Adoption and Adaptation:
A Framework for Instructional Reform

The success rates of students referred to developmental education speak for themselves—too few students make it to college-level courses, much less complete college. State policymakers, the philanthropic community, and individual colleges have attempted to address this issue through reforms in developmental math, reading, and English that vary in structure and scale. Some colleges pilot a few sections with an innovative course structure; others embark on a complete redesign of their developmental course offerings. Although some of these reforms have gained national attention, many remain relatively unknown.

In 2011, the Community College Research Center (CCRC) conducted a national scan of instructional innovations in developmental education. In addition to cataloging existing innovations, we inquired about the processes by which colleges undertake reform. Based on what we learned from this scan and from ongoing fieldwork at partner colleges,[1] we have developed the "Adoption and Adaptation Framework" for instructional reform.

This preliminary framework consists of three key elements. The first two—diagnosing student needs and identifying an intervention that aligns with those needs—fall under a process we call adoption. The third—creating collaborative structures for ongoing data-informed refinement—is part of the process of adaptation. The Adoption and Adaptation Framework rests on the conviction that no innovation can result in significant student gains without continuous attention to the *process* of implementation.

Trends in Developmental Education Reform

In the course of our scan, we cataloged over 60 innovations in math, reading, and English. The scan focused only on instructional innovations; reforms that did not have a direct connection to classroom teaching and learning, such as alterations in assessment and placement practices, were not included. While our review is by no means exhaustive, it suggests that the majority of instructional reforms fall into four broad categories: boot camps, compressed courses, learning communities, and computerized modular learning.

These innovations represent four relatively diverse approaches to improving outcomes for developmental students. Boot camps are designed to prepare students to take or retake placement exams. Typically they are brief, intense courses that last one or two weeks and require 20 or more hours of instruction. Learning communities create cohorts of students that take two or more courses together; they often link a developmental course with a student success course or another college-level course. Compressed courses allow students to progress through their developmental sequence more quickly by taking two or more courses in one semester. Finally, computerized modular innovations frequently use software to supplement—or, in some cases, largely replace—instructor-led classroom teaching.

To understand a subset of these innovations more deeply, we conducted interviews with 29 administrators and faculty members and visited classrooms at six colleges. We found that faculty, departments, and administrators are earnestly engaged in efforts to improve developmental education. Unfortunately, despite the widespread appeal of these reform models, empirical evidence suggests that these popular approaches have resulted in only modest, short-term gains in academic progress.[2]

Many practitioners with whom we spoke were aware that their approaches were yielding negligible outcomes and eagerly asked which reform would significantly improve the academic success of developmental

students. We argue that no single model is likely to result in substantial gains in student achievement unless attention is paid to aligning what happens in the classroom with the identified needs of students.

Prioritizing the *How* and *Why* of Implementation

While there is little definitive evidence on why popular reforms have not resulted in larger gains for students, our research suggests there is a tendency to overlook key considerations when adopting reforms. In particular, colleges often fail to fully identify the challenges students face, to think through which reform model can best address these challenges, and to consider how they might implement and refine a given reform in order to maximize student learning, progression, and success.

The lack of attention to these critical questions stems from a number of factors: an organizational culture that lacks strong faculty leadership and collaboration, weak networks for sharing information among institutions and individuals, a shortage of useful mechanisms or tools for identifying student needs, a small supply of well-publicized reform options, and pressure on colleges to reform quickly.

A number of mutually reinforcing circumstances, including financial constraints, state policy mandates, accreditation requirements, government graduation goals, and philanthropic funding priorities, often push colleges to adopt reforms in a reactive rather than proactive fashion. Consequently, faculty and administrators rarely have time to thoroughly evaluate whether a given innovation will address the root cause of low achievement among their students.

For example, faculty members frequently report that students withdraw from classes, even when they are intellectually capable of performing the work. Yet without careful attention to implementation, many popular reforms may not address this challenge. Compressed courses, for instance, allow students to move more quickly through their coursework and thus theoretically reduce opportunities for dropping out. How-

ever, if course content and pedagogy remain the same and are not relevant to students' academic and professional goals, students may continue to disengage.

Learning communities can increase students' comfort and familiarity with the campus and their peers, but if instructors do not coordinate their instruction to contextualize and reinforce skills taught in the paired courses, the benefits for students may be negligible. Computer-mediated reforms allow students to spend more time practicing targeted competencies, but they often rely on a skill-and-drill approach, which may do little to address student motivation, engagement, and conceptual understanding.

As the examples above suggest, our interviews with stakeholders reveal that pedagogical improvement is often de-emphasized in developmental education reform. Additionally, most faculty enter community colleges as disciplinary rather than pedagogical experts; few have had experience examining and refining their classroom practice. Our research suggests that innovations that explicitly try to change pedagogy are the rarest and most challenging to implement. This is in part the result of traditions of faculty autonomy, increased reliance on adjuncts, heavy faculty workloads, and weak in-

ADOPTION AND ADAPTATION
at Pellissippi State Community College

Adoption

• To diagnose student needs, Pellissippi faculty reviewed data on students' course pass rates, performance in subsequent courses, and mastery of identified learning outcomes.

• They designed an intervention that targeted the need they prioritized: enhanced conceptual understanding of math.

Adaptation

• To select the software system for the redesign, faculty designed a semester-long experimental pilot.

• A team of faculty and administrators meet monthly to share successes and address problems in order to continually refine the program.

• Adjunct and full-time faculty participate in professional development each semester to share strategies and improve classroom instruction.

structural leadership. In other instances, departments turn their attention to instruction only after expending considerable energy and resources making changes to course format and content and managing logistical issues (e.g., student registration and classroom space).

While the four dominant models we identified (and likely many others) have the potential to improve student outcomes, prioritizing the *how* and *why* of implementation means considering more than logistics. The Adoption and Adaptation Framework outlines a collaborative, data-informed process designed to continuously improve implementation so the challenges facing students are identified and the innovation is refined to address those needs.

The Adoption and Adaptation Framework

The Adoption and Adaptation Framework focuses on the *process* of implementation. During the adoption phase, colleges identify a subset of students' needs or challenges and select or develop a reform that explicitly addresses these areas of concern. During the adaptation phase, stakeholders review data on an ongoing basis to continuously improve the reform in terms of course format, curriculum, and pedagogical approach.

Our fieldwork suggests that the two phases are cyclical and overlapping and that they can occur within a single college or across networks of colleges instituting similar reforms. To illustrate this framework, we highlight the work of the developmental mathematics program at Pellissippi State Community College in Knoxville, Tennessee.

Adoption

Adoption begins with a process of diagnosis. To identify challenges facing students, colleges will need to collect and review a variety of data, including course pass rates and grade distributions; longitudinal data on student progression across the course sequence and beyond; student performance on specified learning outcomes; data disaggregated by a range of student characteristics (i.e., demographics, placement exam scores); student perspectives on their experiences, collected via focus groups or surveys; and faculty perspectives on the issues.

To fully explore the nature of the challenges facing students, a diverse coalition of college stakeholders—including faculty from multiple disciplines, administrators, student support professionals, institutional researchers, and students—should be involved in this work at all stages. Once the coalition has identified the challenges, it can prioritize which ones to focus on and identify an approach that specifi-

cally aligns with student needs. This process of selection may require members of the coalition to seek out approaches at professional conferences and associations, in research publications, or through informal information networks.

Faculty and administrators at Pellissippi State Community College were concerned about the low pass rates of students in their three levels of developmental math. The college formed a committee to examine student success in subsequent math courses and student mastery of application tasks on course final exams. Based on their review of these data, they prioritized improving students' conceptual understanding of math content.

In 2007, the committee looked to the national professional teaching organizations in mathematics to inform their approach to reform. They found little evidence of the effectiveness of skill repetition and lecture-based approaches to mathematics learning at the developmental level. Instead, the research literature suggested that problem solving and application were promising approaches for enhancing students' conceptual understanding. In response, Pellissippi faculty designed an approach that combines collaborative learning with individual computerized modular practice. The redesigned developmental math program was fully implemented in fall 2008.

Adaptation

After a college has selected an intervention, it must adapt it to meet the needs of its students, the organizational culture, and college policies. The adaptation process will vary across instructors and colleges, but optimal implementation requires a robust support infrastructure to facilitate continuous refinement. Our fieldwork indicates that this work happens through collaboration and the review of a range of data sources, including outcome data and artifacts of classroom practice. For example, faculty may engage in nonevaluative peer observation and collaborative review of curricular materials, assignments, and student work samples. At the classroom level, the continuous refinement process invites experimentation and innovation as instructors try new classroom approaches and document and share their results. Ongoing review of persistence rates, course grades, and student and faculty experiences and perspectives allows departments and institutions to continue to adapt the structure of the reform for optimal results.

During a pilot semester at Pellissippi, faculty tested three different computer programs. At the end of the semester, they compared student pass rates, student proficiency on conceptual test items, and faculty perspectives on the soft-

ware packages. Based on that experiment and their interest in helping students improve conceptual understanding, Pellissippi selected the Cognitive Tutor software package for the lab portion of the course. Since the redesign launched at full scale, faculty and administrators have continued to refine the course format, curriculum, and instructors' pedagogical approaches.

For example, in addition to training for new faculty, the college requires four hours of professional development for returning faculty at the beginning of each semester, during which instructors model lessons that employ a discovery-based approach to conceptual math teaching. Pellissippi has adjusted the number of credit hours, the ratio of classroom and lab hours, and the policies for student attendance. A committee of faculty members continues to meet monthly to discuss the course structure and content, to identify areas that appear to slow student progress, and to review and revise a packet of activities for faculty that includes games, projects, and activities that require students to work collaboratively to discover and explain math concepts.

Investing in Adoption and Adaptation

The Adoption and Adaptation Framework does not presuppose a single best solution to improve the outcomes of students referred to developmental education. Instead, it acknowledges that a variety of approaches can be effective if they are deliberately aligned and refined to meet the needs of the students within a particular context. This alignment and refinement process attends to institutional processes, course format, curriculum, and pedagogy. The framework we propose comes with challenges, not the least of which is finding the time, space, and money to facilitate this ongoing work.

Early findings from the Scaling Innovation project indicate that this type of implementation-focused work inevitably leads to potentially difficult conversations about teaching, learning, and expectations of students and faculty—yet there are clear benefits to investing resources to align and refine a reform. The collaborative process can create a positive professional culture in which stakeholders see the fruits of their efforts to improve student learning and achievement. On the other hand, if colleges do not undertake this process of continual refinement and improvement,

student outcomes will almost assuredly stagnate, and the continual and exhausting search for the non-existent "magic bullet" will commence once again.

[1] See *Inside Out*, Issue 1, Doing Developmental Education Differently.

[2] For example, see Wathington, H., Barnett, E. A., Weissman, E., Teres, J., Pretlow, J., & Nakanishi, A. (with Zeidenberg, M., Weiss, M. J., Black, A., Mitchell, C., & Wachen, J.). (2011). *Getting ready for college: An implementation and early impacts study of eight Texas developmental summer bridge programs*. New York, NY: National Center for Postsecondary Research.

See also Weissman, E., Cullinan, D., Cerna, O., Safran, S., & Richman, P. (with Grossman, A.). (2012). *Learning communities for students in developmental English: Impact studies at Merced College and The Community College of Baltimore County*. New York, NY: National Center for Postsecondary Research.

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