

Enhancing Rigor in Developmental Education

High rates of remediation, low completion rates, and increasing demands for a skilled workforce have made developmental education reform a focus of many community college improvement efforts. Colleges across the nation are restructuring their developmental education programs to strengthen students' academic preparation and accelerate their progression through remediation. However, data from the Community College Research Center's Scaling Innovation project suggest that colleges must do more than revamp course content or course structures to achieve these preparation and progression goals.¹ Colleges must also increase the academic rigor of developmental coursework, moving beyond "skill-and-drill" approaches² to cultivate in students the knowledge, skills, and habits necessary to sustain academic success.

Most developmental education coursework reteaches primary or secondary curricula, with a focus on developing discrete subskills. Instructors generally teach sentence, paragraph, and essay construction separately in writing courses and teach vocabulary, comprehension, and inference separately in reading courses. In math courses, students practice the steps for solving problems but rarely engage with the underlying mathematical concepts. Despite their widespread use, these approaches do not appear to be generating strong and sustained learning outcomes;³ more rigorous approaches are needed to fully prepare developmental students for college-level courses.

Enhancing rigor in developmental education requires practitioners to fundamentally rethink course content and instructional strategies in ways that promote high expectations, depth of understanding, and transfer of knowledge to new settings. High expectations are reflected in challenging course content and tasks that require students to raise questions,

reason, solve problems, communicate, and reflect upon their learning.⁴ Depth of understanding is derived from consistent practice in developing higher order thinking skills and is critical to knowledge transfer. For knowledge transfer to occur, students must not only possess sufficient content knowledge but also understand how, when, and why to adapt and apply that knowledge in novel situations.⁵

Creating a rigorous learning environment is difficult for even the most experienced instructor, and the developmental education context presents a distinct challenge for educators. How can instructors prepare students for college-level courses and beyond when many students enter the classroom with significant knowledge gaps and lack the motivation required for academic success? This issue of *Inside Out* addresses this question by describing how community college faculty are working to increase rigor within reformed developmental education classrooms. We focus on three strategies instructors have utilized to create a more rigorous curriculum and new instructional approaches, and we describe faculty and student experiences with these strategies in developmental courses.

Strategies for Enhancing Rigor in Developmental Courses

Drawing on faculty and student interviews and classroom observation data collected at Scaling Innovation partner colleges, we identified three strategies that faculty across innovations used to enhance rigor in their developmental education courses: (1) aligning content with college-level course expectations, (2) providing consistent opportunities for students to construct knowledge, and (3) making struggle a part of the learning process. These strategies are not mutually exclusive; rather, they work together to contribute to enhanced rigor.

Align Content With College-Level Course Expectations

One of the primary strategies faculty members used to prepare students for the intellectual demands of college coursework was to better align developmental course content with college-level course expectations and the requirements for students' majors. This strategy represents a significant departure from the traditional approach to teaching basic skills courses, in which instructors attempt to reteach K-12 curriculum rather than connecting content to future academic requirements.⁶ Faculty members at the Scaling Innovation partner colleges worked to improve alignment by first identifying the prerequisite knowledge and skills for subsequent courses and then defining new learning outcomes for the developmental courses and creating performance tasks designed to help students develop such knowledge and skills. This process necessitated new curriculum and course structures that streamlined content and improved the vertical alignment between developmental and college-level courses.

One college created a two-level sequence that integrates developmental reading and writing and engages students in activities and assignments that mirror college-level work. Before introducing this sequence, the college offered four levels of basic reading and writing courses in parallel sequences that were designed to help students master discrete skills in writing and reading successively across semesters. In the new integrated sequence, students at both developmental levels write full-length expository essays that summarize and critically respond to nonfiction texts, as is required in many college-level disciplinary courses. Importantly, instructors for these two courses guide and assess students with the same grading rubric that is used in the college-level composition course, with the understanding that performance between the developmental and college levels should vary.

Faculty at this and other Scaling Innovation partner colleges reported that students who took remedial courses in which the learning outcomes and performance tasks were aligned with the college curriculum were better equipped to undertake reading and writing assignments in future academic courses. Though some faculty members were concerned that more difficult reading and writing requirements could dis-

courage students, our findings suggest that the opposite was true. Most students described experiencing increased motivation and engagement with the learning process when they were assigned challenging instructional activities.

Provide Consistent Opportunities for Students to Construct Knowledge

Another common approach to enhancing academic rigor was for faculty to provide consistent opportunities for students to construct knowledge in the classroom. All too often, instruction and assignments in developmental courses are geared toward fact transmission and recall. Such activities do not allow students to practice the problem solving, critical thinking, and communication skills needed to actively engage with and make meaning of content. Activities that encourage knowledge construction, on the other hand, require students to actively build conceptual connections between texts, ideas, and experiences. In classrooms we visited, we observed students engaging in knowledge construction by participating in interactive tasks that explicitly required them to reason, make predictions, consider implications, and develop new content-related questions.⁷

For example, we observed a math instructor incorporate practice of some of these skills into a classroom activity related to designing an experiment. Students in a pre-statistics course were given a two-page handout that contained background information on a study, along with a series of questions related to the experiment. (See the text box for an excerpt from the handout.)

CONSTRUCTING KNOWLEDGE: Excerpt From a Pre-statistics Assignment

Confounding variables are variables that the researcher failed to control, or eliminate. The confounding variables cloud the connection between the explanatory variable and the response variable, making it impossible to establish a causal link between the two.

1. Name one plausible confounding variable in Merrill's experiment. Explain briefly how this variable could confound the results of the experiment if Merrill doesn't intentionally control the effect of the variable.
2. Merrill says that he randomly assigned rats to treatment groups. Describe how he might have done this.
3. Explain how randomization will control the impact of one of the confounding variables that you listed above.

Students were put into small groups and worked collaboratively to answer the questions about the experiment. They drew on a previous lesson that introduced the concept of confounding variables and were expected to connect the information in the handout to their existing knowledge in order to interpret new concepts, such as randomization. The instructor facilitated this process by asking questions, such as: “Did I randomly assign you to groups for the activity today? I asked you to count off from 1 to 7.” Thus, instead of defining randomization at the start of the lesson, the instructor allowed students to hypothesize and debate their understandings of the concept.

The examples of students constructing knowledge that we documented not only demonstrate the ability of developmental students to engage with rigorous content but also underscore the complex pedagogical processes necessary to enable students to become active and confident learners. The questions from the pre-statistics assignment, for example, required students to use higher order thinking skills. Students were not merely asked to describe concepts or define terms but to infer solutions using their intuition and prior knowledge. Assignment prompts alone will not elicit knowledge construction; instructors must also utilize thoughtful scaffolding strategies to guide students through their thought processes and through the struggles they may encounter when undertaking more challenging tasks, as we discuss next.

Make Struggle a Part of the Learning Process

Some faculty members, seeking to enhance rigor, strive to make students wrestle with complex ideas and processes, and capitalize on their misunderstandings in ways that promote in-depth and transferable learning. This process, which has been termed *productive struggle*, occurs when students are “solving problems that are within reach and grappling with key [disciplinary] ideas that are comprehensible but not yet well formed.”⁸ For many faculty members, however, the notion that students should struggle a lot is counterintuitive. They believe that struggle generates frustration that can hurt students’ motivation and impair learning. Students referred to developmental education, who are typically underprepared and who may have tenuous educational histories, are viewed as particularly vulnerable to the potential negative effects of frustration and as less capable of translating struggle into constructive learning.

In our fieldwork at the Scaling Innovation colleges, we observed faculty working diligently in developmental education courses to incorporate instructional activities designed to stretch students’ intellectual capacity. Sometimes, instructors

accomplished this by curtailing the lecture portion of their lessons and not front-loading as much content. In other instances, instructors allowed misconceptions to linger until students identified the errors in their thinking (and the reasons for those errors) and corrected them. In both of these approaches, scaffolding is key to helping students achieve rigorous learning objectives.

In one developmental integrated reading and writing class we observed, students working in small groups were asked to respond to questions about a chapter in the book *Class Matters*, a nonfiction text about social class. The in-class assignment included the following prompt: “Explain what the author means that many people believe that higher education is ‘the great equalizer.’ Does the author believe this? Do you think that education is an equalizer?” These questions seized on subtle differences between what the writer reported and believed, and, as the instructor anticipated, some students struggled to distinguish between the author’s point of view and the counterevidence he used to build his argument. The questions also asked students to construct knowledge by drawing on their own experiences and by coming to a conclusion about the impact of education on social mobility.

Because the instructor recognized the complexities of the subject matter and instructional tasks, she scaffolded student learning in multiple ways. She noted passage topics and page numbers in the handout so that students did not spend valuable time trying to find relevant passages in the text. She also actively circulated among the groups to monitor their progress, addressing misunderstandings by redirecting students to the text and asking them to justify their interpretations. Her pedagogy emphasized discovery on the part of students and rarely involved providing students with the “correct” answer. For example, she worked with one group to define unfamiliar vocabulary using contextual clues in the text. After rereading the relevant passage several times, the group reasoned that the author does not conceive of education as the great equalizer because many more upper-middle-class students attend college than poor students, suggesting that educational advantage may be inherited rather than earned. In drawing this conclusion, students synthesized evidence from the text and their personal experiences in a process characterized by high levels of intellectual exploration and engagement.

The ultimate goal of instructional activities that incorporate productive struggle is for students to develop a healthy disposition toward uncertainty in their pursuit of skills and knowledge that they will later revisit and apply in other contexts. Tasks that require such higher order thinking and problem solving have primarily been reserved for gifted and

talented students rather than students enrolled in remedial coursework. Although it can be challenging for instructors to cultivate a learning environment that encourages productive struggle, findings from the Scaling Innovation project suggest that discovery-based pedagogical approaches are equally fruitful with students perceived as low-skilled and likely generate more engagement and deeper learning than traditional, teacher-centered instruction.

Meeting the Challenges Associated With Enhanced Rigor

Through Scaling Innovation, we have chronicled multiple developmental education reforms that promote the use of college-level academic tasks, knowledge construction, productive struggle, and other instructional approaches associated with increased rigor. However, our data suggest that such approaches can present numerous challenges for faculty and students because they depart so significantly from established practice.

Faculty and students enter developmental education with entrenched expectations about teaching and learning based on their own experiences. New practices that differ from such expectations can generate discomfort for teachers and learners. We found that many faculty members struggled to enact new pedagogies and had a tendency to revert to their customary (i.e., pre-reform, teacher-centered) practices when they encountered challenges. Likewise, it took students time to adjust to higher performance expectations and intellectual demands that required more active participation in their own learning. Among both faculty and students, we observed strategies to reduce the potential negative effects of the challenges presented by rigorous curricula and pedagogies.

Faculty struggled to enact certain instructional strategies, such as allowing students to take the lead in class, which at times tested faculty members' confidence with the new approaches. However, faculty reported that they were able to better manage the day-to-day challenges of adopting a pedagogical reform when they could share their successes, failures, and lesson plans with other colleagues implementing the reform. Their reservations about new approaches were also mitigated by reform leaders, who not only provided targeted support as particular issues arose but also—arguably more important—provided encouragement to not abandon the more rigorous (and thus more pedagogically demanding) activities.

Students were similarly unaccustomed to the significant changes in classroom roles and responsibilities in more rigorous developmental reading, writing, and math courses. Students confessed that they were not used to actively par-

ticipating in class, solving problems, or explaining their reasoning. Given their prior academic experiences, many also interpreted their struggle as a sign of academic weakness rather than a productive behavior that demonstrated perseverance.

To facilitate the transition to more rigorous performance expectations, some faculty we observed introduced to students the idea of a growth mindset versus a fixed mindset at the beginning of the semester.⁹ The premise behind this concept is that intelligence is not fixed and that mental agility is a powerful tool for surmounting personal, professional, and academic barriers. Faculty also provided low-stakes assignments that gave students opportunities to demonstrate, reflect upon, and improve their learning (e.g., quick-writes, journals, and in-class quizzes). These assignments offered faculty varied opportunities to assess student learning and identify possible areas for intervention; they also suggested to students that classroom activities are as much about the learning process itself as they are about new gains in knowledge.

The Case for Enhanced Rigor in Developmental Education and Beyond

Developmental education reforms that are designed to increase rigor challenge a broadly accepted notion that underprepared college students are unable to engage in complex learning tasks and meet high performance expectations. Through Scaling Innovation, CCRC researchers have found compelling evidence to the contrary. Not only are low-skilled and seemingly low-motivated students able to engage in complex learning tasks, but they also report being more involved and becoming more self-directed and confident learners when classroom standards are higher. Moreover, preliminary internal analyses at several colleges indicate that students who complete rigorous courses persist and perform well in subsequent courses.¹⁰

Because it is difficult to enact the pedagogical strategies outlined above, attempts to increase rigor must be accompanied by robust faculty development and supports for students. The benefits of investing in faculty and student supports cannot be overstated, since the lessons learned from enhancing rigor within developmental education can also be applied in efforts to improve teaching and learning throughout the community college.

Endnotes

¹ Edgecombe, Cormier, Bickerstaff, & Barragan (2013); Scaling Innovation (2012).

² Grubb (2012).

³ Hinds (2011); Stigler, Givven, & Thompson (2010).

⁴ Blackburn (2008); Wagner (2008).

⁵ Pellegrino & Hilton (2012).

⁶ Grubb (2012).

⁷ King (1994).

⁸ Hiebert & Grouws (2007, p. 387).

⁹ For more information about the concept of a growth mindset, visit <http://www.mindsetworks.com/>

¹⁰ See Cho, Kopko, Jenkins, and Jaggars (2012) for outcome data on the Community College of Baltimore County's Accelerated Learning Program in developmental English. See Lontz (2012) for outcome data for Montgomery County Community College's Concepts of Numbers developmental math course redesign. See Los Medanos College Statpath (n.d.) for outcome data for the college's pre-statistics pathway.

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The logo for Scaling Innovation features the word "SCALING" in a large, bold, black sans-serif font. The letter "i" in "SCALING" is replaced by a solid orange circle. Below "SCALING" is the word "INNOVATION" in a smaller, bold, black sans-serif font. To the right of "INNOVATION" is a vertical orange bar that ends in a small orange circle at the top, resembling a stylized letter "i".

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