

# Performance-based aid, enhanced advising, and the income gap in college graduation: evidence from a randomized controlled trial

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# Background

- This study was part of the nationwide Performance-Based Scholarship Demonstration, a series of financial aid experiments in the U.S. managed by MDRC
- 8 RCTs at different institutions involving approx. 12,000 students
- Interventions varied in duration, funding amounts, incentives tied to additional financial aid



# Motivation

- There exists a large income gap in college graduation
- From Dynarski (2008)
  - 29% of 19-year-olds from the lowest income quartile enroll in college, but only 9% graduate by age 25
  - 80% of 19-year-olds from the highest income quartile enroll in college, and 54% graduate by age 25
- Income gaps in enrollment, persistence, and graduation raise concerns for equal opportunity in higher education

# Motivation

- Can additional financial aid and enhanced academic advising lessen income gaps in higher education?
- We examine results from an RCT focusing on low-income students at the University of New Mexico:
  - Vision Inspired Scholarship through Academic Achievement (VISTA)
- Preview of findings:
  - Evidence the intervention decreased time to degree, with no meaningful overall increase in the likelihood of graduation

# Motivation

- Preview of findings:
  - VISTA students indicated high satisfaction with the program’s model of “enhanced” academic advising
  - Receiving VISTA significantly reduced student loan debt
  - Modest evidence that treatment effects were driven by students that were less academically prepared for college
    - i.e., had lower high school grades

# Program Design

- 2008 and 2009 cohorts:
  - Random assignment of 1,081 low-income first-time, full-time, New Mexico state resident students
    - Low-income defined as Pell Grant-eligible
  - Letters were sent to students to encourage participation in VISTA
  - VISTA students attended an additional orientation to learn about the study and to provide informed consent to participate
  - All participants filled out baseline questionnaires during orientations

# Program Design

- VISTA students could received up to \$1,000 each semester by:
  - maintaining a certain grade point average (GPA)
  - meeting regularly with their “enhanced” academic advisor
  - Registering/earning the minimum number of credits
- Funding limited to the first two years of college; students were eligible in each semester they qualified
  - E.g., if a student did not qualify in their second semester, they still had a shot in their third and fourth semesters

# Program Design

- Academic advising was “enhanced”
  - VISTA students were assigned to a *dedicated* adviser for the duration of the program
  - VISTA students were given priority in advising appointments
  - VISTA advisers were trained to provide “holistic advising,” which involves learning about—and potentially providing referrals for—nonacademic aspects of a student’s life, such as health, work, and family issues



# Program Design

- Payment schedule:
  - Semester 1:
    - Start of term: meet with adviser and register for  $\geq 12$  credit hours (\$250 USD)
    - Midterm: meet with advisor with GPA  $\geq 2.0$  (\$250 USD)
    - End of term: meet with adviser after completing above requirements (\$500 USD)
  - Semesters 2 - 4:
    - Start of term: meet with adviser and register for  $\geq 15$  credit hours (\$250 USD)
    - Midterm: meet with advisor with GPA  $\geq 2.0$  (\$250 USD)
    - End of term: meet with adviser after completing above requirements (\$500 USD)
  - Payments were made directly to the students

# Program Design

- Payment amounts were of meaningful size
  - Recall: low-income students
  - Resident tuition and fees in 2008 were \$2,670.99 USD
- Academic requirements were relatively “low-bar”
  - VISTA requirements only slightly higher than general requirements for good progress: 1.7 GPA in first 30 hours, and 2.0 thereafter

# Data

- Two primary sources:
  - baseline survey data (from orientations)
  - administrative transcript data
- Two secondary sources:
  - Follow-up online survey for 2009 cohort (65% response rate)
  - Observations from follow-up focus groups
- 536 treated students; 545 control students
- Randomization successfully balanced treatment and control group characteristics...

Table 1. Baseline characteristics of VISTA recipients and non-recipients

characteristic	treatment group	control group
female	.614	.602
age distribution		
17-18	.944	.930
19-20	.056	.070
one or more children	.017	.018
race/ethnicity		
Hispanic	.602	.610
white	.215	.222
black	.032	.022
Asian or Pacific Islander	.032	.039
American Indian	.069	.068
other	.050	.039
ACT English		
25 <sup>th</sup> percentile	16	17
75 <sup>th</sup> percentile	24	23
ACT math		
25 <sup>th</sup> percentile	16	17
75 <sup>th</sup> percentile	23	23
high school cumulative GPA		
3.5-4.4	.397	.367
3 to less than 3.5	.326	.350
2 to less than 3	.244	.248
no GPA available	.032	.035

Table 1. Baseline characteristics of VISTA recipients and non-recipients (continued)

characteristic	treatment group	control group
non-English language spoke commonly at home	.208	.232
first person in family to attend college	.321	.335
diplomas/degrees earned		
high school diploma	.972	.983
GED certificate	.019	.007
other	.013	.011
currently working	.494	.485
average hourly wage (\$)	8.2	8.3
plans to live on campus	.418	.440
parents adjusted gross income (\$)	29,238	28,774
sample size	536	545

*Source:* data from MDRC calculations using the Baseline Information Form, UNM placement test and high school transcripts, and FAFSA filings. The *p*-value from a regression of research status on baseline characteristics was .185. Two-tailed *t*-tests indicated no significant differences between treatment and control means at the five percent-level. Distributions may not add up to 100 percent due to rounding. ACT outcomes reflect percentile scores—*t*-tests of significant differences are not conducted using these figures.

# Empirical Model

- OLS and LPM models with covariates and binary treatment indicators:

$$y_i = \alpha + \tau VISTA_i + X_i\beta + \varepsilon_i$$

- where  $y_i$  is a registration, grade, or degree attainment outcome
- $\hat{\tau}$  is the treatment effect
- $\varepsilon_{it}$  is the idiosyncratic error term

# Empirical Model

- OLS and LPM models with covariates and a binary treatment indicator:

$$y_i = \alpha + \tau VISTA_i + X_i \beta + \varepsilon_i$$

- where  $X_i$  includes:
  - Gender
  - Race-ethnicity
  - Parents' highest education
  - Employment status at baseline
  - Language spoken at home
  - High school GPA
  - ACT composite score
  - Family income

# Results

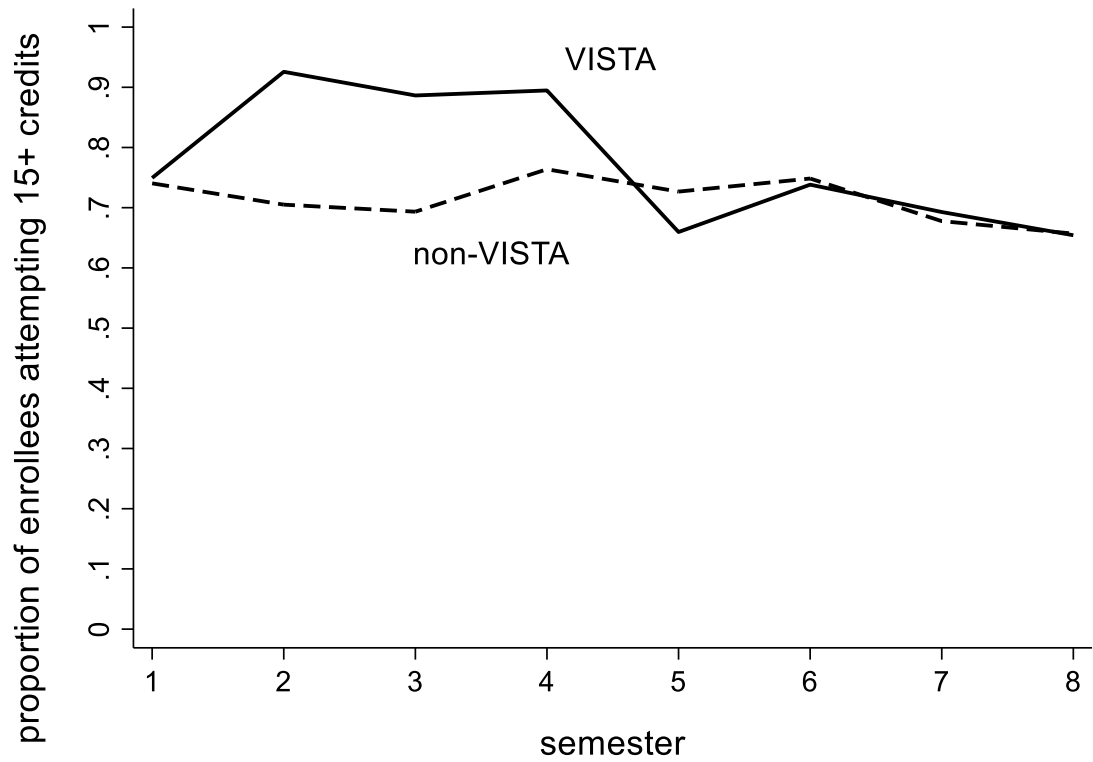
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Table 2. Effects of VISTA on enrollment rates and credit attainment

characteristic	control mean	ATE
year 1		
enrolled in any term during the year (%)	.989	-.006 (.007)
cumulative credits attempted	30.0	.8* (.4)
cumulative credits earned	25.3	.6 (.5)
earned 27+ credits in year 1 (%)	.589	.086*** (.028)
year 2		
enrolled in any term during the year (%)	.823	-.031 (.024)
cumulative credits attempted	54.9	1.4 (1.1)
cumulative credits earned	45.5	1.6 (1.2)
earned 30+ credits in year 2 (%)	.353	.131*** (.028)
year 3		
enrolled in any term during the year (%)	.701	-.002 (.028)
cumulative credits attempted	76.7	1.2 (1.9)
cumulative credits earned	63.7	1.5 (1.9)
earned 30+ credits in year 3 (%)	.361	-.010 (.028)
year 4		
enrolled in any term during the year (%)	.640	-.019 (.029)
cumulative credits attempted	96.3	.8 (2.7)
cumulative credits earned	80.2	1.4 (2.7)
earned 30+ credits in year 4 (%)	.306	.008 (.028)
year 5		
enrolled in any term during the year (%)	.517	-.023 (.031)
cumulative credits attempted	109.5	-.4 (3.3)
cumulative credits earned	91.2	.4 (3.2)
earned 30+ credits in year 5 (%)	.148	-.001 (.021)

Source: UNM transcript data.



*Source:* University of New Mexico transcript data.

Figure 1. Proportion of enrolees attempting 15 or more credits, by semester and treatment status

Table 3. Effects of VISTA on degree attainment

outcome (%)	control mean	ATE
earned degree by end of semester:		
7	.018	.002 (.008)
8	.125	.025 (.021)
9	.225	.054** (.025)
10	.332	.051* (.029)
11	.375	.042 (.030)
12	.432	.034 (.030)
13	.448	.036 (.030)
14	.470	.034 (.031)
sample size (total = 1,081)	545	

*Source:* UNM Office of Institutional Research. Average treatment effects (ATE) are the covariate-adjusted difference between treatment and control groups. A two-tailed t-test was applied to differences between the research groups. Statistical significance levels are indicated as \*\*\* = 1 percent, \*\* = 5 percent, and \* = 10 percent.

Table 4. Effects of VISTA on cumulative credits by income and GPA

characteristic	control	ATE	control	ATE
	mean		mean	
	HS GPA: Top 50%		HS GPA: Bottom 50%	
credits attempted				
year 1	31.4	0.0 (.6)	28.6	1.5** (.7)
year 2	60.2	-.2 (1.5)	49.6	3.3* (1.8)
year 3	86.4	-1.0 (2.6)	66.7	4.0 (2.9)
year 4	109.3	-1.3 (3.7)	82.6	4.0 (4.1)
year 5	123.9	-2.9 (4.5)	94.2	3.4 (5.1)
credits earned				
year 1	28.6	0.0 (.7)	21.8	1.5* (.9)
year 2	53.3	.3 (1.6)	37.3	3.7** (1.9)
year 3	76.0	-.1 (2.7)	50.8	4.2 (2.9)
year 4	96.0	.1 (3.7)	63.5	4.4 (4.0)
year 5	108.9	-1.5 (4.4)	72.5	4.0 (4.7)
earned degree by year 5	.468	.041 (.044)	.189	.064* (.037)

*Source:* University of New Mexico transcript data. Average treatment effects (ATE) are the covariate-adjusted difference between treatment and control groups. Two-tailed t-tests were applied to differences between research groups. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

Table 4. Effects of VISTA on cumulative credits by income and GPA (continued)

characteristic	control	ATE	control	ATE
	mean		mean	
	<u>Family Income: Top 50%</u>		<u>Family Income: Bottom 50%</u>	
credits attempted				
year 1	30.7	-.1 (.7)	29.9	1.1* (.6)
year 2	56.7	-.5 (1.7)	54.6	2.2 (1.6)
year 3	79.3	-1.4 (2.8)	76.5	1.7 (2.8)
year 4	99.3	-2.0 (3.9)	96.2	1.4 (4.0)
year 5	112.8	-3.1 (4.9)	109.8	-.2 (5.0)
credits earned				
year 1	26.3	0.0 (.8)	25.1	.9 (.8)
year 2	47.7	-.1 (1.8)	44.9	2.5 (1.7)
year 3	67.2	-1.5 (2.8)	62.8	2.6 (2.8)
year 4	84.3	-2.1 (3.9)	79.4	2.7 (3.9)
year 5	95.8	-3.0 (4.7)	90.6	1.5 (4.7)
earned degree by year 5	.379	.07 (.042)	31.3	6.4 (4.1)

*Source:* University of New Mexico transcript data. Average treatment effects (ATE) are the covariate-adjusted difference between treatment and control groups. Two-tailed t-tests were applied to differences between research groups. Statistical significance levels are indicated as: \*\*\* = 1 percent; \*\* = 5 percent; \* = 10 percent.

Table 5. Effects of VISTA on financial assistance during the first four years

outcome (\$)	control mean	ATE
year 1		
total average financial assistance received	10,335	1,062*** (252.9)
Pell Grant	3,828	-12 (91.9)
state lottery scholarship	2,209	19 (64.8)
VISTA scholarship	0	1,498*** (28.0)
other grants	2,391	-83 (157.3)
loans	1,565	-329** (144.4)
work-study	338	-32 (61.5)
year 2		
total average financial assistance received	8,235	861** (379.3)
Pell Grant	3,006	82 (149.2)
state lottery scholarship	2,197	116 (120.1)
VISTA scholarship	0	1,077*** (36.7)
other grants	1,171	-85 (137.3)
loans	1,449	-265* (146.2)
work-study	406	-65 (74.2)
year 3		
total average financial assistance received	7,680	108 (412.6)
Pell Grant	2,546	-33 (152.0)
state lottery scholarship	2,051	56 (137.9)
VISTA scholarship	0	0 (0.0)
other grants	1,104	19 (147.5)
loans	1,651	112 (179.7)
work-study	327	-46 (67.7)
year 4		
total average financial assistance received	7,142	-129 (428.6)
Pell Grant	2,050	-68 (145.5)
state lottery scholarship	1,840	113 (143.0)
VISTA scholarship	0	0 (0.0)
other grants	970	67 (158.6)
loans	2,027	-211 (202.1)
work-study	255	-31 (61.0)

Table 6. Differences in first semester college experiences

outcome	control mean	ATE
<u>student engagement</u>		
joined student organization or team	.399	-.071 (.055)
number of student activity types joined	.6	-.2* (.1)
joined two or more student activity types	.165	-.079** (.039)
<u>weekly study activities</u>		
number of study activities with weekly participation at least one study activity weekly	2.3 .856	.2 (.2) -.011 (.041)
<u>effort</u>		
typical weekly hours studied	12.4	-.7 (1.1)
finals week hours studied	18.4	-1.6 (1.4)
missed no more than a few classes	.893	.029 (.034)
<u>employment</u>		
worked for pay	43.6	8.3 (5.7)
usual hours worked per week	9.4	3.3** (1.5)
<u>advising</u>		
number of times saw adviser	3.1	1.7*** (.4)
never saw adviser	.043	-.029* (.017)
usual time spent with adviser (minutes)	18.5	-3.3** (1.4)
<u>student reported topic somewhat or very important when meeting with advisor</u>		
general academic requirements and college policies	.911	.027 (.031)
major/career counseling	.822	.064* (.039)
developing my academic plan for UNM	.894	.055* (.029)

*Source:* calculations from online survey of second cohort study participants conducted by University of New Mexico.

Table 6. Differences in first semester college experiences (continued)

outcome	control	ATE
<u>student agreed or strongly agreed with the following statements:</u>		
My adviser provided accurate and reliable information.	.817	.033 (.041)
My advisor helped me take on more responsibility for my academic career.	.570	.133** (.053)
My adviser was approachable.	.833	.057 (.038)
My adviser helped me find the answers to my questions.	.760	.113** (.045)
My adviser considered my personal qualities (abilities, interests, strengths, weaknesses, etc.) when helping me plan my academic program.	.564	.108** (.054)
I am satisfied with the amount of time I spent meeting with my adviser during the past semester.	.689	.139*** (.048)
My adviser helped me connect with other offices and resources on campus.	.547	.012 (.057)
Interactions (meetings, phone calls, emails, etc.) with my adviser were helpful.	.578	.201*** (.053)
I was satisfied with my overall experience with	.726	.120** (.047)
sample size (total = 388)	188	

*Source:* calculations from online survey of second cohort study participants conducted by University of New Mexico.



# Results

- Recap of main findings:
  - VISTA students more likely to meet renewal requirements compared to control group in first two years
  - This translated into shorter time to degree but no meaningful change in 6-year completion rates
  - Effects appear to be driven by students with the lowest academic preparation
  - Treated students took out fewer loans in the first two years of college
  - Students were significantly happier with VISTA's enhanced academic advising

# Conclusions

- Reduced time to degree results in savings to both students and universities
  - Student costs include foregone wages and direct costs of tuition and fees
  - University costs include increased administrative costs due to increased crowding

# Conclusions

- VISTA suggests that tying a heavier course load to financial aid and enhanced advising can make a difference in narrowing income gaps in college graduation
- Cannot know for sure what is driving treatment effects since enhanced advising and additional financial aid are paired together
  - students *may* respond to enhanced advising paired with smaller grant amounts
- Results should encourage other universities to experiment with similar programs

# Conclusions

- Thank you for your time
- Questions?
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