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Five Principles for Reforming Developmental Education

A Review of the Evidence

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Executive Summary

At community colleges and many public four-year institutions, developmental education (sometimes called remedial education) has been a central feature of the broad-access mission. Developmental courses in reading, writing, and math have traditionally been offered in multi-semester prerequisite sequences to be completed by some students before they take college-level courses in the same subject area. The idea was that developmental education would help students considered underprepared for college-level coursework to become more successful at college. But numerous descriptive and causal studies have shown that this system of multi-semester prerequisite developmental education hinders academic progress for large numbers of students and has disproportionately negative effects on students of color and low-income students. Over the past decade, partly in response to such findings, policymakers, educators, and administrators in community colleges and other broad-access postsecondary institutions have focused on reforming developmental education practices, including how students are assessed as needing additional academic support. More than half of U.S. states now mandate or recommend developmental education reforms. Concurrent with widespread changes in practice, researchers have engaged in efforts to study and evaluate interventions that colleges have undertaken to improve outcomes of students traditionally referred to developmental education.

In this report, we review both impact and implementation studies published between 2010 and 2022 with the goal of summarizing what is known about how innovations to developmental education can improve student outcomes. We look across this body of evidence to draw out five principles that are key for colleges that want to engage in developmental education reform, and we describe embedded implementation lessons in the discussion of each principle. This approach acknowledges that institutions may not be able to replicate an intervention exactly as it was studied and that high-quality implementation is critical to success and sustainability. In addition, we consider how well developmental education reforms are working for students traditionally underserved in higher education, including students who are Black, Latinx, and from low-income backgrounds, and students with greater academic needs. Throughout our review, we rely primarily on 17 experimental and quasi-experimental studies of innovative developmental education interventions that meet rigorous research standards. To contextualize our analysis, we also draw on broader developmental education literature, including implementation studies, cost studies, theoretical scholarship, and state policy analyses.

Principle 1. Grant students access to college-level math and English courses.

Evidence suggests that many more students would successfully pass introductory college-level courses if they avoided prerequisite developmental courses altogether and were instead granted direct access to college-level courses in their first term of college enrollment, with additional support provided for some students. One common strategy to increase access to college-level courses is to use multiple measures, including high school GPA, instead of standardized test scores alone to assess incoming students and assign them to developmental or college-level

courses. In two recent random assignment studies, students who were bumped up into college-level courses through multiple measures assessment were more likely than comparison students to complete a college-level math or English course within three terms (Barnett et al., 2020; Cullinan & Biedzio, 2021). Similar patterns emerge in rigorous research on corequisite approaches that allow students traditionally assigned to remediation to enroll instead in college-level courses with additional support (Logue et al., 2019; Miller et al., 2022). Because increasing access to college-level courses may require significant changes to the way colleges do business, institutions pursuing such a strategy may need to engage faculty and staff early in the planning process, build trust, and shift mindsets to support successful and sustainable reform.

Principle 2. Provide targeted and tiered supports to address students' academic and nonacademic needs.

As colleges undertake strategies to increase access to college-level courses among incoming students, evidence suggests that they should offer concurrent targeted and tiered support services for students with weaker academic preparation and with other, nonacademic needs. These services may include pre-college programs, corequisite support courses, embedded tutoring, and high-touch advising. Multiple measures assessment that considers cognitive and noncognitive skills of students can help to identify students who will benefit from these services. A targeted and tiered support structure implies that some students may need fewer services and others more. To be successful in college, students need strong literacy and numeracy skills. They also need to develop productive academic and nonacademic habits and behavior. Two experimental studies in our review (Martinson et al., 2021; Weiss et al., 2021) found that innovative programs with multifaceted supports and thoughtfully designed curriculum and instruction—I-BEST and CUNY Start—had positive effects for lower scoring students. The Integrated Basic Education and Skills Training program, developed by Washington State's Board for Community and Technical Colleges, features a team-teaching approach in the classroom: Basic skills instructors and technical faculty jointly design and teach college-level occupational courses that lead to postsecondary credentials. CUNY Start, a one-semester pre-matriculation program at the City University of New York, uses innovative curriculum and instruction as well as advising and other supports to improve student outcomes.

Principle 3. Employ contextualized curriculum and student-centered pedagogy.

Our review points to the value of two instructional features that support student learning and success: contextualized curriculum and student-centered pedagogy. A contextualized curriculum, often lacking in traditional developmental courses, engages students in authentic literacy and numeracy tasks like those they will encounter throughout college, foregrounding higher level competencies that students need to master to be successful in college-level courses and beyond. Student-centered pedagogy refers to the design of classroom activities

in ways that help students contribute ideas, discuss concepts, and justify their thinking. CUNY Start, described above, provides an example of both contextualized curriculum and student-centered pedagogy. An experimental study of CUNY Start (Weiss et al., 2021) found much stronger short-term math outcomes among program versus control group students, suggesting that these instructional features are particularly important in math. To introduce contextualized curriculum and student-centered pedagogy, institutions must invest in resources and professional development for faculty.

Principle 4. Use equity-minded approaches for design and implementation.

Given that students of color and low-income students are more often assigned to traditional developmental education and thus disproportionately affected by its negative impacts, efforts to improve developmental education for all students can disproportionately benefit underserved students. Research on state-level reforms in California and Florida has shown encouraging trends. After undertaking reforms that increased access to introductory college-level courses among incoming students, gaps in college-level course enrollment and completion between Black, Latinx, and White students in these two states narrowed considerably (Mejia et al., 2020; Park-Gaghan et al., 2020). At the same time, analysis has shown that students from traditionally underserved groups may be less likely to gain access to reformed course structures (Hern et al., 2020; Schudde & Meiselsman, 2019). What is more, universal reforms do not address classroom experiences that may serve to discourage students from particular groups. Engaging in culturally affirming classroom strategies and those that strive to build a sense of confidence and belonging among underserved students may be particularly useful in closing gaps in course performance (Brady et al., 2020; Buck et al., 2021; Miller-Cotto & Lewis, 2020). Unless reforms consider the needs of particular student groups, even interventions with beneficial effects may be unlikely to close gaps in student outcomes. Therefore, institutions should seek to identify and address institutional- and classroom-level structures, policies, and practices that create or maintain racial or economic inequities in access to and completion of introductory college-level courses.

Principle 5. Implement developmental education reforms alongside comprehensive, sustained supports to improve long-term outcomes.

While discrete reforms to developmental education may improve completion of introductory college-level courses, few interventions have been shown to increase long-term outcomes such as graduation. Implementing developmental education reforms alongside comprehensive supports that span students' entire time in college is likely necessary to move the needle on college completion. A growing body of evidence suggests that reforms that address multiple barriers to student success and that support students throughout their entire time in college can have a substantial impact on important outcomes such as degree attainment. One example is the City University of New York's Accelerated Study in Associate Programs (CUNY ASAP), a

multifaceted program that provides full-time students with advising, financial, and academic support for three years. A random assignment evaluation (Scrivener et al., 2015) found that the program nearly *doubled* the three-year graduation rate for students in developmental education. Another comprehensive approach to student success is guided pathways (Community College Research Center, 2021)—a popular whole-college reform strategy that emphasizes well-structured programs of study, student goal-setting and academic planning, and enhanced advising to help students begin and stay on a clear path to graduation and career.

The Costs of Reform

Among the 17 rigorous studies of developmental education reform included in this review, eight included a cost analysis. The most cost-effective interventions, such as multiple measures assessment, were also the least expensive. Low-cost interventions that produce benefits for students may be a good place for colleges to start when considering how to invest resources; however, investments in higher cost interventions may be necessary to achieve substantial improvements in long-term student outcomes. More cost-effectiveness research is needed on interventions and strategies such as corequisite support courses and granting students direct access to college-level courses without support.

Future Research

In addition to deriving the five principles of developmental reform outlined above, we use this review to identify particular areas in which having stronger evidence is essential for guiding future reform efforts. The field needs research that uncovers specific policies and practices in institutions and classrooms that serve as barriers to racially minoritized students, and it needs evaluations of interventions that are designed and implemented in race-conscious, equity-minded ways. In addition, more knowledge is required on how to support students with greater academic and nonacademic needs so that they can be successful in college-level courses. Other areas for future research include the costs of implementing effective reforms, approaches to pair developmental education with longer-term supports to improve graduation rates, guided self-placement, and online instruction.

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