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Examining active help-seeking behavior in first-generation college students

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Abstract

First-generation (FG) college students (students for whom neither parent earned a bachelor's degree) are typically less likely to interact with their instructors and communicate with them by email or in person, compared to continuing-generation (CG) students. Qualitative research suggests FG students are less likely to seek help when they need it, and when they do seek help they are more likely to engage in passive help-seeking (e.g., waiting quietly for assistance) as opposed to active help-seeking (e.g., promptly requesting assistance through multiple methods), compared to CG students. The current laboratory study provided students with an opportunity to seek academic and non-academic help and measured whether students engaged in active help-seeking behavior. We also tested whether having a shared identity with a help-provider could increase active help-seeking behavior among FG students. Results showed that FG students were less likely to seek academic help. Among FG and CG students who sought academic help, the intervention had no significant impact on active help-seeking. However, among students seeking non-academic help, active help-seeking behaviors were significantly higher for FG college students assigned a help-provider who signaled a FG identity. In other words, having a shared identity with a help-provider led to more active help-seeking among FG college students seeking non-academic assistance. FG faculty, staff, and student workers who provide non-academic assistance may want to consider self-identifying as FG to increase help-seeking behaviors among FG students struggling to navigate the college environment.

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1 Introduction

More than one-third of all college students are the first in their family to attend college (Skomsvold, 2015). About 50% of all first-generation (FG) college students (students for whom neither parent or guardian earned a bachelor's degree)[1] come from lower-income backgrounds, and many attend college with the intention of achieving economic stability (Ishitani, 2016; Saenz et al., 2007; Stephens et al., 2012). Unfortunately, these students face many barriers and challenges that can block their way to success, resulting in higher drop-out rates and lower grades among FG college students compared with their continuing generation (CG) peers (Cataldi et al., 2018). With most avenues of social mobility reliant on a college degree (U.S. Department of Labor, 2019), these gaps in retention and achievement in higher education have the potential to sustain or exacerbate existing economic inequality.

There are many economic and social reasons for these equity gaps. FG status and socioeconomic status (SES) are commonly treated as proxies for one another, and on average, FG students' families can provide less financial support than what CG students receive (Eagan et al., 2015; Furquim et al., 2017). Compared to CG students, FG students must take on more debt, are less likely to live in dorms on campus, and must work significantly more hours per week while attending college (Furquim et al., 2017; Pascarella et al., 2004; Terenzini et al., 1996). FG students must also face the social challenge of navigating the college environment without the built-in advantage of a parent or guardian who can show them the ropes (Brooks-Terry, 1988; Pascarella et al., 2004). As a result, many FG students struggle to learn the implicit "rules" of how to behave and succeed in college (Housel & Harvey, 2009; Ostrove & Long, 2007), and have gaps in their knowledge of the education system (York-Anderson & Bowman, 1991). In this paper, we examined a factor which may be especially important for FG students: Help-seeking. Using surveys and in-the-moment behavioral observations in the lab, we investigated differences in the rate of help-seeking behavior between FG and CG students and we explored how those behaviors changed when help-providers self-identified as FG.

1.1 Help-seeking

The gap in achievement between FG and CG college students may be related to a difference in help-seeking behavior (Calarco, 2011; Chang et al., 2020; Kim & Sax, 2009; Schwartz et al., 2017). Help-seeking behaviors (e.g., asking instructors or teaching assistants for help in class, after class, via email, at office hours, etc. or asking a peer for assistance) are strongly connected with performance, engagement, anxiety, and general academic achievement (Karabenick, 2003, 2004; Karabenick & Knapp, 1991; Kitsantas & Chow, 2007). Unfortunately, FG students are less likely to engage in help-seeking behaviors than CG students (Chang et al., 2020; Kim &

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[1] There are several ways of defining first-generation status. We use a definition based on Skomsvold's (2015) definition, which primarily focuses on parental education level.

Sax, 2009; Schwartz et al., 2017), potentially leading to FG students acquiring fewer resources and less assistance overall (and perpetuating the gap in achievement). For example, a study of almost 12,000 undergraduate college students found that FG (vs. CG) students were less likely to interact with their instructors during lectures, less likely to work on research with faculty, and less likely to communicate with instructors by email or in person, all of which are important avenues for help-seeking (Kim & Sax, 2009).

Students may seek assistance for both academic reasons (e.g., requesting clarity regarding a topic discussed in lecture) and non-academic reasons (e.g., requesting assistance with navigating the course website). Most research regarding help-seeking behaviors in a university context either focuses exclusively on academic help-seeking or does not differentiate between academic and non-academic help-seeking. Help-seeking is often combined into a singular construct, leaving little room to investigate differences in what type of help FG and CG students seek—or to detect if interventions differentially impact how students seek different kinds of help. Separately examining academic and non-academic help-seeking in the same study may help us understand how best to support FG students, especially if one type of help is more effective for FG-specific challenges, or if one is more easily modified.

For many students, seeking academic help to improve their understanding of course concepts can be the difference between passing or failing. However, it is often similarly important for students to seek assistance in non-academic areas, such as signing up for classes, figuring out additional course requirements like research participation or community service, and applying for scholarships, etc. Without the built-in assistance of a caregiver who has been to college already, FG students often find themselves attempting to navigate the non-academic aspects of college alone, putting them at a disadvantage compared to their CG peers (Brooks-Terry, 1988; Pascarella et al., 2004). FG students who do not seek help when they are confused or uncertain about what to do in these non-academic areas (for example, if they are unclear about pre-requisites and co-requisites and the order in which to take classes) are more likely to report a lower GPA (Morales, 2012), and may find themselves facing consequences that lengthen their time in college. To help ensure FG students have an equal opportunity to be successful in college, it is worthwhile to examine help-seeking for both academic and non-academic purposes.

1.1.1 Active help-seeking

When FG students do seek help (often as a last resort), prior correlational and qualitative research with younger students suggests they be more likely to engage in less effective forms of help-seeking than their peers. Calarco (2011) observed four classrooms of elementary school students and noted that there were differences in the help-seeking behavior between students from families with lower incomes and students from families with higher incomes. When faced with a difficult assignment, students from higher-income backgrounds were more likely to actively seek out help using attention seeking-methods like raising a hand and verbally calling out, or physically approaching their instructor. Students from lower-income backgrounds were more likely to either not ask for help at all (and do their best to solve their

problems on their own) or passively seek help by silently raising a hand and waiting for assistance (often not forthcoming if the instructor was distracted by more active students calling their name or approaching them). Students from lower income families accepted help if an instructor noticed their struggles and offered support, but otherwise these students were more likely to attempt to face challenges independently—even when instructors expected students to ask for help and when not doing so put them at a distinct disadvantage compared to their peers. Among FG college students, exploratory interviews suggest a similar pattern of independent strategy, as opposed to a difference in effort or motivation. According to Yee (2016), FG students report a greater tendency to use independent methods, while CG students are more willing reach out to others. Examining help-seeking as a multifaceted factor involving different behaviors and methods should allow us to better evaluate differences in help-seeking between these groups. Whether a statistically significant difference in active help-seeking behavior can be observed in college students is still an open empirical question.

Research indicates that FG students are less likely to seek attention and assistance from instructors than CG students (Kim & Sax, 2009; Longwell-Grice & Longwell-Grice, 2008; Stephens et al., 2014; Yee, 2016), but what happens when these FG students *do* reach out? Are they persistent, active help-seekers, or are they easily discouraged, passive help-seekers? Does help-seeking in college reflect Calarco's (2011) research with younger children, as Yee's (2016) work suggests? For example, are FG students reaching out to their instructors but sending only one email and never following up if they don't receive a response (i.e., passive help-seeking)? Or are they reaching out through multiple methods (e.g., emailing again, emailing the teaching assistant, trying to speak with the instructor after class, etc.) until a response is forthcoming (i.e., active help-seeking)? To our knowledge, no research to date has empirically investigated whether FG students engage in the same methods of help-seeking that CG students use.

1.2 Interventions that promote help-seeking behavior in FG college students

There is little research on interventions that target FG students' help-seeking behaviors. The most relevant study is a difference-education intervention conducted by Stephens and colleagues (2014). This one-hour intervention involved exposing FG students to senior college students' real-life stories about how their backgrounds shaped their college experience. By educating students about how their different social-class backgrounds influence the difficulties they face, the researchers theorized that it normalized their differences as a part of the college experience and provided critical information that indicated that students with FG backgrounds can be successful if they use the right tools and strategies. After being exposed to this intervention at the beginning of the year, the performance gap between FG and CG students was reduced by 63% at the end of the year, and the gap in the reported tendency to seek college resources (e.g. by emailing or meeting with instructors) was eliminated.

However, this study did not examine passive vs. active help-seeking behaviors. As described previously, FG students may engage in more passive help-seeking behaviors (e.g., reaching out to their instructor once as a last resort and giving up if they receive no reply), rather than active help-seeking behaviors (e.g., messaging their instructor more than once or exploring alternate means of contact when one does not appear effective). Calarco (2011) described the active help-seeking behavior of students from higher income backgrounds as being persistent and attention grabbing, while students from lower income backgrounds were more reserved and easily discouraged. Stephens et al. (2014) measured self-reported general academic help-seeking behavior from FG students (emailing or meeting with instructors) but did not measure the persistence of student help-seeking. While students in the intervention condition reported a higher tendency to initially seek college resources, which mediated course performance, it is unclear whether these students were engaging in passive help-seeking with an attentive instructor, or if they were persistently seeking resources from a more reticent instructor by using active help-seeking methods.

Stephens et al. (2014) designed their difference-education framework to expose freshman to a panel of diverse upperclassmen (both FG and CG) who talked about their struggles and success in school and connected those struggles and successes with their backgrounds. Research suggests that exposure to same-status help-providers can lead to an increase in help-seeking behavior and can influence student responses to challenges (Solanki et al., 2018; Stout et al., 2011). Rather than students solely being impacted by an emphasis on the importance and normality of different backgrounds as Stephens et al. (2014) suggest, this research may be an example of how exposing FG students to other experienced FG help-providers can positively impact their help-seeking behavior.

1.3 Help-providers and their influence on help-seeking and performance

Research on help-providers (i.e., instructors, tutors, advisors, teaching assistants, etc.) supports the idea that seeking help and connecting with these individuals is an important part of college success (Karabenick, 2003, 2004; Karabenick & Knapp, 1991; Kitsantas & Chow, 2007). Although FG students appear to view would-be help-providers as intimidating or out of reach (Longwell-Grice & Longwell-Grice, 2008), the help-seeking behavior of minoritized students increases when students share an identity with the help-provider. For instance, Stout et al. (2011) found that female students were more likely to seek after-class help by the end of the year when their instructor was also female, and that contact with female STEM instructors led female students to more strongly identify with the field of STEM as a whole. More recent research also supports these findings, with female students in courses with female instructors reporting an increase in willingness to engage in help-seeking, exhibiting greater motivation, and responding differently to challenges (Solanki et al., 2018).

Research also indicates that having same-race help-providers can improve the performance of racially minoritized groups. For instance, there is significant evidence

that Black students score higher on achievement tests when assigned to Black teachers (Redding, 2019). We also know that test performance can be impacted by proctor race, and Black test-takers with Black proctors perform better (Marx & Goff, 2005).

Taken together, this research suggests that minoritized students (e.g., racial minorities and women in STEM) ultimately perform better and are more likely to seek help when they are exposed to help-providers with similar identities. However, almost no research to date has examined whether these effects are beneficial for FG college students. Are FG students more likely to seek help when they share a common FG identity with the available help-provider?

2 Current study and research objectives

In the current study, we developed a laboratory method to elicit and measure active help-seeking behavior (e.g., actively reaching out and requesting assistance through multiple methods) among academic and non-academic help-seekers. This laboratory method allowed us to build upon and contribute to previous research in a number of ways. First, we were able to examine active help-seeking as a separate layer of help-seeking behaviors. To date, there have been no quantitative investigations of active help-seeking behavior in college students. We argue that by examining active help-seeking (vs. a more general measure of help-seeking) we can gain greater insight into the behavioral differences in help-seeking tactics between FG and CG students. Second, unlike most research on college student help-seeking, this laboratory design made it possible to directly examine differences in participants' actual behaviors in real time, as opposed to relying on potentially inaccurate or biased self-reported recollections. This also allowed us to provide laboratory support for previous field studies examining differences in help-seeking between FG and CG students. Third, this design allowed us to explore an intervention for increasing help-seeking behaviors among FG students. This intervention sought to identify if a help-provider signaling a shared identity with a FG help-seeker would lead to an increase in active help-seeking and improve educational outcomes among FG students. To examine these contributions we developed the following hypotheses.

2.1 Hypotheses

Hypothesis 1 Replicating previous correlational research, we hypothesized that FG participants would be less likely to engage in general academic help-seeking, compared to CG participants.

Hypothesis 2 Consistent with previous qualitative research, we hypothesized that FG participants would be less likely to engage in active help-seeking (e.g., emailing, texting, calling to gain attention) compared to CG students.

Hypothesis 3 Consistent with the literature on shared-identities and help-seeking, we hypothesized that the presence of a FG help-provider would increase active

help-seeking and improve test performance among FG participants, compared to the absence of a FG help-provider.

3 Methods

To test these hypotheses, we presented participants with an opportunity to engage in general academic help-seeking, and then provided an opportunity to use active help seeking. To determine if the presence of a FG help-provider influenced help-seeking behavior and test performance in FG participants, we manipulated whether or not the experimenter verbally self-identified as a first-generation student.

3.1 Manipulation

Participants interacted individually with undergraduate research assistants through Zoom. Research assistants introduced themselves as the "lead experimenter" and provided an email address and phone number (typed in the Zoom chat) in case "… we are disconnected or anything else goes wrong during the study."

Participants were asked to take a timed GRE-style math test via a Qualtrics link. The test contained 10 multiple choice questions (pre-tested to be somewhat difficult for college students). During this time, the experimenter turned off their sound and camera to look less like they were observing. After 10 min, the test automatically ended and the participant was instructed to contact their experimenter through the Zoom chat, at which point the experimenter turned their camera and audio back on and asked the participant how the math test went. The experimenter then began a partially scripted conversation with the participant. Depending on random assignment to condition, the experimenter recited one of the following scripts during the conversation:

3.1.1 Intervention condition

Well, don't worry if you didn't do well. I didn't do great the first time I took a GRE test. I'm the first in my family to go to college, so nobody at home knew anything about graduate school. I didn't even find out I was supposed to take the GRE until like right before I was supposed to take it and I did so bad! I did way better the second time I took it.

3.1.2 Control condition

Well, don't worry if you didn't do well. I didn't do great the first time I took a GRE test. I didn't even find out I was supposed to take the GRE until like right before I was supposed to take it and I did so bad! I did way better the second time I took it.

In the intervention condition, the script revealed that the experimenter identified as a FG student. In the control condition, there was no reveal of FG status. After the reveal, the experimenter administered survey #1 as a Qualtrics link. Survey #1 contained a measure of belonging (see supplemental materials for an analysis of this measure). At the end of survey #1, Qualtrics displayed a final question:

3.1.3 General help-seeking opportunity

Thank you for your participation. Next, you will be asked to answer a GRE style set of math problems. This set of math problems is very similar to the first set you took today. Before you answer these math problems, you may choose to look over some of your previous incorrect answers with the experimenter. Participants who choose to look over their answers tend to score better on the final problem set.
Do you want to look over your answers with the experimenter?
YES NO

To encourage interest in academic help-seeking, rather than completing the study early, participants were also informed via Qualtrics that if they could improve their score by 20%, they would be entered in a raffle to win a $20 gift card.

3.1.4 Active help-seeking opportunity

Participants who selected "YES" were re-directed to a page that said the following:

You have decided to look over your answers with the experimenter. You have the next ten minutes to do so. Once your ten minutes is up, your math test will automatically start. Please message your experimenter in the Zoom chat to let them know that you would like to go over your answers.

A 10-min timer then began counting down on the left side of the page. The participant had the next ten minutes to try to get in contact with the experimenter before their time ran out and the next math test started. Once they messaged the experimenter in the Zoom chat, the experimenter (who had their video off and mic muted) started an 8-min timer and did not respond to any attempts to contact them until the 8 min were up. Recall that the participants had access to a phone number and email at the beginning of the Zoom chat specifically designated for use in case of lost contact. Participants who attempted to contact the experimenter via the phone number or by email were recorded and coded as having used active help-seeking (see Measures for details).

After 8 min, the experimenter turned on their video and mic and apologized, claiming they were distracted with work for another class. They assured the participant that they still had time to go over their answers before the next test. To standardize the amount of help each participant received, the experimenter recited a prescripted explanation of two questions from math test #1. Once the explanation was complete, participants were asked to start math test #2.
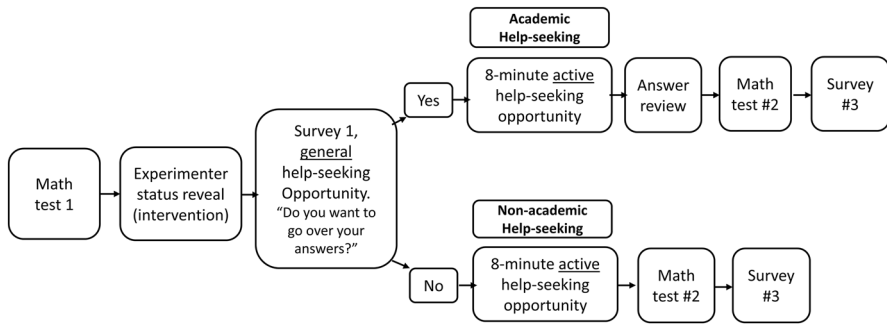
Fig. 1 Timeline visualization

To ensure that participants who do not take the opportunity to look over their answers had a similar experience and opportunity to use active help-seeking, participants who selected "NO" (i.e., "I do not want to go over my answers") saw a message informing them that to move on to math test #2 they needed to message the experimenter and ask for the link to test #2. The experimenter started an 8-min timer upon receiving the initial request for the link and did not respond until those 8 min were up, at which point they apologized and sent the link.

After completing math test #2, participants took a final survey (survey #2) which contained measures of their demographic information. See Fig. 1 for a visual representation of the study timeline and methods.

3.2 Pilot test of experimental paradigm

We conducted a pilot study to evaluate the paradigm. In particular, we wanted to calibrate the difficulty of the math tests to ensure that they were moderately difficult in order to motivate participants to engage in help-seeking behavior. We also wanted to pilot the 8-min waiting period to determine if participants were likely to drop out or leave while their experimenter was not responding. Participants were also asked to complete a set of open-answer questions like "Did anything stand out or seem strange to you during the study?", "What do you think this study is about?" to determine if participants were suspicious of the 8-min waiting period or if they considered the experimenter verbally sharing their FG status to be unusual or suspect. The pilot study was comprised of a sample of 18 FG and 25 CG students. Based on results we determined that the math tests were appropriately difficult to encourage help-seeking (mean score: 3.97/10; percentage of students asking to go over answers: 46.51%). None of the pilot participants reported suspicion or concern with the manipulation, and no participants dropped out of the study during the waiting period. We have included this information to highlight the background for our methodological decisions.

3.3 Participants

A power analysis estimating a small effect size ($f^2 = 0.20$) with 80% power indicated that a sample size of approximately 200 students would be needed to detect effects between two experimental conditions. 255 participants were recruited from a research-intensive public university in the Pacific Northwest. Two participants did not report their FG status and were thus excluded. An additional nine participants were also excluded due to their reported suspicion that the experimenter was intentionally ignoring them in order to observe their behavior (an accurate suspicion which could lead to differences in help-seeking behavior). Suspicion was reported via open answer to two questions at the end of the study: "Did anything stand out or seem strange to you during the study?" and "What do you think this study was about?". After exclusions, there were 244 participants remaining (average age: 22.1 years; 82.9% female). CG participants: $n = 134$, average age 20.7 years, 81.3% female. FG participants: $n = 110$, average age 23.9 years, 85.5% female. Race/ethnicity was obtained from a pre-screener survey, for which only 172 participants (out of 244) responded. For those 172 participants, race/ethnicity was recorded as: 47.6% Caucasian, 9.3% Chicano/Latino, 4.5% Asian American/Pacific Islander, 3.3% other, 2.4% African American, 0.8% Native American, and 2% chose not to respond. Given the 72 missing race/ethnicity responses, the percentages reported above may not be representative of the full sample, therefore race was not included as a covariate or moderator. Participants were randomly assigned to the control or intervention condition, with 115 in the control (69 CG and 46 FG) and 129 in the intervention (65 CG and 64 FG).

3.4 Measures

Supplemental Material includes the full text of all measures.

3.4.1 Demographic measures

FG status was examined as an independent variable determined by participant's answers to the following question: What is the highest level of education your primary caregiver has attained? (1 = Less than high school graduate, 2 = High school graduate, 3 = Some college/vocational school, 4 = Associate's degree, 5 = Bachelor's degree, 6 = Some graduate school, 7 = Master's degree, 8 = Law degree, 9 = Medical degree, 10 = Doctoral degree, 11 = Don't know, 12 = Doesn't apply). This question was also asked in regard to the participant's secondary caregiver. Students for whom neither parent/guardian obtained a bachelor's degree or higher were coded as first-generation. Due to indications in prior research that gender can impact help-seeking and math test scores, participant gender (male, female, other) was measured as a covariate and coded as 1 = female and 0 = male (no respondents selected "other") (Solanki & Xu, 2018; Stout et al., 2011). Experimenter gender (7 female experimenters, 1 male experimenter) was also examined as a covariate (1 = female and

0 = male) and was determined to have no significant impact on participant scores or behavior (see Supplement). Additionally, because FG status and socioeconomic status (SES) are commonly treated as proxies for one another, social class was evaluated as an additional covariate in the supplemental materials, with SES measured based on participant's answers to: "How would you describe your family's social class?" (1 = Working class, 2 = Lower middle class, 3 = Middle class, 4 = Upper middle class, 5 = Upper class), which was then re-coded as 1 = Working class and Lower middle class and 0 = Middle class, Upper middle class, and Upper class.

3.4.2 Help-seeking measures

Help-seeking was measured in two ways. First, general academic help-seeking was evaluated based on the participant's response to the following question: "Would you like to look over your answers with the experimenter?". Students who chose to go over their answers were coded as 1 ("sought academic help") ($n = 121$). Students who chose to not go over their answers were coded as 0 ("did not seek academic help") ($n = 121$). Second, active help-seeking was evaluated for each group based on participant actions during the waiting period (i.e., when the experimenter appeared to be distracted or disconnected). It was very uncommon for participants to use more than one instance of active help-seeking (only 0.04% of the sample), so participants who made any attempt to gain attention using methods beyond the Zoom environment (calling, texting, emailing) were coded as a 1 ("used active help-seeking"), while students who did not engage in active help-seeking were coded as a 0 ("did not use active help-seeking"). Active help-seeking was then identified as academic or non-academic based on the purpose of participants' active behaviors; that is, whether they were seeking the experimenter to go over their answers (seeking academic help) or whether they chose not to go over their answers and were seeking the experimenter to get the link to the next test (seeking non-academic help).

3.4.3 Math test performance

Math performance was evaluated using two 10-question GRE style multiple choice math tests, each adapted from Canning et al. (2020). An example of a typical math problem is: "If $4500 was invested in a bond fund when the price per share was $9 and $3000 was invested in the fund when the price per share was $10, what was the average price per share purchased?". Test #1 functioned as a baseline measure of performance, while test #2 functioned as the primary performance measure. Test #1 was used as a covariate when evaluating test #2.

4 Results

4.1 Analytic plan

Table 1 includes descriptive statistics across all variables. Table 2 includes model results across all variables. Binary logistic regression analyses were conducted to

Table 1 Means and descriptive statistics by condition and FG status for all variables

Variable	FG status	Control		Intervention	
		M	*SD*	*M*	*SD*
General academic help-seeking	FG	0.49	0.51	0.38	0.49
	CG	0.57	0.50	0.56	0.50
Active help-seeking: Academic	FG	0.18	0.39	0.17	0.38
	CG	0.08	0.27	0.17	0.38
Active help-seeking: Non-academic	FG	0.13	0.34	0.43	0.50
	CG	0.27	0.45	0.11	0.31
Math test 2 scores	FG	3.67	2.15	3.44	2.19
	CG	4.38	1.97	4.26	2.31

Higher scores indicate more of a given variable. Math scores are out of ten possible points. Active and general help-seeking are both out of one

determine if general academic help-seeking, active academic help-seeking, and active non-academic help-seeking could be predicted using participant FG status (FG vs CG), condition (FG experimenter vs. control), and participant generational status x condition, after controlling for gender. Primary models for all three binary logistic regression analyses contained the same 4 predictors. Non-significant interactions were trimmed from the models.

A Two-way ANCOVA was used to determine if there was a statistically significant effect of FG status and condition on math performance, while controlling for gender.

4.2 General academic help-seeking

A binary logistic regression analysis using condition, FG status, and condition x FG status to predict whether or not students chose to go over their answers, after controlling for gender, indicated that the four-predictor model was statistically significant, $\chi^2(4) = 10.45$, $p = .03$. Nagelkerke pseudo R^2 indicated that the complete set of 4 predictors accounted for 5.6% of the variance in general help-seeking. The condition x FG status interaction did not account for a significant portion of unique variance Wald $\chi^2(1) = 0.12$, $p = .73$ (odds ratio = 0.82), and thus it was trimmed from the model. The three-predictor model was also significant $\chi^2(3) = 10.07$, $p = .02$. Nagelkerke pseudo R^2 indicated that the set of 3 predictors accounted for 5.4% of the variance in general help-seeking. FG status accounted for a significant portion of unique variance, Wald $\chi^2(1) = 4.88$, $p = .03$ (odds ratio = 0.56), which indicated FG students (compared to CG) were less likely to choose to go over their answers with the experimenter. Only 42.2% of FG college students chose to review their answers with the experimenter, compared to 56.4% of CG college students. Condition did not account for a significant portion of unique variance, Wald $\chi^2(1) = 1.07$, $p = .30$ (odds ratio = 0.76).

Table 2 Model results for all dependent variables

Variable	General academic help-seeking			Active help-seeking: Academic			Active help-seeking: Non-academic			Math test 2 scores	
	Wald $\chi^2(1)$	p	Odds ratio	Wald $\chi^2(1)$	p	Odds ratio	Wald $\chi^2(1)$	p	Odds ratio	$F(1,237)$	p
FG status	4.88	.03	0.56	0.75	.39	1.60	1.05	.31	0.46	1.04	.31
Condition	1.07	.30	0.76	1.48	.22	2.02	1.91	.17	0.36	0.67	.41
Interaction	–	–	–	–	–	–	6.45	.01	13.41	1.15	.28
Gender	4.40	.04	2.14	5.78	.02	0.20	1.12	.29	1.71	5.23	.02

General academic help-seeking, Active help-seeking: Academic, and Active help-seeking: Non-academic were all run as logistic regression. Math test 2 scores were evaluated using an ANCOVA. Due to low rates of male enrollment (42 male out of 244 participants) participant gender was evaluated as a covariate only. For FG status, FG students were coded as 1, CG students were coded as 0. For Condition, the intervention was coded as 1, the control was coded as 0
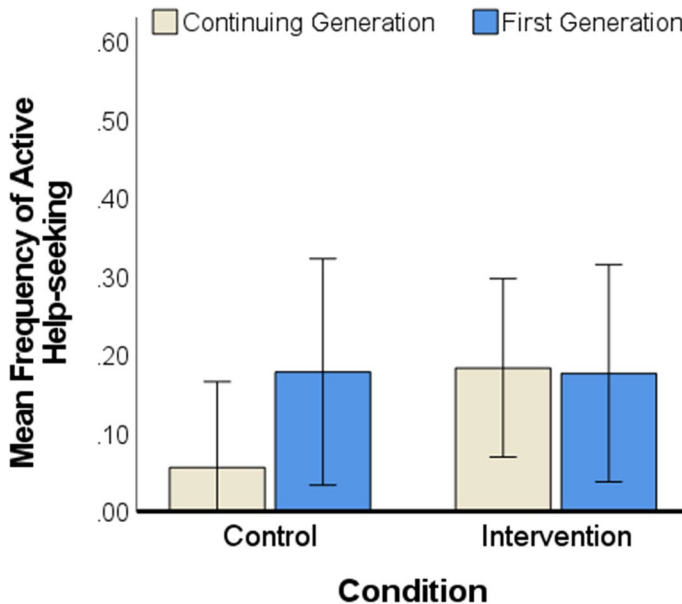
Fig. 2 Average amount of active help-seeking among academic help-seekers by condition and FG status. Error bars represent a 95% confidence interval

4.3 Active help-seeking: Academic

Next, we analyzed active help-seeking within the group of students who chose to go over their answers with the experimenter and sought academic help. The four-predictor model was not significant for academic help-seekers, $\chi^2(4)=8.01$, $p=.09$. Nagelkerke pseudo R^2 indicated that the complete set of 4 predictors accounted for 11.5% of the variance. The condition x FG status interaction did not account for a significant portion of unique variance, Wald $\chi^2(1)=1.13$, $p=.25$ (odds ratio $=0.27$), and so was trimmed from the model. The three-predictor model was also not significant $\chi^2(3)=6.65$, $p=.08$. Nagelkerke pseudo R^2 indicated that the new set of 3 predictors accounted for 9.6% of the variance. See Fig. 2 for a visualization of the probabilities of engaging in active help-seeking among academic help-seekers.

4.4 Active help-seeking: Non-academic

Next, we analyzed active help-seeking within the group of students who chose not to go over their answers with the experimenter and sought non-academic help (to get the link for the next test). The four-predictor model was statistically significant for non-academic help-seekers $\chi^2(4)=12.58$, $p=.01$. Nagelkerke pseudo R^2 indicated that the complete set of 4 predictors accounted for 14.5% of the variance in active help-seeking. The condition $\times$ FG status interaction accounted for a significant portion of unique variance among these non-academic help-seekers, Wald $\chi^2(1)=6.45$,
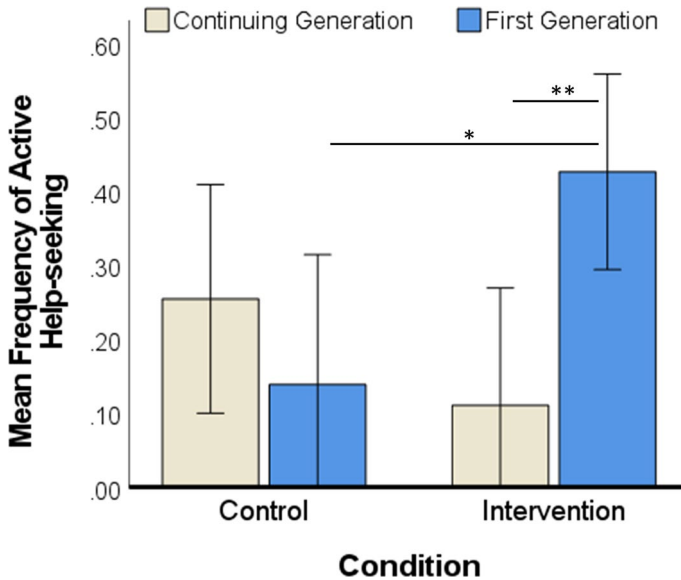
Fig. 3 Average amount of active help-seeking among non-academic help-seekers by condition and FG status. *$p < .05$. **$p < .01$. ***$p < .001$. Error bars represent a 95% confidence interval

$p = .01$ (odds ratio $= 13.41$). When the help-provider identified as a FG college student, FG participants used active help-seeking more often than in any other group, with 43% of FG participants in the intervention using active help-seeking, compared with 13% of FG participants in the control and 27% of CGs in the intervention. Of the FG students using active help-seeking, 17.6% chose to email, 58.8% chose to text and 23.5% chose to call. All of these active help-seekers attempted contact through the Zoom chat (as instructed) before resorting to alternate means of contact. These results suggest that the intervention was most effective at increasing active help-seeking among FG college students who were not seeking academic help.

Further examination of the interaction for non-academic help seekers using conditional effects in the PROCESS macro revealed that there was no difference in active help-seeking between FG and CG college students in the control ($b = -0.77$, $SE_b = 0.75$, $z = -1.03$, $p = .31$). However, when the experimenter revealed that they were an FG student, FG participants were significantly more likely to use active help-seeking, compared to CG participants, ($b = 1.82$, $SE_b = 0.69$, $z = 2.63$, $p = .009$). Examined another way, the intervention significantly increased active help-seeking among FG students ($b = 1.57$, $SE_b = 0.70$, $z = 2.24$, $p = .03$), compared to the control. However, there were no condition differences in active help-seeking among CG students ($b = -1.03$, $SE_b = 0.74$, $z = -1.38$, $p = .17$). See Fig. 3 for a visualization of the means of active help-seeking among non-academic help-seekers.

4.5 Math performance

Math test #2 scores did not differ based on condition or FG status, when controlling for Math test #1 and gender. There was no significant difference in math scores between FG ($M=3.54$, $SD=2.17$) and CG students ($M=4.32$, $SD=2.14$), $F(1,238)=1.04$, $p=.31$, and no significant difference in math score between students in the control ($M=4.10$, $SD=2.07$) compared with the intervention ($M=3.85$, $SD=2.28$), $F(1,238)=0.67$, $p=.41$. There was no interaction between condition and FG status $F(1,238)=1.15$, $p=.28$ (see Tables 1 and 2). Replicating previous research showing that FG students tend to underperform compared to CG students, we found that math test #1 scores (the baseline measure) showed a significant main effect of FG status $F(1,239)=8.51$, $p=.004$, with FG participants ($M=3.90$, $SD=2.06$) scoring significantly lower than CG students ($M=4.37$, $SD=2.30$).

5 Discussion

Many field studies have shown that FG students are less likely to use common help-seeking strategies such as emailing instructors and asking questions, which can lead to lower performance in college (Cataldi et al., 2018; Ishitani et al., 2006; Kim & Sax, 2009). The majority of this research measures the help-seeking behaviors of college students based on self-report data, which is subject to recall bias and potential dishonesty due to the stigma associated with asking for help. Past research with a younger sample suggested that more general measures of help-seeking may mask differences in help-seeing methods between FG and CG students, such as active help-seeking behaviors (e.g., promptly requesting assistance through multiple methods) (Calarco, 2011). Previous qualitative research with FG college students also suggests that non-academic help-seeking can be an important tool for success (Morales, 2012). The present research extends prior qualitative research by developing a quantitative measure of active help-seeking to examine the nuanced help-seeking behavior of FG students for academic and non-academic purposes. This research makes a novel contribution by extending correlational and qualitative research on FG help-seeking with lab-based experimental data.

Specifically, this research developed and tested a new paradigm that provided students with an opportunity to engage in active help-seeking for academic or non-academic purposes. This research provides an experimental measure of help-seeking in the lab, one of only a few direct measures of help-seeking behavior, as opposed to self-reported help-seeking. Additionally, due to the controlled nature of a laboratory study, this paradigm isolates help-seeking behavior from some outside constraints such as access to resources (i.e., access to a vehicle or money) which may act as confounds when measuring help-seeking behaviors in the field (e.g., attending an instructor's office hours; attending review sessions outside of class time; visiting a tutoring center).

This research also tested the effects of communicating a shared identity on the help-seeking behavior of FG students. Results indicated that even briefly mentioning

a shared identity can result in significant behavioral changes for FG students, depending on the purpose of their help-seeking. Among students who sought non-academic help (as opposed to academic help), when the experimenter stopped responding to zoom messages (seemingly unreachable via typical contact methods), FG students were significantly more likely to call, text, and email their experimenter when the experimenter told the participant they were a FG student, compared to when the experimenter did not mention this identity. In other words, when FG students share an identity with the help-provider they are more likely to use active help-seeking strategies to obtain non-academic help. Among students seeking academic help (as opposed to non-academic help), there was no impact of sharing an identity with the help-provider on FG or CG students' active help-seeking.

Why might having a shared identity disproportionately impact active behaviors in non-academic help seekers? Perhaps academic help-seeking is more threatening for FG college students than reaching out for procedural assistance (e.g., requesting the link for the next survey), so the impact of a shared identity can only be seen among FG students seeking a non-threatening form of assistance. It may also be the case that students who decided not to go over their answers were more eager to complete the study; thus, a shared identity may have made these more impatient FG students more comfortable with alerting the experimenter to their need/desire to move on. Regardless of the reason, it seems that sharing an identity with a student peer (the experimenter in this study) made FG students seeking non-academic help more comfortable with utilizing additional attention-seeking strategies outside of the Zoom environment.

Although the intervention increased some FG students' active help-seeking behavior, this increase did not result in better math performance. There was no difference in math scores between students in the intervention and the control when controlling for baseline math scores. There was a significant difference in scores between FG and CG students on the baseline measure, indicating that in general FG students were scoring more poorly than CG students. This was not remedied by the intervention, perhaps because the majority of students using active help-seeking in the intervention were not motivated to go over their previous answers (were non-academic help-seekers), and among the students who did want to go over their answers, the intervention did not impact active help-seeking.

FG students engaged in less general academic help-seeking (i.e., were significantly less likely to choose to go over their answers) than CG students, and scored lower on the math tests than CG students, which replicates patterns reported in previous literature. This replication is especially important due to the different methods of measurement used in this study compared with previous research. Previous studies on FG and CG help-seeking occurred predominantly in the field, and evaluated FG students' help-seeking based on self-reports of behaviors such as office hour or tutoring center attendance, how frequently students emailed or stayed after class to speak with an instructor, etc. (Karabenick, 2003, 2004; Karabenick & Knapp, 1991; Kitsantas & Chow, 2007; Payne et al., 2021; Stephens et al., 2014). In the present study, due to our paradigm and laboratory setting, we were able to observe and analyze participants' actual behaviors, which provides additional support for the validity of the help-seeking opportunity we provided.

5.1 Limitations and future directions

Although this study was highly controlled in a laboratory environment, we tried to make it as realistic as possible; however, it may not be representative of processes in the real world. For instance, there were no consequences for poor performance, and no continued interactions with the help-provider (unlike what might be the case with a classmate, a tutor, or a teaching assistant, with whom students would likely need to have repeated interactions with). Due to regulations put in place during the COVID 19 pandemic, this study was administered through Zoom. Although many instances of student help-seeking occur while students are out of the classroom environment (i.e., at home working on class assignments, etc.), the effect of active help-seeking in response to sharing an identity with a help-provider may be different when students are seeking help in-person. Although we chose to measure active help-seeking through immediately quantifiable methods (number of emails, phone calls, and text messages), there may be other methods of help seeking that future researchers include in their definition of active help-seeking, especially if measuring active help-seeking in the field—for example, attending office hours or messaging using course website applications. Additionally, this was an acute, targeted laboratory study, so we did not measure help-seeking beyond our eight-minute waiting period. Results may vary in a field setting where students are not waiting on immediate assistance. Finally, the research assistants interacting with students presented themselves as upper year undergraduates working on research, thus, active help-seeking behaviors were in response to seeking help from an undergraduate peer, rather than an instructor or staff member. Student responses to help-providers in a different context may not be reflected in the current results.

Researchers investigating this topic in the future may consider changing the paradigm to allow for further investigation of help-seeking differences between FG and CG students. For example, researchers could replace the option to move on to test #2 without going over one's answers with an option for individuals to review their answers on their own (vs. going over answers with the experimenter). This would allow researchers to empirically evaluate if FG students are more likely to work independently compared to CG students, as research suggests. If researchers included a mandatory 10 min wait time for both groups, then this modified version of our paradigm would also reduce the potential confound of time, removing the concern that some participants might have chosen not to go over their answers in the hopes of finishing sooner.

This research focused on the acute impacts of shared identity messaging on active help-seeking with a relatively brief intervention. Future research should consider examining the way shared identity information is conveyed, how long it influences behavior, and if repeated messaging could have a greater effect. There may be key times or contexts where messaging is more impactful (e.g., when meeting a student for the first time vs. right before an important deadline). Researchers should also consider investigating the impact of intersecting identities such as gender and race. Does the response to a shared FG identity change when individuals share or do not share other important identities? Future researchers interested in help-seeking behaviors may also want to consider combining shared identity messaging with

other strategies such as behavioral modeling (e.g., showing students how, when, and to what extent help-seeking is expected/appropriate) to increase active academic help-seeking in addition to non-academic help-seeking. Researchers should also recognize that encouraging FG to only seek help in accepted, normative ways, rather than encouraging college faculty and staff to change their expectations of acceptable helping, may perpetuate the notion that FG students should assimilate to the collegiate environment. Interventions aimed at supporting FG students should consider the unwritten rules in higher education about how to seek help and support potential role models in methods that will recognize FG students' help-seeking strategies.

Finally, as Scharp and Thomas (2019) argue, scholars engaged in critical social science research should assess how their own positions and experiences might contribute to their interpretations of people's lived experiences. With this in mind, both authors self-identify as continuing-generation. We acknowledge that our backgrounds influence our perspectives and interpretations. To combat this we made an effort to seek opinions from first-generation research-assistants recruited to assist with running and developing this study, as well as from first-generation faculty members at our institution.

6 Conclusion

This study has the potential to impact FG college students in a variety of ways. In the most direct way, this research provides one strategy for increasing active help-seeking behaviors among FG college students. Although it may not increase academic help-seeking, the areas where FGs may need the most assistance are arguably non-academic (e.g., determining appropriate course work and preparations for graduate school, identifying what resources are available and appropriate, finding and applying for financial aid, etc.). FG students receive less instruction on how to navigate the college environment. If we can increase the rate at which FG students reach out to help-providers at the university level it may help FG students to secure access to the same informational resources their CG peers already have. Given that the greatest behavioral change occurred among students seeking procedural help, university staff members working in any area that might involve non-academic help-seeking (e.g., in the financial aid office, technical support, academic advisors, etc.) may want to consider self-identifying if they are FG. This research provides experimental evidence to support the campaign run by the National Center for First-Generation Success to improve the experiences of FG students in college by encouraging faculty members and support staff to publicly identify as FG (e.g., by speaking openly about being first-generation and/or wearing or displaying "I'm first-gen" material). Specifically, this research provides preliminary evidence that publicly identifying as a FG student increases active help-seeking among FG students. By providing experimental evidence of this behavioral change, this research may help the initiative to spread further and impact more FG students. It will be important in future research to develop other effective strategies that could increase active

help-seeking in academic contexts, and by extension, increase retention and success, thereby helping to reduce economic and education-related gaps in our society.

In the long term, this research has the potential to increase the number of FG students who successfully navigate and graduate college, which will in turn increase the number and variety of viewpoints and perspectives involved in higher level political and social decision making (e.g., more FGs in public policy making, STEM research and development, etc.). Universities put extensive resources into programs and services to increase FG performance and retention, yet the success of these services hinges on whether or not FG students actively use them. By identifying a possible route to increase FG non-academic help-seeking, this research has the potential to benefit policy makers and stakeholders who have invested in these services by increasing their effectiveness.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s11218-023-09794-y.

Conflict of interest The authors declare no conflicts of interest.

References

Brooks-Terry, M. (1988). *Tracing the disadvantages of first-generation college students: An application of Sussman's option sequence model*. Plenum Press. https://doi.org/10.1007/978-1-4899-2106-2_10

Calarco, J. M. C. (2011). "I need help!" Social class and children's help-seeking in elementary school. *American Sociological Review, 76*(6), 862–882. https://doi.org/10.1177/0003122411427177

Cataldi, E. F., Bennett, C. T., & Chen, X. (2018). *First-generation students: College access, persistence, and post-bachelor's outcomes*. National Center for Education Statistics, U.S. Department of Education. https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2018421.

Canning, E. A., LaCosse, J., Kroeper, K. M., & Murphy, M. C. (2020). Feeling like an imposter: The effect of perceived classroom competition on the daily psychological experiences of first-generation college students. *Social Psychological and Personality Science, 11*(5), 647–657. https://doi.org/10.1177/1948550619882032

Chang, J., Wang, S. W., Mancini, C., McGrath-Mahrer, B., & Orama de Jesus, S. (2020). The complexity of cultural mismatch in higher education: Norms affecting first-generation college students' coping and help-seeking behaviors. *Cultural Diversity and Ethnic Minority Psychology, 26*(3), 280–294. https://doi.org/10.1037/cdp0000311

Eagan, K., Stolzenberg, E. B., Bates, A. K., Aragon, M. C., Suchard, M. R., & Rios-Aguilar, C. (2015). *The American freshman: National norms fall 2015*. Los Angeles: Higher Education Research Institute, UCLA. https://www.heri.ucla.edu/monographs/TheAmericanFreshman2015.pdf

Furquim, F., Glasener, K. M., Oster, M., McCall, B. P., & DesJardins, S. L. (2017). Navigating the financial aid process: Borrowing outcomes among first-generation and non-first-generation students. *The Annals of the American Academy of Political and Social Science, 671*(1), 69–91. https://doi.org/10.1177/0002716217698119

Housel, T. H. (2009). *The invisibility factor: Administrators and faculty reach out to first-generation college students*. BrownWalker Press.

Ishitani, T. T. (2006). Studying attrition and degree completion behavior among first-generation college students in the united states. *The Journal of Higher Education, 77*(5), 861–885. https://doi.org/10.1080/00221546.2006.11778947

Karabenick, S. A. (2003). Seeking help in large college classes: A person-centered approach. *Contemporary Educational Psychology, 28*(1), 37–58. https://doi.org/10.1016/s0361-476x(02)00012-7

Karabenick, S. A. (2004). Perceived achievement goal structure and college student help seeking. *Journal of Educational Psychology, 96*(3), 569–581. https://doi.org/10.1037/0022-0663.96.3.569

Karabenick, S. A., & Knapp, J. R. (1991). Relationship of academic help seeking to the use of learning strategies and other instrumental achievement behavior in college students. *Journal of Educational Psychology, 83*(2), 221–230. https://doi.org/10.1037/0022-0663.83.2.221

Kim, Y. K., & Sax, L. J. (2009). Student–faculty interaction in research universities: Differences by student gender, race, social class, and first-generation status. *Research in Higher Education, 50*(5), 437–459. https://doi.org/10.1007/s11162-009-9127-x

Kitsantas, A., & Chow, A. (2007). College student's perceived threat and preference for seeking help in traditional, distributed and distance learning environments. *Computers and Education, 48*(3), 383–395. https://doi.org/10.1016/j.compedu.2005.01.008

Longwell-Grice, R., & Longwell-Grice, H. (2008). Testing Tinto: How do retention theories work for first-generation, working-class students? *Journal of College Student Retention: Research, Theory & Practice, 9*(4), 407–420. https://doi.org/10.2190/cs.9.4.a

Marx, D. M., & Goff, P. A. (2005). Clearing the air: The effect of experimenter race on target's test performance and subjective experience. *British Journal of Social Psychology, 44*(4), 645–657. https://doi.org/10.1348/014466604x17948

Morales, E. E. (2012). Navigating new worlds: A real-time look at how successful and non-successful first-generation college students negotiate their first semesters. *International Journal of Higher Education, 1*(1), 90–101. https://doi.org/10.5430/ijhe.v1n1p90

Ostrove, J. M., & Long, S. M. (2007). Social class and belonging: Implications for college adjustment. *Review of Higher Education: Journal of the Association for the Study of Higher Education, 30*(4), 363–389. https://doi.org/10.1353/rhe.2007.0028

Pascarella, E. T., Pierson, C. T., Wolniak, G. C., & Terenzini, P. T. (2004). First-generation college students. *The Journal of Higher Education, 75*(3), 249–284. https://doi.org/10.1080/00221546.2004.11772256

Payne, T., Muenks, K., & Aguayo, E. (2021). "Just because I am first gen doesn't mean I'm not asking for help": A thematic analysis of first-generation college students' academic help-seeking behaviors. *Journal of Diversity in Higher Education.* Advance online publication. https://doi.org/10.1037/dhe0000382

Redding, C. (2019). A teacher like me: A review of the effect of student–teacher racial/ethnic matching on teacher perceptions of students and student academic and behavioral outcomes. *Review of Educational Research, 89*(4), 499–535. https://doi.org/10.3102/0034654319853545

Saenz, V. B., Hurtado, S., Barrera, D., Wolf, D., Yeung, F. (2007). *First in my family: A profile of first-generation college students at four-year institutions since 1971.* Los Angeles: Higher Education Research Institute, UCLA https://www.heri.ucla.edu/PDFs/pubs/TFS/Special/Monographs/FirstInMyFamily.pdf.

Schwartz, S. E., Kanchewa, S. S., Rhodes, J. E., Gowdy, G., Stark, A. M., Horn, J. P., Parnes, M., & Spencer, R. (2017). "I'm having a little struggle with this, can you help me out?": Examining impacts and processes of a social capital intervention for first-generation college students. *American Journal of Community Psychology, 61*(1–2), 166–178. https://doi.org/10.1002/ajcp.12206

Scharp, K. M., & Thomas, L. J. (2019). Disrupting the humanities and social science binary: Framing communication studies as a transformative discipline. *Review of Communication, 19*(2), 147–163. https://doi.org/10.1080/15358593.2019.1595702

Skomsvold, P. (2015). *Profile of undergraduate students: 2011–2012. Web Tables.* (NCES 2015025) National Center for Education Statistics, U.S. Department of education. https://files.eric.ed.gov/fulltext/ED581717.pdf

Solanki, S. M., & Xu, D. (2018). Looking beyond academic performance: The influence of instructor gender on student motivation in STEM fields. *American Educational Research Journal, 55*(4), 801–835. https://doi.org/10.3102/0002831218759034

Stephens, N. M., Fryberg, S. A., Markus, H. R., Johnson, C. S., & Covarrubias, R. (2012). Unseen disadvantage: How American universities' focus on independence undermines the academic performance of first-generation college students. *Journal of Personality and Social Psychology, 102*(6), 1178–1197. https://doi.org/10.1037/a0027143

Stephens, N. M., Hamedani, M. G., & Destin, M. (2014). Closing the social-class achievement gap: A difference-education intervention improves first-generation students' academic performance and all students' college transition. *Psychological Science, 25*(4), 943–953. https://doi.org/10.1177/0956797613518349

Stout, J. G., Dasgupta, N., Hunsinger, M., & McManus, M. A. (2011). STEMing the tide: Using ingroup experts to inoculate women's self-concept in science, technology, engineering, and mathematics

(STEM). *Journal of Personality and Social Psychology, 100*(2), 255–270. https://doi.org/10.1037/a0021385

Terenzini, P. T., Springer, L., Yaeger, P. M., Pascarella, E. T., & Nora, A. (1996). First-generation college students: Characteristics, experiences, and cognitive development. *Research in Higher Education, 37*(1), 1–22. https://doi.org/10.1007/BF01680039

U.S. Department of Labor. (2019). *Occupational outlook handbook*. U.S. Bureau of Labor Statistics.

Yee, A. (2016). The unwritten rules of engagement: Social class differences in undergraduates' academic strategies. *The Journal of Higher Education, 87*(6), 831–858. https://doi.org/10.1080/00221546.2016.11780889

York-Anderson, D. C., & Bowman, S. L. (1991). Assessing college knowledge of first-generation and second-generation college students. *Journal of College Student Development, 32*(2), 116–122.

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