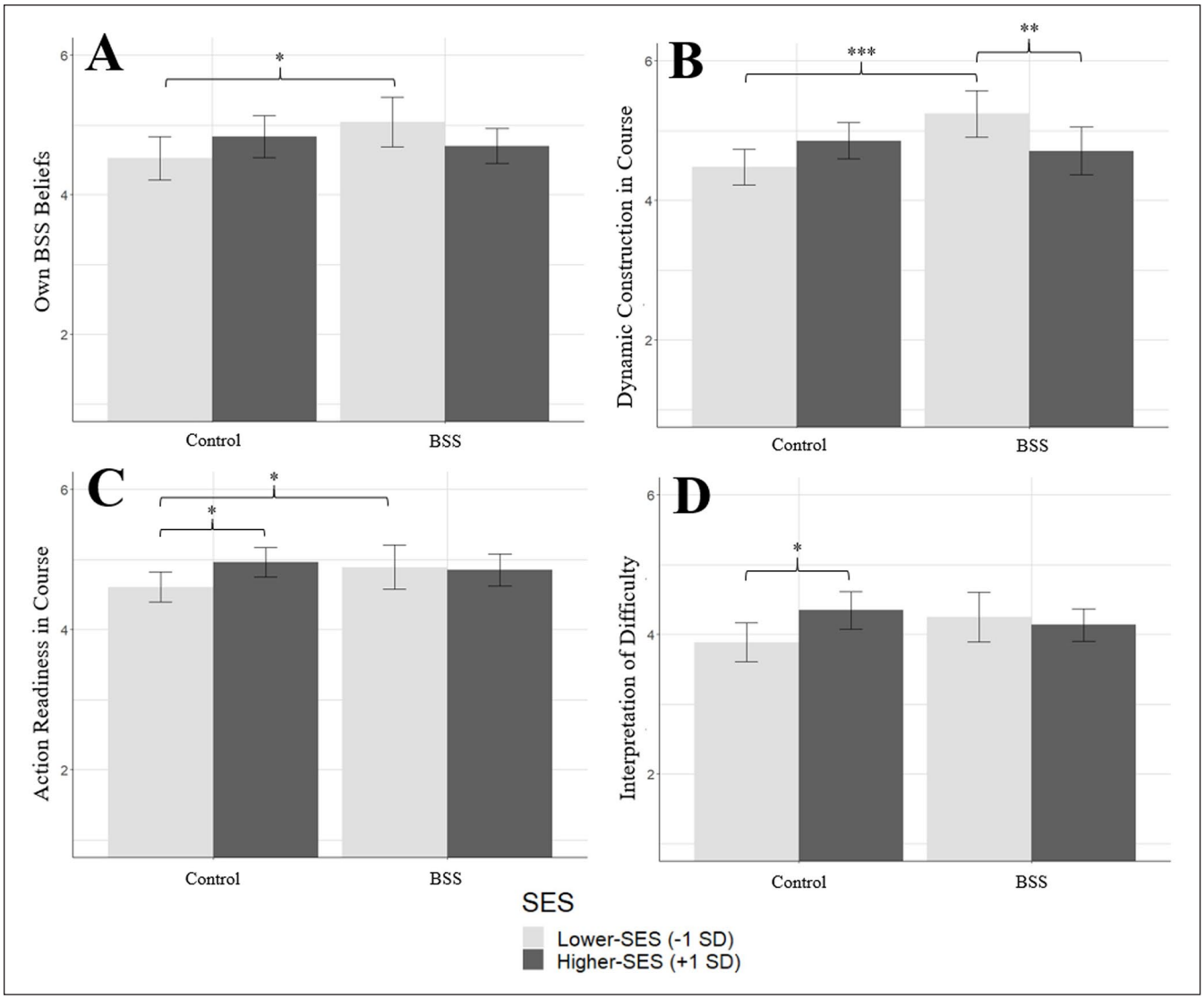

Figure 3. Study 3 interaction effect plots.
Note. Error bars indicated 95% confidence intervals. All significant slopes are marked. BSS = background-specific strengths; SES = socioeconomic status. *$p < .05$. **$p < .01$. ***$p < .001$.

Mediating role of students' own BSS beliefs. Building on these findings, we investigated the psychological mechanism through which educators who communicate their strengths-based beliefs affect the motivation of students from lower-SES backgrounds. One possibility following from IBM is that communicating these beliefs promotes students' own BSS beliefs, an indicator of their sense of congruence between their backgrounds and success, which in turn initiate a variety of positive motivational processes. We tested this exploratory prediction using moderated mediation models with 5,000 bootstrapped samples. Students' SES was entered as a moderator of both the *a* (condition to students' BSS beliefs) and *c* (condition to outcome) pathways.

Dynamic construction in the professor's course. Among students from lower-SES backgrounds, we found a significant indirect effect suggesting that these students' own strengths-based beliefs about their backgrounds mediated the effect of the BSS condition on their dynamic construction (i.e., perceived support for their identity) in the professor's course (indirect effect $\beta = .04$, $p = .046$, 95% CI [0.001, 0.08]). The indirect effect was not significant among students from higher-SES backgrounds (indirect effect $\beta = -.01$, $p = .574$, 95% CI [−0.05, 0.02]; see Figure 5A). The indirect effects for students from lower- and higher-SES backgrounds were different from one another at a level of marginal statistical significance ($p = .078$, 95% CI [−0.004, 0.11]). These findings indicate that cues from educators that demonstrate their strengths-based beliefs lead students from lower-SES backgrounds to construct positive identities in context through promoting their own beliefs that they have gained unique and beneficial strengths as a factor of their backgrounds.

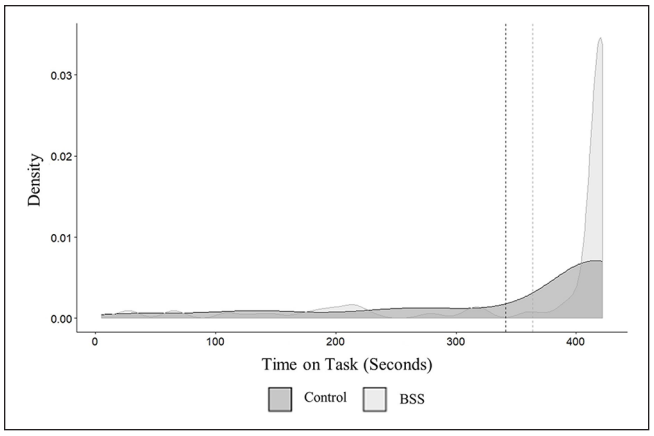

Figure 4. Study 3 persistence on challenging academic task plot.
Note. Figure 4 is a density plot of the amount of time students spent on the challenging GRE task by condition. The vertical black line indicates the mean time on task for students in the control condition, while the vertical gray line indicates the mean for students in the BSS condition. This plot shows that a higher proportion of students in the BSS condition spent the complete time on the task (i.e., 420 s) relative to students in the control condition. BSS = background-specific strengths; GRE = Graduate Record Examinations.

Action readiness in the professor's course. Students' BSS beliefs also mediated the effect of condition on their action readiness (i.e., perceived empowerment) in the professor's course among students from lower-SES backgrounds (indirect effect $\beta = .04$, $p = .047$, 95% CI [0.001, 0.10]) but not among students from higher-SES backgrounds (indirect effect $\beta = -.01$, $p = .580$, 95% CI [−0.06, 0.03; see Figure 5B). The difference between these two indirect effects was again marginally statistically significant ($p = .068$, 95% CI [−0.003, 0.13]). Among students from lower-SES backgrounds, exposure to an educator who espoused strengths-based beliefs positively influenced their own BSS beliefs which in turn made them feel more empowered to succeed in the educator's course.

Interpretation of difficulty. Finally, the effect of condition on interpretation of difficulty was also mediated by students' own BSS beliefs among students from lower-SES backgrounds (indirect effect $\beta = .05$, $p = .050$, 95% CI [−0.00003, 0.11]) but not students from higher-SES backgrounds (indirect effect $\beta = -.01$, $p = .589$, 95% CI [−0.07, 0.04]; see Figure 5C). The difference between the indirect effects among students from lower- and higher-SES backgrounds was marginally statistically significant ($p = .080$, 95% CI [−0.008, 0.14]). Similar to our other findings, these results suggest that educators' strengths-based cues about students' lower-SES backgrounds positively affect these students' own beliefs about their backgrounds and, in turn, their productive interpretations of academic difficulty.

Study 3 Discussion

Study 3 provides causal evidence that educators can support lower-SES students' positive identification with education, sense of academic empowerment, and productive interpretations of difficulty through explicitly valuing the unique strengths that students often gain from their lower-SES backgrounds. Thus, explicitly invoking the identities of students from lower-SES backgrounds while attaching these identities to beneficial strengths appears to benefit the motivation of students from lower-SES backgrounds without undermining the outcomes of students from socioeconomic backgrounds that have been historically privileged in academic contexts.

Importantly, Study 3 also demonstrated that educators' messages about background affect students' actual academic behaviors. Students who were exposed to an educator who endorsed BSS beliefs persisted longer on a challenging academic task than their peers in the control condition. This suggests the potential of educators' strengths-based beliefs to influence students' tangible actions in school. We did not see a significant condition by SES interaction on students' persistence on this task, however. Although there are numerous explanations for this, we suggest that educators who express positive beliefs about students' lower-SES backgrounds may not only lead these students to persist longer in the face of academic challenge but also instigate unmeasured motivational processes among students from higher-SES backgrounds (e.g., a drive to demonstrate their own academic abilities). In addition, we did not find the hypothesized effect of condition on the number of questions that students answered correctly on the challenging academic task. Such a finding may have been to be expected given that there was no incentive for high performance and a majority of our sample consisted of freshman and sophomore students who may have less exposure to the types of questions and skills that are necessary to complete GRE questions (as evidenced by the fact that students correctly answered fewer than 6 of the 16 questions on average). Nonetheless, the potential practical significance of our findings for supporting lower-SES students' academic performance is underscored by prior work connecting our primary outcomes of interest to students' distal academic outcomes and behaviors (e.g., Hernandez et al., 2021; Oyserman et al., 2015).

Finally, the mediation models indicated that the positive effects of the educator's strengths-based cues on the psychological outcomes of students from lower-SES backgrounds were in part due to increases in these students' own strengths-based beliefs about their backgrounds—though it is important to note again that the tests of moderated mediation approached statistical significance. This provides important experimental evidence in support of IBM's predictions, as well as valuable insight into the pathways through which students' identities influence their motivation.

General Discussion

Over the last decade, researchers have outlined the ways in which academic contexts often place students from lower-SES backgrounds at a disadvantage through making their

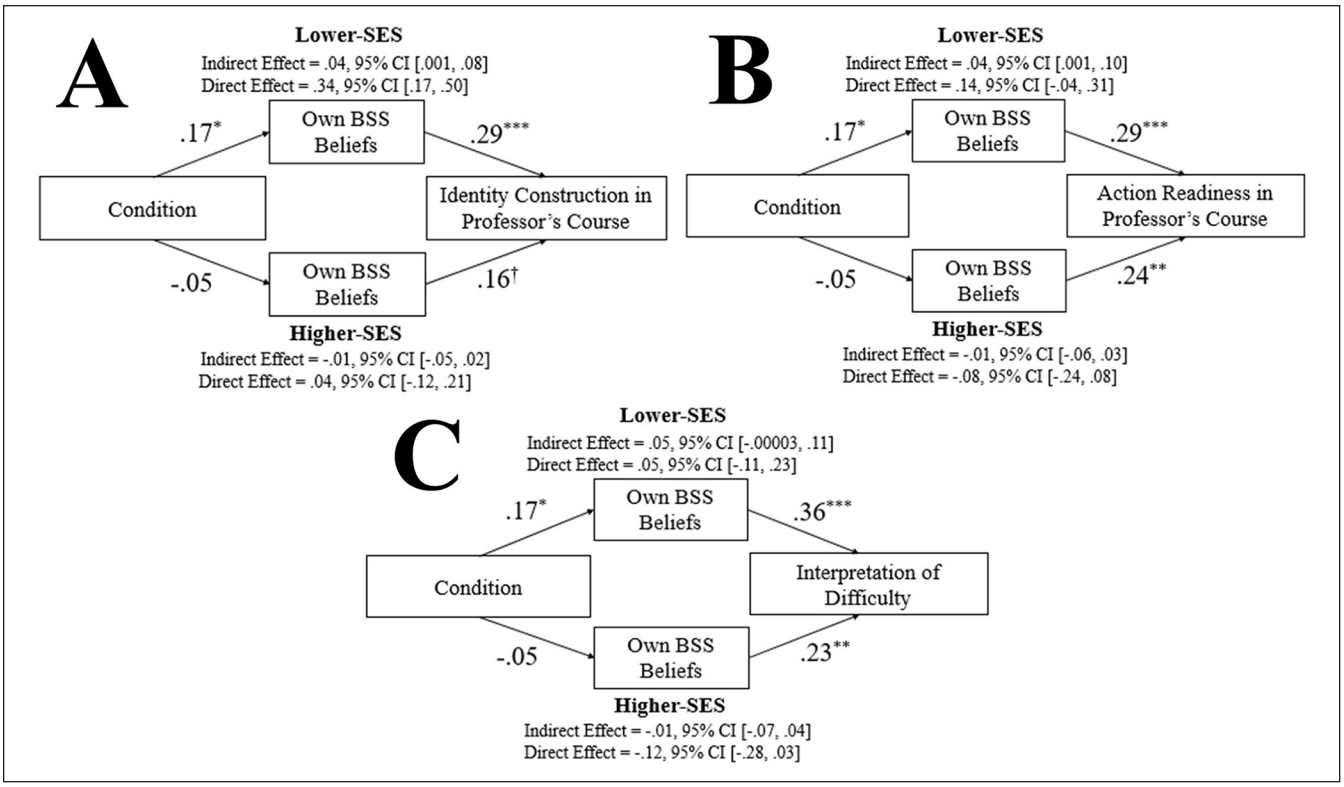

Figure 5. Study 3 mediation findings.
Note. Indirect effects through students' own BSS beliefs broken down by whether students were from lower-SES (i.e., one standard deviation below the mean of the SES composite) or higher-SES (i.e., one standard deviation above the mean of the SES composite) backgrounds. Condition was dummy coded (0 = control condition, 1= BSS condition). BSS = background-specific strengths; SES = socioeconomic status.

identities feel incompatible with success (e.g., Stephens, Fryberg, et al., 2012). However, our work demonstrates that students' conceptualizations of their lower-SES identities in relation to education are not deterministically negative but are instead malleable to key social forces within their environments. Thus, the powerful influence of the academic context serves as a valuable tool for reducing pervasive educational inequities.

Across three studies conducted with students and educators, we demonstrated that educators' positive beliefs about students' otherwise stigmatized backgrounds are malleable, and that educators' cues indicating that they hold such beliefs have beneficial effects on a variety of key student outcomes. Specifically, we first found that a brief strengths-based experimental manipulation promoted educators' BSS beliefs about students from lower-SES backgrounds while also decreasing their deficit-based beliefs about these students. We went on to demonstrate the promise of encouraging educators to adopt positive beliefs about students from lower-SES backgrounds through first finding evidence that students' perceptions of educators' strengths-based beliefs are meaningfully linked to students' motivational processes, particularly among students from lower-SES backgrounds. Subsequently, we found that an educator who directly communicated that they held such beliefs positively affected the identity-based motivational outcomes of students from lower-SES backgrounds. These latter effects were in part explained by the fact that exposure to an educator who communicated strengths-based beliefs increased lower-SES students' positive interpretations of their backgrounds, further highlighting the important function of individuals' understandings of their identities in context.

Importantly, we demonstrate such beneficial effects for the target group (i.e., students from lower-SES backgrounds) while also showing that educators' strength-based beliefs did not have detrimental consequences for students from higher-SES backgrounds. In concert with the fact that exposure to an educator who conveyed such beliefs increased students' persistence on an actual academic task, our work outlines the important implications that educators' strengths-based approaches have for supporting students and promoting educational equity.

Theoretical Implications

The current research expands on IBM's conceptual model by providing an experimental demonstration of how academic contexts guide student motivation. In doing so, our research contributes to social-psychological theory underscoring the ways in which contexts influence people's tangible outcomes

through shaping their understanding of their identities. Specifically, we suggest that contextual cues regarding the meaning of people's backgrounds in relation to their environments have important implications for their motivation and persistence. Relatedly, we demonstrate that people from historically marginalized backgrounds may be especially attuned to, and affected by, these cues as important sources of information regarding their status within a given context. Thus, future theoretical work may look to understand how identity-specific contextual messages may contribute to the emergence or reduction of group-based inequities.

Furthermore, although previous work drawing from IBM has focused on the ways in which students' future identities (i.e., their understandings of the positive and negative identities that they might come to hold) influence their motivation (e.g., The Pathways Intervention, Oyserman et al., 2002), our studies demonstrate that parallel positive motivational processes may be triggered through promoting students' strengths-based beliefs about their backgrounds. These beliefs encompass how students understand their past experiences in relation to their current and future successes (i.e., narrative identity; McAdams, 2011), as well as their understandings of their social groups (i.e., social identity; Hogg, 2003). In this way, we not only expand theorizing on how identity is linked to people's motivation and associated behaviors but also identify novel avenues for understanding how different identities may be leveraged to support the success of students from historically marginalized backgrounds.

Our work may also help expand other theoretical models regarding the ways in which important societal contexts influence the people within them. For example, consistent with the State Authenticity as Fit to Environment model (Schmader & Sedikides, 2018), we found that contextual cues invoking individuals' backgrounds affected their feelings of authenticity in context and related patterns of motivation. Thus, the current studies contribute to researchers' broader understandings of the mechanisms and concrete messages through which contexts affect individuals' motivational processes.

Practical Implications

Our research provides strong evidence in support of the growing movement to incorporate strengths-based approaches in academic contexts (see Hernandez et al., 2021). Although such approaches are not new within education, evidence regarding their effects on specific psychological processes is sparse (Banks & Banks, 2019). Through demonstrating that educators' strengths-based beliefs about students from lower-SES backgrounds are malleable and that cues indicating that educators hold such beliefs positively affect students' motivational and behavioral outcomes, we provide valuable insight into how researchers, educational practitioners, and policymakers can implement effective strengths-based practices in schools to support student success. Relatedly, our research underscores the potential of educators, who have a crucial causal influence on students that has been underexplored in experimental research (Okonofua et al., 2016), to meaningfully advance educational equity.

Informed by our findings, researchers and educational practitioners may look to implement and evaluate programs that encourage educators to understand how students' otherwise marginalized backgrounds may serve as assets to their success, and to subsequently demonstrate these beliefs to their students throughout their classrooms. For example, educators may be supported to design flexible classroom activities that allow students to demonstrate a variety of unique strengths while learning course material. Programs can help educators adapt their typical classroom practices and materials (e.g., syllabi, lesson plans) to recognize the unique skills and perspectives that students from lower-SES backgrounds often bring to their educations. Given the findings from our work, such programs have the potential to initiate a variety of positive psychological and behavioral processes that have been linked to students' academic success and well-being (e.g., Browman et al., 2017; Thomaes et al., 2017).

Limitations and Future Directions

Although the current findings are promising, further work is necessary to expand our understandings of the psychological processes outlined in our studies. For instance, while our research has the rare distinction of capturing these processes using an experimental study conducted with actual educators, along with subsequent studies at the student level, future work may examine the direct associations between educators' reported beliefs and their own students' outcomes. Such studies were beyond the scope of the current article but may shed further light on our phenomena of interest. Relatedly, to better understand the psychological mechanisms engaged by educators' beliefs about students' backgrounds, researchers may investigate how such beliefs affect other core psychological constructs, including students' mindsets (e.g., Yeager et al., 2019), as well as other educator-level variables, such as their expectations for students (Sorhagen, 2013).

Researchers may also examine how educators' strengths-based beliefs manifest themselves in their interactions with students to provide further insights into pedagogical strategies for supporting students. Following recent demonstrations of a widespread gap between educators' reported beliefs about students and their implementation of classroom behaviors that uphold such beliefs (e.g., a "false" growth mindset, Buttrick et al., under review), it is possible that many educators who indicate that they hold strengths-based beliefs may struggle to demonstrate these beliefs to students and thus might benefit from empirical insights into concrete strategies for enacting strengths-based beliefs. This possibility could

also help explain why educators in the control condition of Study 1 reported relatively high levels of strengths-based beliefs. Although many educators may purport to view students' lower-SES backgrounds positively, they might fall short of demonstrating this view to their students, especially if they hold simultaneously high levels of deficit-based beliefs (as was the case among educators in the control condition of Study 1).

In addition, it is important to note that students were not explicitly asked to consider their SES backgrounds when responding to questions about their BSS beliefs or those of their educators in Studies 2 and 3. This was done to ensure that students could interpret the questions in personally meaningful ways but creates the possibility that students were considering other important identities when responding to these questions. Thus, our effects may extend beyond students from lower-SES backgrounds to students from other groups that are stigmatized within education (e.g., students of color). Furthermore, although our work was conducted with diverse samples of high school and university students, additional research investigating the generalizability of our findings to younger samples is necessary to demonstrate the potential developmental boundaries of our findings.

Finally, future work may investigate the longitudinal effects of students' and educators' background-specific strengths beliefs. Following prior work on social-psychological interventions (Yeager & Walton, 2011), it is possible that strengths-based cues from academic contexts may trigger recursive psychological processes that support students' ongoing success and productive patterns of motivation and persistence. For instance, an educator providing an opportunity for students to consider how the skills that they have learned from their backgrounds can help them succeed may lead students from lower-SES backgrounds to recognize the value of their background-specific strengths in school. This understanding may be reinforced as students apply their unique strengths in other contexts, thereby allowing students' identities to serve as an enduring source of motivation. Through measuring the identity-based processes that may give rise to such long-term effects using carefully controlled designs, the current studies serve as a foundation for uncovering the potential benefits of shifting academic contexts' understandings of students from lower-SES backgrounds.

Conclusion

Our research illuminates a novel pathway for supporting the motivation and persistence of students from lower-SES backgrounds through leading educators to explicitly recognize the unique and valuable strengths that these students often acquire as a direct factor of their backgrounds. In doing so, we not only contribute to social-psychological theorizing on person-context interactions but also identify important opportunities for researchers and educators to build academic contexts that authentically support students' identities and promote educational equity.

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Supplemental Material

Supplemental material is available online with this article.

Notes

1. Post hoc power analyses revealed that we had 97.0% power to detect a study average effect size of $\beta = .33$.
2. Analyses demonstrating support for our third preregistered hypothesis, that the strengths-based session would increase educators' felt agency to support students from lower-SES backgrounds, may be found in the Supplemental Material.
3. After pooling the samples of high school and university students, post hoc power analysis estimates indicated that we had 87.4% power to detect a study average effect size of $\beta = .22$. Analyses conducted with the high school and university samples separately may be found in the Supplemental Material. Although the patterns of results from these analyses were relatively consistent with those of the pooled analyses, it is important to note that the high school and university samples only had 39.7% and 77.6% power, respectively, to detect the hypothesized relationships.
4. We took the mean score of students' perceptions of academic difficulty as *important* and perceptions of academic difficulty as *impossible* to provide a test of the relationships between educators' BSS beliefs and students' overall interpretations of difficulty. Analyses investigating the associations between educators' BSS beliefs and the individual difficulty as important and difficulty as impossible scales are presented in the Supplemental Material for each study.
5. There are important differences between the indicators of SES used in the high school and university samples due to constraints on the types of items that we were able to administer with the high school students. However, students who were considered as coming from a lower-SES background in both samples experienced similar financial circumstances. Within the high school sample, students were eligible for Free/reduced lunch if their

annual household income was US$49,025 or less (based on U.S. federal guidelines for a family of four; United States Department of Agriculture Food and Nutrition Service [USDA Food and Nutrition Service], 2020). Within the university sample, students who were a standard deviation or more below the mean of the SES composite reported comparable levels of financial resources as this group's mean annual household income was between US$25,001 and US$70,000 ($M = 2.59$, $SD = 1.53$).

6. We were not able to receive grades data within the university sample.
7. Post hoc power analyses indicated that we had 83.8% to detect a study average effect size of $\beta = .20$. In our pre-registration, we estimated that we would need to recruit at least 256 participants to have 80% power to detect an effect size of $\beta = .17$.

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