report

Behavioral policy interventions to address education inequality

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abstract

Children from low-income families arrive at kindergarten already behind academically, do not overcome these gaps during the school years, and are much less likely to attend and graduate from college. Many programs aim to help these children before they enter formal schooling, as well as during their kindergarten through 12th grade years and on the road to and through college; too often, though, the services go underutilized. In recent years, behavioral scientists have designed interventions meant to increase participation in such programs. Rigorous experiments have shown that a number of these approaches work well, enabling students to perform better academically and reach higher levels of education. Here, we propose four more interventions that federal agencies should test.

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Core Findings

What is the issue?
Inequality in educational outcomes remains a pressing issue in the U.S., as gaps in academic achievement by family income continue to widen. However, interventions directed into child care and pre-K education, federal student aid, and income-driven loan repayments have demonstrated measurable successes that warrant further attention.

How can you act?
Selected interventions include:
1) Targeting interventions at other federal agencies that reach children, besides the Department of Education
2) Creating a "Quality Child Care and Pre-K Genie" web portal to centralize important information and nudge parents into the best educational choices for their kids

Who should take the lead?
Education policymakers, behavioral science researchers

With some exceptions, existing policies have failed to remedy persistent disparities in educational achievement and the amount of education attained by low- versus high-income children across all ages, from prekindergarten (pre-K) through college. By the time children are 2 years old, gaps in vocabulary development (a factor in later academic performance) are pronounced, with children from more affluent families hearing millions more words than their lower income counterparts.[1,2] Among children born in the early 2000s, gaps in academic achievement by family income were 30% to 40% wider than they were for children born 25 years earlier. And although over half of young people in the top family income quartile earn a bachelor's degree by the age of 25 years, fewer than 10% of their peers from the bottom income quartile do so.

One explanation for these persistent and, in some cases, widening disparities may be too few resources or programs devoted to improving educational outcomes for economically disadvantaged children. At times, however, resources and programs do, in fact, exist but go underutilized. For instance, in communities where low-income families can select schools of higher quality than those to which their children would normally be assigned, a substantial share of eligible families may not opt for the higher quality schools. In schools that offer rigorous courses, such as Advanced Placement classes, academically eligible students from disadvantaged backgrounds may not enroll. Each year, a sizable fraction of college-ready high school seniors does not complete the Free Application for Federal Student Aid (FAFSA)—a requirement for receiving financial aid for college—even though these students would probably qualify for valuable aid on the basis of their family income.

Over the last several years, researchers have designed and rigorously evaluated a wide variety of behavioral strategies that have been proven to increase participation by economically disadvantaged students and their families in programs meant to improve educational outcomes. These interventions have run the gamut in the ages they target and the services they provide—from pre-K children to college students, and from programs that directly educate students to ones that assist with financing. Consider the following examples:

- Sending parents text messages describing concrete activities they could do at home with their preliterate children led to parents engaging in more of such activities and to stronger cognitive performance among children whose parents were randomly assigned to receive the texts.[3]

- Informing parents about assignments their children missed in middle and high school increased parental involvement, student completion of assignments, and student grade point averages several months after the intervention.[4]

- States that changed the default so that all high school students would be required to take a college entrance exam rather than relying on students to voluntarily sign up experienced dramatic increases in the share of students taking the SAT or ACT. In addition, these states saw significant increases in the percentage of students entering 4-year colleges or universities.[5]

- Integrating assistance completing the FAFSA application into the income tax preparation process at H&R Block led to much higher rates of families successfully completing and submitting the FAFSA and, in turn, to higher rates of students receiving need-based federal Pell Grants to help pay for college. The intervention took approximately 8 minutes per family but led to a nearly 30% increase in the share of students who completed at least 2 years of college.[6]

- Sending community college freshmen text messages reminding them to renew their financial aid and offering one-on-one assistance from a financial aid advisor increased the share of students who persisted through their sophomore year of college by nearly 25%.[7]

Also, under the Obama administration, the White House Social and Behavioral Sciences Team (SBST) applied behavioral insights to help more Americans connect to educational resources and opportunities offered through federal educational programs.[8] For example, in a large-scale randomized controlled trial conducted by SBST, borrowers who had missed their first federal loan payment were randomly assigned to receive a behaviorally designed e-mail reminding them that they needed to pay their loans. The e-mail clearly communicated that the borrower had missed a payment, made salient the role of the loan servicer in the loan repayment process, and provided a customized link to each student's loan servicer portal. In absolute terms, the treatment effects were modest—a 0.8 percentage point increase in the share of borrowers making payments within a week following the intervention—but they were nontrivial relative to the control group's payment rate of 2.7%. In a separate experiment, SBST conducted a randomized controlled trial evaluating a messaging campaign to inform borrowers who were delinquent on their payments about income-driven repayment (IDR) options, which allow students to make lower monthly payments when their income is lower. The treatment effects were again modest—an increase of approximately 0.8 percentage point in the share of students applying for IDR options—but, again, the increase was meaningful relative to a control group application rate of 0.2%. Given that failure to repay loans can lead to a variety of negative economic outcomes, steps that facilitate repayment should benefit students.

> “steps that facilitate repayment should benefit students”

Future Opportunities for Behavioral Interventions in Education

The evidence base for the potential of behavioral interventions to improve educational outcomes for disadvantaged children is moderately strong and growing, yet federal agencies could do more to put such interventions into action. For instance, although the majority of states now have Quality Rating and Improvement Systems (QRIS), which provide information about the quality of early child care centers, most states have not invested in robust or behaviorally informed strategies to increase the use of the QRIS information by parents and guardians. At the opposite end of the educational pipeline, upward of 25% to 30% of college students who acquire half of the credits they need to earn a degree withdraw before completing their program.[9] To meet state and federal goals for increased attainment of degrees, institutions are increasingly interested in identifying low-cost strategies to support these students in their efforts to graduate.

We propose four behavioral interventions that the federal government and other organizations could institute to help students and their families navigate complex decisions and make more informed decisions that affect their educational success. (To see which team members proposed each specific recommendation below, see the author note at the end of this article.)

Creation of a "Quality Child Care & Pre-K Genie"

Most experts believe that a key factor in the nation's lack of economic mobility, especially for children whose parents are poor, is the relatively low educational attainment of those children. The difference in educational attainment between poor children and more advantaged children has been increasing in recent years and is thought to result in part from advantaged children attending preschools that are of higher quality than the preschools attended by poor children.[10] Low-income families may not be aware of the long-term benefits of their children attending high-quality early learning centers, and they may struggle to identify the attributes of a preschool that are associated with better outcomes for their children.[11] Although states have expanded the child care and preschool quality ratings they provide, the low visibility and complex presentation of the information may limit its impact on family choices, similar to when kindergarten through

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12th grade (K–12) districts present school-choice information in hard-to-access ways.[12]

We propose that a website containing extensive information about the quality and characteristics of child care and pre-K programs in a local area—a Quality Child Care and Pre-K Genie—be created. The site would address the described problems by making low-income parents more aware of the benefits to children’s development of particular qualities of preschools and give them information about which schools in their area have the qualities they desire and prices they can afford. In particular, the genie would offer easy access to free, up-to-date information on all registered and regulated day care and early learning programs in the user’s geographical area, including information on location, operating hours, quality indicators and ratings, fee schedules, and sources of financial assistance. Although the genie would not provide independent ratings of programs, it would display information from such sources as state quality ratings. The theory of change here is that providing parents with free, easily accessible information on their options will improve their ability to select quality child care centers for their children.[12] In turn, the increase in the use of publicly funded care and in the selection of higher quality options will put pressure on lower quality providers to improve their programs.

Nationwide Implementation of a FAFSA Completion Assistance Program

As we mentioned earlier in this article, a large, multisite, randomized controlled trial of a program that provided personal assistance to families seeking help with their tax returns found that fast and convenient assistance in completing the FAFSA greatly increased the rates of completion and submission of the form.[6] Because of the increased rate of FAFSA submission, the program, which had a 3½- to 4-year follow-up period, also produced sizable increases in the rates of students from low- and moderate-income families enrolling in college and completing at least 2 years of college. Compared with youth in the control group, those in the treatment group

- were 24% more likely to attend college in the first year following random assignment (42.3% of the FAFSA group attended college vs. 34.2% of the control group),
- were 29% more likely to attend college for 2 consecutive years (36.0% of the FAFSA group vs. 28.0% of the control group), and
- spent 20% more time in college over the follow-up period (an average of 13.7 months for the FAFSA group vs. 11.4 months for the control group).

One reason this intervention was so effective was that it greatly minimized the hassle costs associated with completing the FAFSA. It capitalized on the fact that families already had the financial information necessary to complete most or all of the FAFSA at hand and offered assistance with FAFSA from a trained professional during an event—income tax preparation—to which families had already dedicated time. This intervention overcame the tendency that many people have to put off complex and onerous tasks, like FAFSA completion, when information and application procedures are complicated and access to assistance is limited.

There is every reason to expand this intervention without delay; if done effectively, it could produce an increase in college enrollment and persistence by low- and moderate-income students that is of national importance. We propose that Federal Student Aid work with the Internal Revenue Service’s Volunteer Income Tax Assistance (VITA) program and, if possible, with commercial tax-preparation companies—such as H&R Block and Jackson-Hewitt—to both implement the intervention across the United States and ensure that such implementation adheres closely to the intervention’s key features. We also suggest that a randomized controlled trial be embedded in the expansion to determine whether the sizable effects found in the earlier research are reproduced on this large scale and to investigate whether the impact of the intervention varies across different settings and populations.

Saving Students Money on Student Loan Repayment

Only 39% of college students complete their degree within 4 years, and it is not unusual for students to require 6 or more years. The U.S. Department of Education estimates that about one-third of graduates take longer than necessary to complete their degree.[13] This problem is especially consequential for students from low-income families who must borrow money to attend college, because their debt increases for each additional year they take to graduate. Given that the average annual cost of attending a 4-year college is over $20,000, if students have to borrow to cover a sizable portion of this cost, each extra year could add substantially to their monthly student loan repayments. In addition to the direct costs of extended enrollment, students forgo earnings while they remain in school.

It seems likely that students who borrow to pay for their education do not understand the magnitude of the debt burden they are acquiring, in large part because they have little experience with personal finance. Given adolescents' tendency to privilege present demands over future considerations, it may also be the case that students are not sufficiently weighting the future monthly loan payments they incur with each additional dollar they borrow in the present.[14,15] We hypothesize that many students would make efforts to graduate sooner if the financial consequences of extended enrollment were more salient—in other words, if the future financial consequences of present borrowing decisions were made explicit—and if they had access to clear information about how to stay on track for earning their degree on time.[16]

Because responses to information are often sensitive to framing, we propose that the U.S. Department of Education test several formats for messages to send to student borrowers to help them understand the repayment requirements of the loans they are taking on and the additional impact that borrowing still more to cover additional years of education will have on their repayment obligation. The statements would include projections of total borrowing and monthly repayments as well as links to additional financial literacy resources. We strongly encourage the U.S. Department of Education to frame this outreach in terms of students accessing academic and other support resources to reduce the time it takes to complete their degree so as to minimize the unintended consequence of prompting some students to withdraw from school over concerns about their debt burden.

We encourage the U.S. Department of Education to also study the effectiveness of alternative communication channels (e.g., e-mail, paper mail, text messaging) by randomly assigning the delivery mechanism across all pilot study participants. This design would allow analysts to estimate simultaneously the impact of the communication channel and the effect of framing statements with additional information. After a year, findings on enrollment and repayment should be used to inform the design of the full-scale implementation of this intervention.

Streamlining & Framing Borrowers' Income-Driven Repayment Decisions

The U.S. Department of Education has proposed creating a new student loan repayment web portal that would provide a single point of contact for students with Direct Loans from the federal government who have outstanding student debt.[17] The portal will provide an opportunity to test behaviorally informed methods of increasing borrower understanding and uptake of beneficial repayment options. We propose leveraging the portal to help increase awareness and simplify the use of existing IDR options for borrowers with outstanding federal student loan debt. Our proposal consists of two parts.

First, the portal would provide nudges about income-driven repayment options—such as visual representations of potential savings under various IDR options—customized to reflect the circumstances of each specific borrower. For

2 y.o.

age at which vocabulary development becomes pronounced according to differences in a family's income level

39% of college students complete their degree within 4 years

30%

increase in share of kids who completed at least 2 years of college after their FAFSA application was tied into families' income tax preparation “families and children are becoming increasingly saturated with information”

instance, one approach would be to emphasize the potential costs of inaction (a loss framing) when a student fails to actively choose a loan repayment option.[18,19] Another approach would be to highlight information about the choices made by similar borrowers, with the goal of creating a positive social norm around certain repayment options.[20,21] Finally, nudges about IDR repayment options could use goal-based framing and emphasize the specific ways in which borrowers could use the savings they would realize by reducing monthly loan payments.[22,23]

Second, the U.S. Department of Education would collaborate with the Internal Revenue Service to feed income tax data into the new web portal, streamlining verification of income and enriching the calculators to help borrowers make decisions on IDR. This procedure will simplify the loan application process and thereby help applicants overcome a key point of drop-off in IDR applications.[24]

These behaviorally motivated interventions would enhance the impact that centralized communications and collaborations among federal agencies can have on borrower choices and financial well-being.

Guiding Principles

We suggest that, moving forward, the federal government should follow three guiding principles in designing and evaluating future behavioral interventions in education.

One, disseminate behavioral interventions through many agencies that reach children and families rather than focusing on conducting interventions just within the U. S. Department of Education. Of course, the U.S. Department of Education is a logical place to start, but other federal agencies also have programs or resources that directly touch families and their children. The U.S. Department of Housing and Urban Development, for instance, operates housing voucher programs through which it can directly communicate with low-income families, and the U.S. Department of Defense operates various benefit programs that affect soldiers' dependents. Such channels may provide important avenues through which to conduct behavioral interventions, particularly for children early in their educational trajectories.

Two, consider opportunities for intervention throughout the age span, from pre-K through college, rather than focusing solely on post-secondary education. To date, much published work on behavioral interventions aimed at increasing the use of services and programs in education has focused on higher education, although over the last few years a growing number of studies have been conducted in early and K–12 education. We encourage federal agencies to identify and pursue opportunities for behavioral intervention in early childhood education and the K–12 sectors. These efforts could be conducted with the U.S. Departments of Education, Health and Human Services, and Defense.

Three, behavioral designs that extend beyond informational campaigns. We argue for pursuing additional strategies in part because we are concerned that families and children are becoming increasingly saturated with information from various sources. One example would be to change the loan repayment plan default so that borrowers who have selected an income-driven repayment plan are automatically renewed in the plan each year. The current default requires borrowers to actively recertify their participation in income-driven repayment programs on an annual basis.

Conclusion

The White House SBST has shown the way for policymakers to expand the use of nudges in federal programs to increase program effectiveness not only in education but in other realms as well, such as retirement programs and government efficiency. We have attempted to bring outside thinking to the challenge of increasing the range and impact of behavioral interventions the government could undertake to improve the education of students from low-income families. All four of the recommendations we have presented hold solid promise for helping the nation improve the achievements of these disadvantaged children. If successful, these interventions would reduce poverty and increase economic mobility among children from poor families in the long run.

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Ben Castleman and Ron Haskins coordinated the first draft and revisions to the authors' original text. Others provided the first drafts of the following sections: Creation of a "Quality Child Care and Pre-K Genie" (Rebecca Maynard and Philip Sirinides), Nationwide Implementation of FAFSA Completion Assistance Program (Jon Baron), Saving Students Money on Student Loan Repayment (Beth Akers with Ben Castleman), and Streamlining and Framing Borrowers' Income-Driven Repayment Decisions (Susan Dynarski, Damon Jones, Benjamin Keys, and Jonathan Zinman).

references

1. Fernald, A., Marchman, V. A., & Weisleder, A. (2013). SES differences in language processing skill and vocabulary are evident at 18 months. *Developmental Science, 16,* 234–248.
2. Hart, B., & Risley, T. (1995). *Meaningful differences in the everyday experiences of young American children*. Baltimore, MD: Brookes.
3. York, B. N., & Loeb, S. (2014). *One step at a time: The effects of an early literacy text messaging program for parents of preschoolers* (NBER Working Paper No. 20659). Cambridge, MA: National Bureau of Economic Research.
4. Bergman, P. (2013). *Parent-child information frictions and human capital investment: Evidence from a field experiment*. Retrieved from http://www.columbia.edu/~psb2101/BergmanSubmission.pdf
5. Hurwitz, M., Smith, J., Niu, S., & Howell, J. (2014). The Maine question: How is 4-year college enrollment affected by mandatory college entrance exams? *Education Evaluation and Policy Analysis, 37,* 138–159. doi:10.3102/0162373714521866
6. Bettinger, E. P., Long, B. T., Oreopoulos, P., & Sanbonmatsu, L. (2012). The role of application assistance and information in college decisions: Results from the H&R Block FAFSA experiment. *Quarterly Journal of Economics, 127,* 1205–1242.
7. Castleman, B. L., & Page, L. (2016). Freshman year financial aid nudges: An experiment to increase FAFSA renewal and college persistence. *Journal of Human Resources, 51,* 389–415.
8. Subcommittee on the Social and Behavioral Sciences Team. (2015). *Social and Behavioral Sciences Team annual report*. Washington, DC: Executive Office of the President, National Science and Technology Council, Office of Science and Technology Policy.
9. Mabel, Z., & Britton, T. A. (2016). *Leaving late: Understanding the extent and predictors of late college departure*. Retrieved from https://scholar.harvard.edu/zmabel/publications/leaving-late-understanding-extent-and-predictors-college-late-departure
10. Cascio, E. U., & Schanzenbach, D. W. (2013). *The impacts of expanding access to high-quality preschool education* (NBER Working Paper No. 19735). Cambridge, MA: National Bureau of Economic Research.
11. Bassok, D., Markowitz, A. J., Player, D., & Zagardo, M. (2017). Do parents know "high quality" preschool when they see it? (EdPolicyWorks Working Paper No. 54). Charlottesville, VA: EdPolicyWorks.
12. Hastings, J. S., & Weinstein, J. M. (2008). Information, school choice, and academic achievement: Evidence from two experiments. *The Quarterly Journal of Economics, 123,* 1373–1411.
13. U.S. Department of Education, National Center for Education Statistics. (2012). Table 376. Percentage of first-time full-time bachelor's degree–seeking students at 4-year institutions who completed a bachelor's degree, by race/ethnicity, time to completion, sex, and control of institution: Selected cohort entry years, 1996 through 2005. *Digest of Education Statistics, 2012.* Retrieved from https://nces.ed.gov/programs/digest/d12/tables/dt12_376.asp
14. Casey, B., Jones, R. M., & Somerville, L. H. (2011). Braking and accelerating of the adolescent brain. *Journal of Research on Adolescence, 21,* 21–33.
15. Thaler, R. H., & Benartzi, S. (2004). Save More Tomorrow: Using behavioral economics to increase employee saving. *The Journal of Political Economy, 112,* 164–187.
16. Bound, J., Lovenheim, M. F., & Turner, S. (2012). Increasing time to baccalaureate degree in the United States. *Education Finance and Policy, 7,* 375–424.
17. Mitchell, T. (2016, April 4). A new vision for serving student loan borrowers [Blog post]. Retrieved from https://blog.ed.gov/2016/04/a-new-vision-for-serving-student-loan-borrowers/
18. Fryer, R. G., Levitt, S. D., List, J., & Sadoff, S. (2012). *Enhancing the efficacy of teacher incentives through loss aversion: A field experiment* (NBER Working Paper No. 18237). Cambridge, MA: National Bureau of Economic Research.
19. Levitt, S. D., List, J. A., Neckermann, S., & Sadoff, S. (2012). *The behavioralist goes to school: Leveraging behavioral economics to improve educational performance* (NBER Discussion Paper No. 18165). Cambridge, MA: National Bureau of Economic Research.
20. Alcott, H. (2011). Social norms and energy conservation. *Journal of Public Economics, 95,* 1082–1095.
21. Walton, G. M., & Cohen, J. L. (2011, March 18). A brief social-belonging intervention improves academic and health outcomes of minority students. *Science, 331,* 1447–1451.
22. Destin, M., & Oyserman, D. (2010). Incentivizing education: Seeing schoolwork as an investment, not a chore. *Journal of Experimental Social Psychology, 46,* 846–849. doi:10.1016/j.jesp.2010.04.004
23. Schippers, M. C., Scheepers, A. W. A., & Peterson, J. B. (2015). A scalable goal-setting intervention closes both the gender and ethnic minority achievement gap. *Palgrave Communications, 1,* Article 15014. doi:10.1057/palcomms.2015.14
24. Internal Revenue Service. (2012). Automated IRS system helps college-bound students with financial aid application process: Special Edition Tax Tip 2012-08. Retrieved from https://www.irs.gov/uac/automated-irs-system-helps-college-bound-students-with-financial-aid-application-process