What Happens After the Program Ends?

A Synthesis of Post-Program Effects in Higher Education

Michael J. Weiss, Rebecca Unterman, and Dorota Biedzio

MARCH 2021

Some education programs' early positive effects disappear over time. Other programs have unanticipated positive long-term effects. Foundations warn of the dangers of putting too much weight on in-program effects, which "often fade over time." The U.S. Department of Education's Institute of Education Sciences (IES) even has a special funding category dedicated to continued follow-up to explore these issues.

This Issue Focus tackles the topic of post-program effects in postsecondary education, a previously unexamined context. Are in-program effects—that is, the effects observed while the program was active—maintained once the program ends? Do they grow and improve? Or do they fade out?

This investigation capitalizes on two decades of rigorous program evaluations conducted by MDRC, including approximately 25 postsecondary programs, to consider these questions. The programs varied widely in terms of their features (like financial support, advising, learning communities, tutoring, success courses, instructional reforms, and communication campaigns), their duration (lasting from one semester to three years), the populations they served, and their contexts. Each evaluation used a well-executed randomized controlled trial (RCT) design to estimate program effectiveness. RCTs are often considered the gold standard for evaluating program effectiveness.

The results are striking: During the year after these programs ended, effects on academic progress (as measured by credit accumulation, an indicator of progress toward a degree) were consistently maintained. There is no evidence of discernible fade-out after these programs ended, providing encouraging information about the lasting value of many postsecondary programs, as well as the value of evidence collected from ongoing programs. There was also no evidence of post-program growth, perhaps prompting the need for the development of programs that equip students for success beyond their current durations.

HYPOTHESES REGARDING POST-PROGRAM EFFECT TRAJECTORIES

Theorists from various education-related fields have hypothesized what may happen to effects after a program ends. The most prominent set of hypotheses comes from early education researchers, who outline three processes by which program effects may be sustained, grow, or fade over time: development of trifecta skills, "foot-in-the-door" programs, and sustaining environments. Though

NEW YORK
200 Vesey Street, 23rd Floor
New York, NY 10281
Tel: 212 532 3200

OAKLAND
475 14th Street, Suite 750
Oakland, CA 94612
Tel: 510 663 6372

WASHINGTON, DC
750 17th Street, NW, Suite 501
Washington, DC 20006

LOS ANGELES
11965 Venice Boulevard, Suite 402
Los Angeles, CA 90066

www.mdrc.org

initially developed around a different transition point, these theories may also apply to postsecondary post-program effects. Trifecta skills, in a college-level context, may be fostered by something like a student success course that teaches study and time management skills as students begin their studies. Those skills are "malleable, fundamental, and would not have developed eventually in the absence of the program." Foot-in-the-door programs, such as providing emergency financial aid, are often helpful during sensitive periods in students' lives to "avoid imminent risks" to dropping out of school or "seize emerging opportunities," to continue postsecondary education. Finally, sustaining environments, like supported entry into a high-quality college or university after a summer bridge program, help students "into high-quality environments that support their continued growth."

MAINTENANCE OF EFFECTS AFTER POSTSECONDARY PROGRAMS END

This investigation, examining what happens to program effects after a postsecondary education program ends, relies on a unique database, known as The Higher Education Randomized Controlled Trials (THE-RCT), explained in Box 1.

Box 1

The Higher Education Randomized Controlled Trials (THE-RCT)

The cornerstone of THE-RCT is a restricted access file (RAF) containing de-identified student-level data from 31 of MDRC's higher education randomized controlled trials (RCTs), involving 45 institutions and 67,400 students. Data include demographics (such as gender and race and ethnicity), outcomes (such as enrollment, credits earned, and credentials), and study-related variables. The programs range from "light touch" interventions to comprehensive interventions, with varying durations (one semester to three years), targeting various populations and contexts. Several of the studies had multiple intervention arms, meaning the RAF includes 41 unique programs.

How to access the RAF: The data are available to qualified researchers who have obtained access through the University of Michigan's ICPSR.

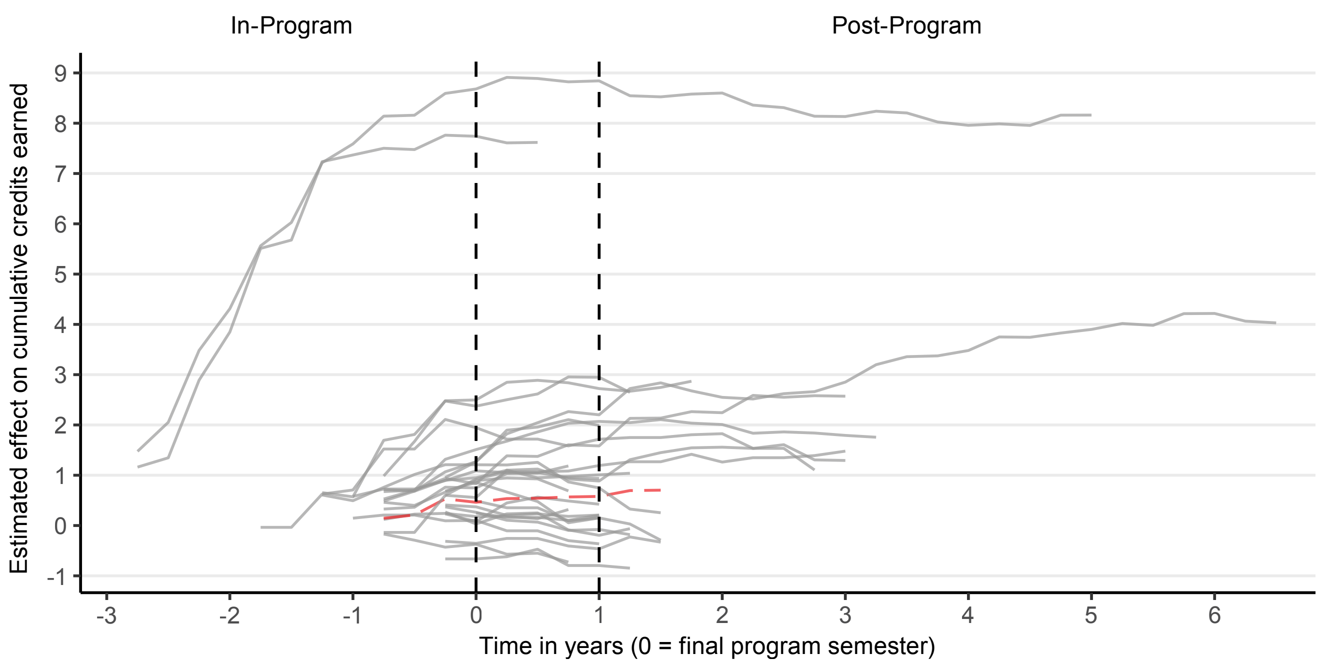
THE-RCT also includes several free, publicly available documents:

- THE-RCT: RAF User's Guide—describes the data, processing rules, and variable naming conventions.
- THE-RCT: RAF Codebook—includes a list of the RAF variables, variable definitions, variable availability by RCT, and timing of outcome data availability.
- THE-RCT: RCT-level Database—provides a list of the RCTs in the RAF, summary information about each RCT, and a list of the colleges that participated in the RCTs.

How was the RAF used in this Issue Focus: This Issue Focus capitalizes on nearly all the RCTs in the RAF and four RCTs not in the RAF (because RCTs conducted at the City University of New York are not currently part of the publicly accessible RAF). In total, six RCTs were excluded because the follow-up did not extend post-program or no comparable outcome measure existed. Also, two RCTs had multiple intervention arms that were analyzed as separate programs. The analyses may be replicated using SAS software (code available upon request) and THE-RCT: RAF.

Figure 1 presents findings from each of 29 unique programs represented in the database for THE-RCT. The y-axis represents the estimated effect of the program on cumulative credits earned, an indicator of progress toward a degree measured by nearly all of the studies in the database. These effects refer to the average number of additional credits students earned because of the program—credits they would not have earned in the absence of the program. The x-axis represents time in years, centered around the final program semester. Negative time values (zero included) are "in-program" semesters. Positive time values are "post-program" semesters, the emphasis of this Issue Focus. Since most studies have at least one year of post-program follow-up, that time frame is highlighted—that is, the time between the two vertical dashed lines.

Figure 1. Effects on Credits Earned over Time Across RCTs of 29 Programs



Source: MDRC calculations using data from John Diamond, Michael J. Weiss, Colin Hill, Austin Slaughter, and Stanley Dai, "The Higher Education Randomized Controlled Trial (THE-RCT)" (Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 2003-2019). Accessed 2021-03-10. https://doi.org/10.3886/ICPSR37932.v1.

Note: The horizontal dashed red line highlights an evaluation of the Opening Doors program, described in the text.

To determine the extent that program effects are maintained, grow, or fade out after the program ends, it is helpful to start by looking at the estimated effect at the end of the program (that is, the vertical line at time = 0) and compare it to the estimated effect at a later post-program time point. If the two values are similar, effects were maintained, while large increases represent evidence of growth and large decreases represent evidence of loss or "fade-out."

For example, the red dashed line in Figure 1 highlights an evaluation of the Opening Doors program in Ohio. This program offered students from low-income families attending Lorain County Community College and Owens Community College enhanced advising services and a modest stipend for two semesters. At the end of two semesters, students who were offered the enhanced advising and stipend had a 0.46 credit advantage over their control group counterparts who were not offered these additional services. One year after the program ended, that advantage remained similar—students who were offered the program were a total of 0.58 credits ahead of their control group counterparts. The +0.12 increase in credits earned is neither substantively meaningful nor statistically significant, implying that the effects observed during the program period were maintained one year after the program ended.

The post-program findings from the Opening Door's enhanced advising evaluation exemplify the overall pattern of findings across the programs examined—on average, across all programs with at least one year of post-program follow-up, the effect on cumulative credits earned at the end of the program remained about the same one year later. Specifically, when pooled across all studies, the change in the effect on cumulative credits earned during the first post-program year is just +0.02 credits. This change is neither substantively meaningful nor statistically significant. This means that, for the typical program, however many additional credits students earned during the program, because of the program, this number was basically the same one year later. At the two-year mark (for those studies where data are available), results were largely the same.

The overall finding that effects on credits earned were maintained one-year post-program could, in theory, mask differences among programs. As noted above, the studied programs varied widely in terms of their in-program effectiveness, their features, their duration, the populations they served, and their contexts—factors that could influence what happens after the programs' end. Surprisingly, despite these many differences, in practice, the evidence points to a consistent pattern of post-program maintenance of effects in every study.[1] There simply is not clear evidence of post-program growth—that is, improved effects—or fade-out, for any of the programs examined.

CONCLUSION

The finding that effects on credit accumulation are broadly maintained after postsecondary programs end should encourage education reformers concerned about fade-out. While in-program effects are sometimes important on their own, benefits maintained into the future are especially powerful.

Some important points are worth noting:

First, the above analyses focus on a single outcome—cumulative credits earned. While that outcome is an important indicator of academic progress, it is not the only important one targeted by postsecondary programs. Exploring other outcomes, like enrollment, grade point average, or degree completion, is an area ripe for future research.

Second, while post-program maintenance of effects is better than fade-out, growth would be even better. This Issue Focus begins the conversation—did the programs included in the analyses presented here intend to affect skills that should continue to serve students after the program period ended? Were the components designed to affect such skills well-implemented? If so, program developers should consider whether they need to further bolster those skills, or address other skills, to achieve post-program growth. Are there programs with rigorous evidence of effects that grow after a program ends? If so, what program features help foster that growth?

This Issue Focus is the first in a series of papers that are part of THE-RCT project. Other papers will examine:

- Which program components (for example, enhanced advising or increased financial support) are associated with larger improvements in student success?
- What magnitude of improvements in student success can various higher education programs reasonably expect to achieve?
- How well do short-term effects predict long-term effects?

1 A test for variation in effects across programs yields $\chi^2(24) = 16.0$; $p = 0.888$.

Like the analyses presented here, these questions will be examined using an exciting new resource available to postsecondary researchers—a restricted access file with de-identified, student-level data from 26 out of the 31 postsecondary RCTs that MDRC has conducted since 2001, as shown in Box 1. Ultimately, MDRC hopes that this database will inspire new scholarship on these and other topics that will help improve outcomes for low-income, underrepresented, and underprepared students, who have long been a focus of MDRC's higher education studies. To learn more about The Higher Education Randomized Controlled Trials (THE-RCT) database and how to access it, visit **https://www.icpsr.umich.edu/web/ICPSR/studies/37932** or contact **michael.weiss@mdrc.org**.

ACKNOWLEDGMENTS

Funding for The Higher Education Randomized Controlled Trials (THE-RCT) project and this Issue Focus was provided by the Institute of Education Sciences, U.S. Department of Education, through grant R305A190161 to MDRC. Opinions expressed are those of the authors and do not represent views of the Institute or the US Department of Education. The database for THE-RCT was created with additional support from Arnold Ventures.

Dissemination of MDRC publications is supported by the following organizations and individuals that help finance MDRC's public policy outreach and expanding efforts to communicate the results and implications of our work to policymakers, practitioners, and others: The Annie E. Casey Foundation, Arnold Ventures, Charles and Lynn Schusterman Family Foundation, The Edna McConnell Clark Foundation, Ford Foundation, The George Gund Foundation, Daniel and Corinne Goldman, The Harry and Jeanette Weinberg Foundation, Inc., The JPB Foundation, The Joyce Foundation, The Kresge Foundation, and Sandler Foundation.

In addition, earnings from the MDRC Endowment help sustain our dissemination efforts. Contributors to the MDRC Endowment include Alcoa Foundation, The Ambrose Monell Foundation, Anheuser-Busch Foundation, Bristol-Myers Squibb Foundation, Charles Stewart Mott Foundation, Ford Foundation, The George Gund Foundation, The Grable Foundation, The Lizabeth and Frank Newman Charitable Foundation, The New York Times Company Foundation, Jan Nicholson, Paul H. O'Neill Charitable Foundation, John S. Reed, Sandler Foundation, and The Stupski Family Fund, as well as other individual contributors.