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Rethinking Developmental Education in Community College

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Community colleges are charged with teaching students college-level material, yet a majority of their students arrive with academic skills judged too weak to allow them to engage successfully in college-level work in at least one subject area. Colleges address this problem by providing extensive programs of developmental education designed to strengthen students' skills so they can successfully complete college-level courses.

This Brief, based on a longer paper, reviews evidence on students who enter community college with weak academic skills, and it summarizes study findings on the effectiveness of developmental education. (Note that the terms developmental education and remediation are used interchangeably throughout.) It suggests that, on average, developmental education is not very effective in overcoming student weaknesses. The Brief concludes with recommendations for a broad reform agenda based on a comprehensive approach to assessment, more research that tracks students through their early experiences at college, a blurring of the distinction between developmental and "college-level" students that could improve pedagogy for both groups of students, and strategies to streamline developmental programs and accelerate students' enrollment in college-level courses.

Developmental Assessment

Developmental education assessments are in reality high stakes tests. Failing such tests often leads to remediation, which has high costs for students as well as for community colleges and the public sector. Yet, despite the importance of test outcomes, there is no national consensus about what level of skills is needed to be college ready or about how to assess that level. Although versions of Accuplacer and Compass are the most common, many different tests are used to determine developmental need, even, in some cases, within one state; furthermore, even when the same test is used within a state, institutions are often free to choose their own cutoff scores. Attempts to articulate a comprehensive understanding of what skills and knowledge are needed to succeed in college (see Conley, 2005) highlight the narrowness of the assessments used for remedial placement, which measure only some of the skills needed for a successful college experience. Students who pass the placement assessments may still lack many of the skills and knowledge that are essential for success in college. Indeed, students with similar scores

vary widely in their subsequent academic outcomes.

Developmental education assessments are designed to determine a student's skill level, yet assessment scores may do little to reveal what type of help students need to be successful in college. Students who share the same low score on a mathematics placement test could face very different problems. For example, some students may have learned math successfully but scored poorly because they had been out of school for many years; other students may never have learned in high school the math being assessed; others may have taken the appropriate courses but failed to learn the material nonetheless; still others may be immigrants who had trouble understanding the English used in the math placement test. Each of these four groups of students, all with the same assessment test score, probably needs very different types of services to prepare them to be successful in college-level mathematics.

Participation in Developmental Education

Incidence of Weak Academic Skills

Two different analyses of community college students — one using data from the National Education Longitudinal Study (NELS) (Attewell, Lavin, Domina, & Levey, 2006) and the other (by the author) based on data on more than 250,000 first-time students at colleges participating in the Achieving the Dream: Community Colleges Count initiative — indicate that nearly 60 percent of students take at least one developmental education course during their community college career. While high, this proportion still underestimates the number of students arriving at community colleges with weak academic skills: in some states developmental courses are not mandatory for students with demonstrated skill deficiencies, while in the others, students, professors, and colleges often find ways to exempt students from the courses even if they meet the eligibility requirement for them. Thus it is reasonable to conclude that two thirds or more of community college students enter college with academic skills weak enough in at least one major subject area to threaten their ability to succeed in college-level courses.

Progression through Developmental Education

Students struggle, in particular, with developmental math courses. NELS data show that 68 percent of students pass all of the developmental writing courses in which they enroll and 71 percent pass all of their developmental reading courses, but only 30 percent pass all of their developmental math courses (Attewell et al., 2006).

Students are often referred to a sequence of developmental courses of increasing difficulty in one subject area because their skills are considered to be more than one level below college-entry level. Yet some students never even

begin their developmental course sequence. In the Achieving the Dream sample, one fifth of all students referred to developmental math and one third of students referred to developmental reading did not enroll in any developmental course within three years. Many others failed to complete their sequence. Only 44 percent of those referred to developmental reading completed their full sequence, and only 31 percent of those referred to developmental math completed theirs. Further, the more courses in the referred sequence, reflecting a greater skills deficiency, the more likely students were to fail to complete it.

Degree completion for remedial students is also rare. Less than one fourth of developmental education community college students in the NELS sample completed a degree or certificate within eight years of enrollment. In comparison, almost 40 percent of community college students in the NELS sample who did not enroll in any developmental education course completed a degree or certificate.

The Effectiveness of Developmental Education

Even though developmental education students are less likely than non-developmental students to complete degrees, it is not necessarily true that developmental education itself contributes to worse outcomes or even that it does not improve student outcomes. It is possible that developmental students, who have, on average, weaker skills than other students, would have even poorer outcomes if they did not avail themselves of remedial services. Indeed, some research that controls for entering academic skills and other demographic characteristics has found that developmental students in community colleges do as well as students who never participate in developmental education. Controlling for student characteristics, Attewell and his colleagues (2006) found that students who enroll in developmental reading are more likely to earn a degree, though those who enroll in developmental math were found less likely to do so.

Such studies do not, however, account for unmeasured differences that may exist between developmental and non-developmental students (more motivated students might, for example, find ways of avoiding remediation, thus skewing the results). Several recent studies address this problem. They use large, longitudinal state datasets and quasi-experimental methods to derive more reliable estimates of the effects of developmental education on *those students near the cutoff score* for developmental placement. These include studies of Ohio by Bettinger and Long (2005), of Florida by Calcagno and Long (2008), and of Texas by Martorell and McFarlin (2007).

The studies give mixed results — the Texas and Florida studies suggest students gain little from developmental classes while the Ohio study shows some positive results. Yet, among other limitations, these studies do not provide much insight into the effectiveness of developmental education for students with very weak skills. Moreover, these studies measure the *average* effects of all developmental education offered in a state, which actually represent a broad range of remedial programs and pedagogies.

There is in fact no strong consensus about how to carry out developmental education most effectively. As a result, the content and organization of remediation varies widely. Many in the field argue that assessment should be mandatory and that appropriate counseling and support services should be made available. The use of learning communities to provide developmental education has also

gained wide attention recently, and some researchers are enthusiastic about this practice. An MDRC random assignment study of a learning communities program provides some evidence for its effectiveness (see Scrivener, Bloom, LeBlanc, Paxson, Rouse, & Sommo, 2008). But with the exception of this MDRC study, there is very little research that reliably measures the causal impact of different approaches to remediation. Still, if particular practices really are effective, the disappointing research on the overall effects of remediation suggests that they have not so far been widely adopted.

The Costs of Developmental Education

The modest benefits of developmental services need to be evaluated in relation to their significant costs to the state and the institution, and especially to students. A recent study calculated the annual cost of remediation at \$1.9 to \$2.3 billion at community colleges and another \$500 million at four-year colleges (Strong American Schools, 2008). Reports from various states cite expenditures of tens or hundreds of millions of dollars annually.

Developmental education carries significant financial and psychological costs to students. While in developmental classes, students spend money, accumulate debt, and, in many cases, sacrifice financial aid eligibility. In addition, taking developmental courses lengthens the time required to complete a degree, which has been shown to be a factor in reducing the probability of degree completion (Horn & Nevill, 2006). Moreover, students referred to developmental classes, most of whom are high school graduates, are often discouraged when they learn that they must delay entrance into credit-bearing classes; they may become frustrated and leave college (Deil-Amen & Rosenbaum, 2002). Thus, resistance to remediation may help explain the low enrollment and high attrition rates of developmental students, and it may be a reason why faculty and advisors help students avoid developmental education by using loopholes and exceptions in regulations and guidelines (Perin, 2006).

Discussion and Conclusion

Summary of Findings

The broad picture of developmental education outlined here shows an extensive system that involves thousands of dedicated counselors and professors carrying out a crucial community college function. At the same time, however, the system is characterized by uncertainty, a lack of consensus on either the definition of being college ready or the best strategies to pursue, high costs, and varied and often unknown benefits. This picture is further complicated by the bewildering plethora of remediation assessments and cutoff points used around the country, many of which may have only a weak relationship to subsequent educational performance. Indeed, many students who test out of remediation nonetheless struggle in their college courses, and their educational outcomes are poor. Thus, a sharp distinction in the services received by developmental and non-developmental students is not justified.

Overall, fewer than one half of students who are referred to developmental education complete their recommended sequence. What is more, many students who do complete their developmental courses do not go on to enroll in the associated college-level courses. The evaluation data concerning developmental education are equally

discouraging. Much of the research on developmental education is suggestive but cannot reliably measure the effect of remediation or differentiate among various approaches. The handful of more definitive studies shows mixed results at best.

Although this picture is pessimistic, there are some reasons to temper that pessimism. Findings from Ohio (Bettinger & Long, 2005) and several studies of individual colleges show more positive results. Also, it may be that students make significant progress in developmental education, but their skills still do not reach the college-level standard. Getting a student from a sixth to a tenth grade math level is a significant accomplishment, even if such improvement is not enough to provide a solid foundation for a college education. Finally, the aggregate results found in large studies can obscure strong programs at individual colleges.

Recommendations

The above caveats notwithstanding, it is difficult to escape the conclusion that the developmental function in community colleges is not working well. The analysis presented here suggests some promising areas for exploration and innovation, however. I suggest that any comprehensive strategy to improve the developmental function in community colleges should include a reform and research agenda focused on the following three recommendations:

1. Rethink assessment, focusing on understanding what students need in order to be successful in college rather than simply concentrating on placement within the sequence of a curriculum. Two students with the same score on an assessment test may need different types of assistance to be successful in college-level courses, as evidenced by the weak relationship between test scores and subsequent measures of student success in developmental and college-level courses. Moreover, the blizzard of assessments and cutoff scores suggests that there is no consensus about what constitutes being college ready or how to measure it. The growing national movement for better high school-college alignment may offer a framework within which progress can be made on answering these questions (Achieve, 2006; Kirst & Venezia, 2004).

2. Abandon the dichotomy between developmental and college-ready students for a wide range of students above and below current developmental cutoff scores by opening college-level courses to more students and by incorporating academic support assistance into college-level courses. Current policies on assistance distinguish between developmental and college-ready students as identified by assessment cutoff scores. Yet the discouraging evidence about the effectiveness of developmental education (especially for students who score around the cutoff point), the uncertainty about assessment strategies, and the absence of any clear relationship between student assessment scores and student outcomes, suggest that a policy based on categorizing students as developmental or college-ready is misguided. Students who score even slightly below the cutoff point are asked to spend time and money on services of dubious value, while those who score above it are assigned to college-level courses without special help, even though many of them have weak academic skills.

There are many approaches to incorporating extra support into regular courses. Perhaps the best known strategy — and one demonstrated to be effective for first-

level college courses — is the supplemental instruction model, which relies on peer tutoring (International Center for Supplemental Instruction, 2006). Another approach, used by the Digital Bridge Academy at Cabrillo College in California, draws on a variety of experiential learning and other pedagogic strategies to incorporate learning into the pedagogy of actual college-level courses (Navarro, 2007). This approach, which is consistent with the accelerated learning strategy used in the K-12 sector and which has been found to have positive effects, eschews special programs for weaker students, maintaining that good pedagogy for those students is the same as it is for advanced students (Bloom, Rock, Ham, Melton, & O'Brien, 2001). The principle of dual enrollment or early college is also based on the notion that students benefit from being pushed to achieve at levels that traditionally were not thought to be appropriate for high school students. Preliminary assessments of the effect of dual enrollment on postsecondary outcomes are also encouraging (Karp, Calcagno, Hughes, Jeong, & Bailey, 2007).

3. For those students whose skills are so weak that they could not be successful even in augmented college-level courses, explicitly work to minimize the time necessary to prepare students for entry into those courses. Little is known about the effects of remedial courses on students with very weak skills, although there is evidence that students who are referred to developmental courses two or three steps below college-level rarely complete introductory college courses and are even less likely to complete degrees.

One objective should be to move low-skill students into college-level courses as soon as possible in order to minimize the expense and discouragement associated with remediation. The suggestions outlined above will facilitate this process. In addition, many colleges are now experimenting with accelerated strategies, and the results are encouraging. They include intensive bridge programs in the summer, such as the aforementioned Digital Bridge Academy, which includes a two-week intensive immersion program (Navarro, 2007). Since many students who complete one level of remediation fail to show up for the next level, another simple way to accelerate movement through various levels of remediation is to combine levels or eliminate any elapsed time between levels. At the Community College of Denver, for example, students can combine two levels of developmental math, reading, or writing to accelerate their progress (Baker & Brancard, 2008).

Contextualization of developmental education is another way to engage students and to allow them to make progress in their areas of interest while they are still in remedial classes. Indeed, some research suggests that teaching to adults is more effective when it is linked to meaningful applications (Rubenson & Schutze, 1995).

Growing Interest in Reform

Introducing these and other needed reforms will be an extremely difficult task, but now may be a good time to work on improving the developmental education function of community colleges. The last few years have seen a dramatic growth of interest in the strengthening of weak academic skills of college students. The promising practices discussed above are products of that new interest. Several states, including California, Texas, Tennessee, and Kentucky, are organizing comprehensive initiatives to improve their developmental programs.

In addition, a growing number of private foundations and the federal government have turned their attention to this problem, and as a result colleges all over the country are trying new approaches to developmental education. Developmental education is a core part of Achieving the Dream, a \$100 million initiative, funded by Lumina Foundation for Education and many other funders, to improve student success at 84 community colleges (www.achievingthedream.org). The U.S. Department of Education's Institute of Education Sciences has funded a National Center for Postsecondary Research (NCP, www.postsecondaryresearch.org), whose research is focused mainly on evaluating initiatives (primarily but not exclusively in community colleges) to improve outcomes for students with weak academic skills. The Bill & Melinda Gates Foundation has begun a major initiative designed to improve college opportunities for low-income youth and young adults. All these undertakings illustrate the growing focus on developmental education in policy, practice, and research.

There is also a growing commitment by colleges, state agencies, and researchers to more detailed analysis of student progression through college and to more systematic and rigorous evaluation of program interventions. The recent interest in using state longitudinal unit record datasets provides a tremendous opportunity to increase our understanding of the barriers that students with weak academic skills face. Some of the best research discussed above was based on these state datasets. All of these developments provide an opportunity for a major and much needed effort to rethink and strengthen developmental education.

References

- Achieve, Inc. (2006). *Closing the expectations gap*. Washington, DC: Author.
- Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New evidence on college remediation. *Journal of Higher Education*, 77(5), 886–924.
- Baker, E. D., & Brancard, R. (2008, April). *FastStart at CCD*. Presentation at the Breaking Through Peer Learning meeting, Denver, CO.
- Bettinger, E., & Long, B. T. (2005). Remediation at the community college: Student participation and outcomes. *New Directions for Community Colleges*, 129(1), 17–26.
- Bloom, H., Rock, J., Ham, S., Melton, L., & O'Brien, J. (with Doolittle, F. & Kagahiro, S.). (2001). *Evaluating the accelerated schools approach*. New York: MDRC.
- Calcagno, J. C., & Long, B. T. (2008) *The impact of postsecondary remediation using a regression discontinuity approach: Addressing endogenous sorting and noncompliance* (NCP, Working Paper). New York: National Center for Postsecondary Research.
- Conley, D. (2005). *College knowledge: What it really takes for students to succeed and what we can do to get them ready*. San Francisco: Jossey-Bass.
- Deil-Amen, R., & Rosenbaum, J. (2002). The unintended consequences of stigma-free remediation. *Sociology of Education*, 75(3), 249–268.
- Horn, L., & Nevill, S. (2006). *Profile of undergraduates in U.S. postsecondary education institutions, 2003–04: With a special analysis of community college students (NCES 2006-184)*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- International Center for Supplemental Instruction. (2006). *Supplemental instruction/video supplemental instruction: Annotated bibliography*. Kansas City: University of Missouri-Kansas City, Center for Academic Development.
- Karp, M. M., Calcagno, J. C., Hughes, K. L., Jeong, D. W., & Bailey, T. (2007). *The postsecondary achievement of participants in dual enrollment: An analysis of student outcomes in two states*. St. Paul: University of Minnesota, National Research Center for Career and Technical Education. Also available at <http://ccrc.tc.columbia.edu/Publication.asp?uid=547>
- Kirst, M., & Venezia, A. (Eds.). (2004). *From high school to college: Improving opportunities for success in postsecondary education*. San Francisco: Jossey-Bass.
- Martorell, P., & McFarlin, I. (2007). *Help or hindrance? The effects of college remediation on academic and labor market outcomes* (Working Paper). Dallas, TX: University of Texas at Dallas, Texas Schools Project.
- Navarro, D. J. (2007). *Digital Bridge Academy: Program overview*. Watsonville, CA: Cabrillo College.
- Perin, D. (2006). Can community colleges protect both access and standards? The problem of remediation. *Teachers College Record*, 108(3), 339–373.
- Rubenson, K., & Schutze, H. G. (1995). Learning at and through the workplace: A review of participation and adult learning theory. In D. Hirsch & D. A. Wagner (Eds.). *What makes workers learn: The role of incentives in workplace education and training* (pp. 95–116). Cresskill, NJ: Hampton Press.
- Scrivener, S., Bloom, D., LeBlanc, A., Paxson, C., Rouse, C. E., & Sommo, C. (2008). *A good start: Two-year effects of a freshmen learning community program at Kingsborough Community College*. New York: MDRC.
- Strong American Schools. (2008). *Diploma to nowhere*. Washington, DC: Author. Retrieved October 8, 2008, from <http://www.edin08.com/>

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