

Title: Connecting students with financial aid: Evidence from a field experiment

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Background/Context: The growth of behavioral economics and “nudges” to improve student outcomes have led to key insights into reducing barriers in postsecondary education. Research suggests that the lack of information and the complexity of the financial aid process can keep students from making optimal decisions to benefit their postsecondary education career (Bettinger, Long, Oreopoulos, & Sanbonmatsu, 2012; Dynarski & Scott-Clayton, 2008). Further, reminding students to renew the FAFSA has been shown to be a successful approach in improving college outcomes such as persistence (Castleman and Page 2016). Yet, it is still not clear what format, frequency, or type of information should be supplied, and whether information must be coupled with other types of supports to meaningfully influence decision-making processes.

Purpose/Objective/Research Question: This study contributes to the field by testing the impact of targeted information and framing of messaging on task completion (i.e., submitting the Free Application for Federal Student Aid, or FAFSA) as well as decisions regarding a choice that involves a longer commitment (i.e. the number of credits taken in a semester or year).

We hypothesized that by improving the information students have and simplifying the steps towards completing the FAFSA, we will improve aid receipt. In turn, this may improve college persistence, the likelihood of degree completion, and other postsecondary outcomes, such as performance.¹ Thus, our research questions are as follows:

1. Among students who did not submit a FAFSA, does providing clear information about financial aid eligibility, simplified instructions for completing the financial aid form, and suggestions about other resources available to them have a positive effect on college outcomes?
2. Among students who submitted a FAFSA the previous year, does providing clear information about the need to resubmit the FAFSA and how to do so have a positive effect on college outcomes?
3. Does the framing of the information, whether positive, negative, or neutral, affect whether students respond and the magnitude of that response?

Setting and Participants: Our sample is derived from participants of the 2015-16 National Postsecondary Student Aid Study (NPSAS:16), a nationally representative survey containing substantial background information on students’ financial aid experiences prior to our intervention. From this population, we narrow down to 15,370 students who 1) attend less-selective or open-admissions institutions (i.e., “broad access” schools); and 2) are in their first three years of college during the baseline collection of the survey, to observe students early in their college trajectories.

¹ We pre-registered an analysis plan with these variables as our primary outcomes (Bettinger & Long, 2017).

Intervention/Program/Practice: Students were randomly assigned to either a control group or one of seven treatment groups (see Figure 1). The treatment consisted of four rounds of e-mails and two USPS mail pieces sent between January and April 2017. On average we sent 3.59 emails and 1.82 mail pieces per student after accounting for opt-outs and bouncebacks.

Research Design:

Table 1 shows average summary statistics for the experimental sample (Columns 1-2), for attriters only (Columns 3-4), for the experimental sample without attriters (Columns 6-7), and for the final analytic sample (Columns 9-10).²

Column 11 shows p-values from t-tests that compare means of student/institutional characteristic among the final analytic sample across the control and pooled treatment groups. Group means are not significantly different across control and treatment for any of the 25+ covariates, except the indicator for being a fifth-year college student ($p=0.072$). Given the number of variables being tested, this is about the appropriate number of covariates we might find to be statistically different by chance and ensures baseline equivalence.

Data Collection and Analysis: We merge student-level data on demographics, background, enrollment, aid, and work experiences from NPSAS:16 with treatment group assignment from our randomization file; FAFSA submission data from the U.S. Department of Education; and postsecondary attendance data from the National Student Clearinghouse.

We use linear regression analysis to estimate the intention-to-treat estimates of the treatment for our outcome variables of interest, controlling for student- and institutional-level covariates and absorbing randomization strata.

Findings/Results: We find that receiving any treatment increases the likelihood of filing the FAFSA in year of our experiment by 3.31 percentage points, although these effects fade out in the subsequent year (Table 2). There is a marginal increase of 1.38 percentage points in one's likelihood of being enrolled year following our experiment, and a significant increase of 2.27 percentage points in the likelihood of enrollment or graduation within two years post-treatment.

Conclusions: Results from the study should provide guidance on how to best support students who face obstacles navigating the financial aid system whilst continuing with their postsecondary education. Further, the paper contributes to the broader field of RCTs by demonstrating an intervention modeled toward targeting a nationally representative sample. Most of the prior literatures on financial aid “nudge” experiments focus on participants from a single institution, regional area, or of a student characteristic, which poses challenges when generalizing the results to apply to a broader student population.

² We define attriters as participants who opt out of receiving mail or email treatments, and participants with any bouncebacks (i.e., mail is returned to sender, or email bounces back as undeliverable). 0.15% ($n=23$) opt out of treatment, and 3.74% ($n=575$) experience bouncebacks, with the total attrition rate being 3.88% ($n=597$; one student experienced bouncebacks and subsequently disenrolled from treatment).

There are, however, gaps in knowledge in terms of the mechanisms of the experiment, due to two nationwide changes in the FAFSA filing process which happened during the year of our experiment: 1) early FAFSA where applications were available three months earlier during the year of our experiment than in previous years; and 2) the “prior-prior year” mandate which required all students to file the FAFSA using income tax information from two years ago, rather than from the previous year. While these procedural changes are ultimately with the purpose of simplification and broader access for all, it is not clear how they could have affected our treatment estimates. Further analyses should investigate the impact of the FAFSA policy changes in line with our dependent variables.

References

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- Castleman, B. L., & Page, L. C. (2016). Freshman Year Financial Aid Nudges: An Experiment to Increase FAFSA Renewal and College Persistence. *Journal of Human Resources*, 51(2), 389–415. <https://doi.org/10.3368/jhr.51.2.0614-6458R>
- Dynarski, S., & Scott-Clayton, J. (2008). Complexity and Targeting in Federal Student Aid: A Quantitative Analysis. *Tax Policy and the Economy*, 22(July), 109–150. <https://doi.org/10.3386/w13801>

Figure 1: Experimental design flowchart

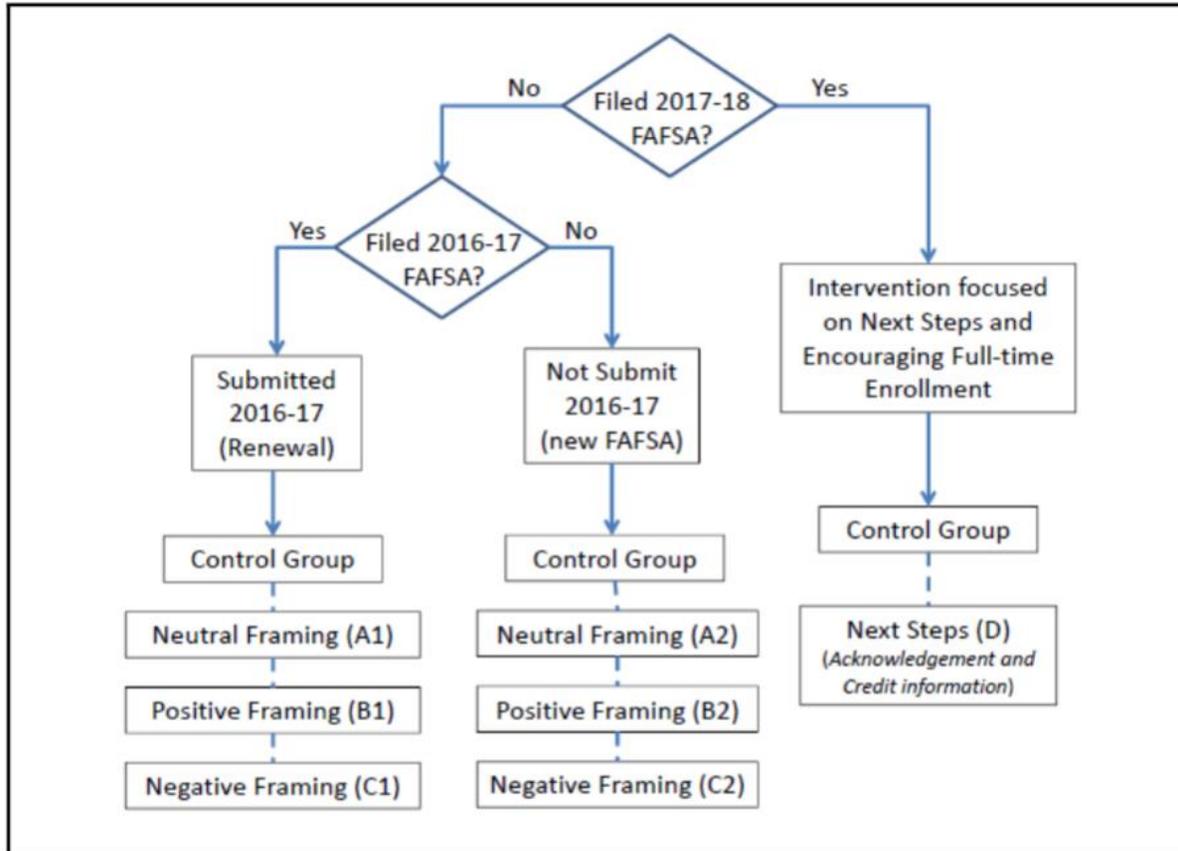


Table 1: Summary statistics, attrition, and balance

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Experimental Sample		Attriters			Treatment Balance			Final Analytic Sample		
	Mean	SD	Mean	SD	<i>p</i>	Control Mean	Treatment Mean	<i>p</i>	Control Mean	Treatment Mean	<i>p</i>
<i>Student Characteristics</i>											
Female	0.616	0.486	0.611	0.488	0.822	0.608	0.619	0.237	0.6	0.61	0.332
White	0.499	0.5	0.435	0.496	0.001	0.501	0.501	0.945	0.501	0.505	0.67
Black	0.187	0.389	0.223	0.416	0.02	0.186	0.185	0.863	0.19	0.186	0.61
Hispanic	0.201	0.4	0.223	0.416	0.159	0.199	0.2	0.965	0.199	0.198	0.888
Asian	0.046	0.209	0.057	0.232	0.186	0.046	0.045	0.945	0.045	0.045	0.99
Multi/Other	0.059	0.235	0.055	0.229	0.718	0.06	0.059	0.782	0.058	0.057	0.777
Age (continuous)	26.7	9.435	25.4	8.74	0.001	26.8	26.8	0.934	27.0	27.1	0.629
First-Gen Status	0.423	0.47	0.414	0.471	0.63	0.421	0.424	0.731	0.418	0.424	0.522
Freshman	0.345	0.475	0.382	0.486	0.051	0.343	0.343	0.999	0.34	0.34	0.993
Sophomore	0.286	0.452	0.271	0.445	0.415	0.287	0.287	0.964	0.279	0.275	0.649
Junior	0.156	0.363	0.152	0.36	0.812	0.156	0.156	0.978	0.151	0.153	0.74
Senior	0.187	0.39	0.168	0.374	0.212	0.184	0.189	0.455	0.197	0.205	0.339
Fifth-Year	0.026	0.16	0.027	0.162	0.92	0.03	0.025	0.078	0.032	0.026	0.072
Graduated/Transferred	0.279	0.448	0.174	0.38	0	0.274	0.287	0.136	0.272	0.288	0.069
FAFSAs previously filed (count)	3.36	2.93	3.05	2.882	0.008	3.352	3.381	0.596	3.35	3.36	0.773
EFC (binned)	14,000	18,000	14,000	12,000	0.598	14,000	14,000	0.183	14,000	14,000	0.503
ACT (Comprehensive) Score	23.302	1.891	23.292	1.983	0.893	23.299	23.303	0.9	23.291	23.284	0.857
SAT Math	543	40.075	544	33.678	0.618	543	543	0.299	544	543	0.365
SAT Critical Reading	538	38.789	539	32.678	0.531	539	538	0.211	539	538	0.255
High School GPA	2.426	0.891	2.425	0.912	0.97	2.439	2.421	0.269	2.451	2.441	0.58
College GPA	2.855	0.968	2.772	0.997	0.031	2.847	2.863	0.361	2.833	2.857	0.218
<i>Institutional Characteristics</i>											
Public Institution	0.589	0.492	0.539	0.499	0.012	0.599	0.588	0.239	0.582	0.575	0.475
For-Profit Institution	0.256	0.436	0.328	0.47	0	0.251	0.254	0.727	0.265	0.269	0.646
Institution ACT Score (75th Percentile)	26.671	2.002	26.798	1.86	0.113	26.686	26.658	0.442	26.69	26.667	0.567
Institution SAT Score (75th Percentile)	590.19	34.917	592.9	31.223	0.053	590.482	589.922	0.381	590.551	590.198	0.611
Admission Rate	0.669	0.132	0.673	0.138	0.518	0.667	0.67	0.281	0.668	0.669	0.631
<i>Number of Observations</i>	15370		597			14773			12156		

Table 2: Treatment effects on task completion and long-term outcomes

	Submitted FAFSA1718 post- treatment	Enrolled in 17-18 SY	Submitted FAFSA1819 (1 year post- treatment)	Enrolled or Graduated post-treatment
<i>All Treatment</i>				
Treatment (Pooled)	0.0331 *** (0.008)	0.0138 + (0.008)	0.0003 (0.008)	0.0227 ** (0.008)
<i>Treatment by Prior Year FAFSA</i>				
Yes Prior FAFSA	0.0429 *** (0.013)	0.0124 (0.011)	-0.0117 (0.013)	0.0204 + (0.011)
No Prior FAFSA	0.0223 * (0.009)	0.0157 (0.011)	0.0144 (0.010)	0.0256 * (0.011)
p-value, Yes = No Prior FAFSA	0.2409	0.804	0.0908	0.7149
<i>Treatment by Framing</i>				
Neutral	0.0298 ** (0.010)	0.0087 (0.010)	0.0013 (0.010)	0.0153 (0.010)
Positive	0.0397 *** (0.010)	0.0162 + (0.009)	0.0093 (0.010)	0.0265 ** (0.010)
Negative	0.0303 ** (0.010)	0.0167 + (0.009)	-0.0096 (0.010)	0.0265 ** (0.010)
p-value, Neutral = Positive	0.6239	0.8752	0.7209	0.6658
p-value, Neutral = Negative	0.8947	0.6571	0.3349	0.5387
<i>Indiv Treatment Arms</i>				
No Prior FAFSA + Neutral	0.0212 + (0.011)	0.0115 (0.014)	0.0188 (0.012)	0.0236 + (0.014)
No Prior FAFSA + Positive	0.0192 + (0.011)	0.0068 (0.013)	0.0213 + (0.012)	0.014 (0.014)
No Prior FAFSA + Negative	0.0266 * (0.011)	0.0289 * (0.013)	0.0029 (0.012)	0.0393 ** (0.014)
Yes Prior FAFSA + Neutral	0.0374 * (0.016)	0.0064 (0.014)	-0.0138 (0.016)	0.0082 (0.014)
Yes Prior FAFSA + Positive	0.0573 *** (0.016)	0.0242 + (0.013)	-0.0011 (0.016)	0.0371 ** (0.014)
Yes Prior FAFSA + Negative	0.0337 * (0.016)	0.0063 (0.013)	-0.0206 (0.016)	0.0154 (0.014)

Analyses excludes all students who completed the FAFSA1718 (first outcome of interest) prior to treatment.
N=12,156.

All models control for student-level covariates (gender, number of prior FAFSA applications completed, prior year EFC, college grade level, age, ACT/SAT score, high school GPA, college GPA, race/ethnicity, first-generation status, pre-treatment graduation dummy, and graduation year) and school-level covariates (public, for-profit status, 75th

+ p<0.10 * p<0.05 ** p<0.01 *** p<0.001