datanotes

Keeping Informed about Achieving the Dream Data

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What Is a Cohort?

A *cohort* is a group of people studied over time. The individuals in the group have at least one statistical factor — such as when they started college — in common.

The Achieving the Dream 2002 student cohort is the group of credential-seeking students that attended Achieving the Dream institutions for the first time in fall 2002. This cohort will be tracked until 2008.

Tracking a cohort over time makes it possible to compare the progress and outcomes of different groups of students (e.g., groups defined by race, age or other demographic characteristics) and to determine if there are gaps in achievement among groups of interest.

Developmental Math Students and College-Level Coursework

Among developmental education subjects, mathematics typically is the largest stumbling block for incoming students: More students are referred to developmental math than to developmental reading and English, and fewer students complete their coursework in developmental math than in other subjects. Further, persistence rates for students needing developmental education — in any single subject or in multiple subjects — are lower than rates for students who do not need developmental education.[1] But there is little research on the success of students who fulfill their developmental education requirements: Do these students continue in college-level coursework, obtain their desired credentials, transfer to four-year institutions or leave college without attaining their goals?

At its core, Achieving the Dream seeks to help more students reach their individual goals, which may include earning a community college certificate or associate degree, earning a bachelor's degree, or landing a better job. To attain these goals, students must reach certain milestones. For students needing developmental education, one such milestone is successfully completing developmental education requirements and advancing to credit-level courses.

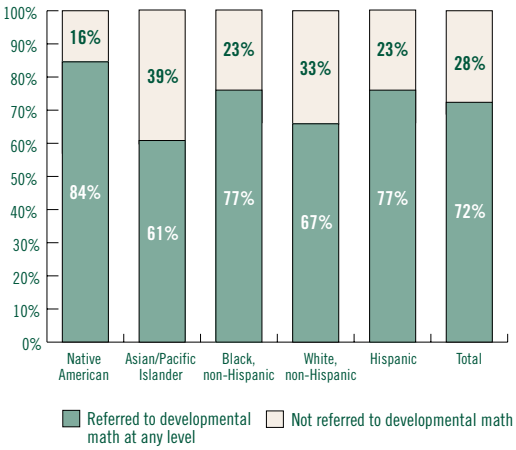
The following analysis examines students who require developmental math, including whether they successfully complete their required developmental math classes, continue on to college-level mathematics and complete those classes. This analysis uses the Achieving the Dream 2002 cohort. Thirty-five of the 58 Achieving the Dream institutions have participated in the initiative long enough to provide cohort data.

> *"Overall, 72 percent of the 2002 Achieving the Dream cohort was referred to developmental math."*

Developmental Math Referrals and Coursework Completions

Overall, 72 percent of the 2002 Achieving the Dream cohort was referred to developmental math[2] (Figure 1).[3] Larger percentages of Hispanic, black and Native American students were referred to developmental math than were white students (77 percent of Hispanic and black students and 84 percent of Native American students versus 67 percent of white students).

Figure 1. Who was referred to developmental math by race/ethnicity



These data represent the 69 percent of Achieving the Dream students for which institutions reported developmental math referrals. The total number of students is 50,298, of which 36,246 were referred to developmental math.

As shown in Figure 2, by the end of the third year, nearly one quarter of students referred to developmental math completed their developmental math requirements. The majority of those completing (18 percent) did so during their first year. However, the vast majority of students referred to developmental math — 77 percent — neither attempted nor successfully completed this coursework by the end of the third year.

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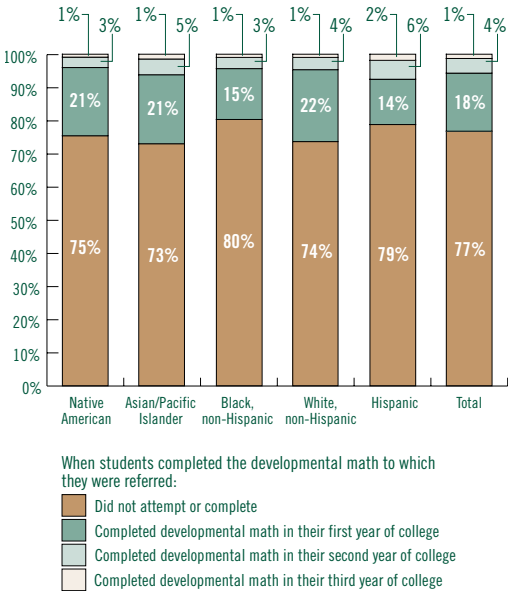
[1] Lewis, L., and Farris, E. *Remedial Education at Higher Education Institutions in Fall 1995* (NCES 97-584). Washington, DC, 1996: U.S. Department of Education, National Center for Education Statistics. Available: http://nces.ed.gov/pubs/97584.pdf.

[2] Data reported herein may vary slightly from statistics reported in previous issues of *Data Notes*. This variation exists because new colleges and their data are added to the initiative every year, and current colleges update their data as they receive new or more accurate information.

[3] Based on the 69 percent of Achieving the Dream students for which institutions report developmental math referrals.

ACHIEVING THE DREAM COMMUNITY COLLEGES COUNT

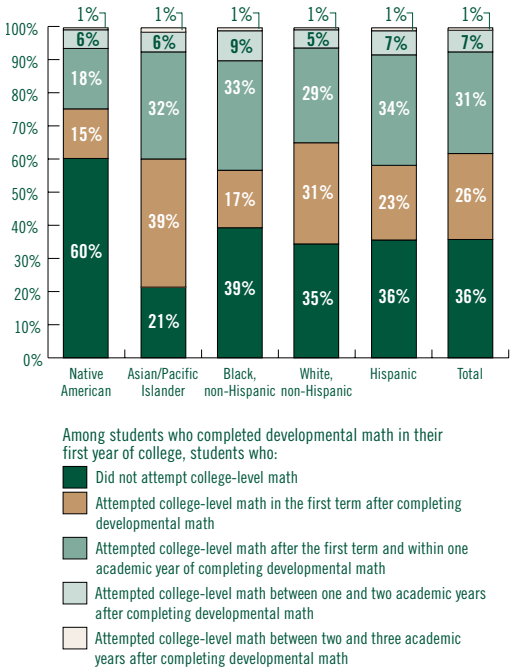
Figure 2. Who completed developmental math and when: Developmental math completion at the end of the third year by race/ethnicity



The 18 percent of students referred to developmental math and completing in their first year of college represents 6,353 students.

Due to rounding, totals may not equal 100 percent

Figure 3. Whether and when students who completed developmental math enrolled in college-level math by race/ethnicity



The 64 percent of students attempting college-level math represents 4,077 students.

Due to rounding, totals may not equal 100 percent

College-Level Math Attempts and Completions

Figure 3 shows the academic progress of developmental math students who completed their developmental math work during the first academic year. Specifically, it looks at whether and when they attempted college-level math. Slightly more than one third (36 percent) of students who completed their developmental math coursework did not attempt college-level math by the end of the third year; similar percentages of Hispanic, black and white students who completed developmental math did not attempt college-level math. However, a much higher percentage of Native American students (60 percent) did not attempt college-level math after fulfilling their developmental math requirements.

Among students who did attempt college-level math, the majority (57 percent) did so within the first year of completing developmental math. Nearly half of these students (26 percent) attempted a college-level math class during the *first consecutive term* after completing their developmental math coursework; the remaining 31 percent attempted a college-level math class after the first term and within one academic year of completing their developmental math coursework.

Figure 4 shows the continuing academic progress of students who completed developmental math during their first academic year and later enrolled in college-level math. The figure shows the timing of their successful completion of college-level math (earning a grade of C or better).

Of students who attempted college-level math, the majority (62 percent) successfully completed college-level math within one academic year of completing developmental math. This percentage was similar for Hispanic and white students (64 and 63 percent, respectively) but lower for Native American and black students (52 and 49 percent, respectively).

> *"Of students who attempted college-level math, the majority (62 percent) successfully completed college-level math within one academic year of completing developmental math."*

The data indicate that students made multiple attempts at college-level math: Nearly half the students attempting during the first year did so during the first consecutive term after completing developmental math, but very few (3 percent) successfully completed (earned a grade of C or better) during the first term. Considerably more

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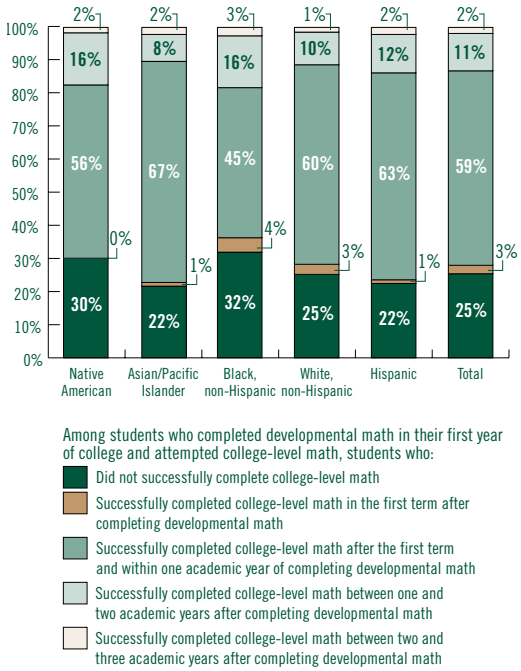
Figure 4. Whether and when students who completed developmental math completed college-level math by race/ethnicity



The 75 percent of students who completed college-level math represents 3,041 students.

Due to rounding, totals may not equal 100 percent.

success occurs within the first year, during which 59 percent of students who attempted college-level math completed the course.

Overall, 25 percent of students who completed developmental math requirements during the first year and attempted college-level math did not successfully complete the college-level course by the end of their third year. Moreover, as Figure 3 showed, 36 percent of students who satisfied their developmental math requirements did not attempt college-level math. Taken together, these two findings show that a large portion of students who satisfied their developmental math requirements early in their academic career did not successfully complete college-level math three years later.

It is noteworthy that the percentage of Native American students who completed their developmental math coursework during the first academic year is slightly higher than the average (21 percent compared with 18 percent, Figure 2). However, only 40 percent of these students attempted college-level math courses during the subsequent three years, compared with the overall average of 64 percent. Further, the Native American students who did attempt college-level math were less likely to successfully complete it. Thirty percent of Native American students did not successfully complete college-level math, compared with 25 percent overall.

What Does It Mean?

First, colleges should take note of the large portion of students who either did not attempt — or attempted but did not complete — all of their required developmental math coursework.

Moreover, students who successfully complete developmental math do not always move on to college-level math: 36 percent of students who completed their developmental math coursework did not enroll in college-level math by the end of the third year. Of those who did attempt, however, three-quarters successfully completed college-level math by the end of the third year, with the majority completing within the first year.

It also is important to note that, with each step of this analysis, the raw number of students declines precipitously:

1. 36,246 students were referred to developmental math.
2. Of those students, 6,353 completed developmental math in their first academic year.
3. Of those students, 4,077 attempted college-level math by the end of the third academic year.
4. Of those students, 3,041 completed college-level math by the end of the third academic year.

Of further concern is the large percentage of Native American students who did not attempt college-level math after completing their developmental math coursework.

When given the option, it appears that many students, to their long-term detriment, postpone fulfilling their math requirements. Building a successful developmental math program with early interventions, therefore, is key to realizing important gains in student success.

It is important for colleges to pinpoint the needs of various student groups. The results suggest several areas colleges can investigate. First, do incoming students understand college math requirements? Does the completion of the developmental math sequence provide students with the confidence they need to successfully continue with college-level math? What strategies can colleges adopt to help students progress from developmental math to college-level math and, ultimately, to complete college-level math?

Achieving the Dream's Database

Achieving the Dream colleges can use the Achieving the Dream database created by JBL Associates to replicate the analysis presented here for their own institutions. This analysis might help colleges identify areas of their curricula or groups of students needing special attention. ■

Data Notes is a bimonthly publication that examines data to illuminate the challenges facing Achieving the Dream colleges and to chart their progress over time.

Achieving the Dream: Community Colleges Count is a national initiative to help more community college students, particularly students of color and low-income learners, succeed. The initiative works on multiple fronts — including efforts at community colleges and in research, public engagement and public policy — and emphasizes the use of data to drive change. For more information, visit www.achievingthedream.org.

This issue of *Data Notes* was written by Sue Clery, senior research associate at JBL Associates, Inc.

If you have questions regarding this issue, or if there is a topic you would like to see addressed in *Data Notes,* please contact Sue Clery at sclery@jblassoc.com.

This report uses the August 2006 version of the Achieving the Dream database.