datanotes
Keeping Informed about Achieving the Dream Data
Vol. 6, No. 3 May/June 2011

Achieving the Dream

Achieving the Dream: Community Colleges Count is a national non-profit organization committed to helping more community college students succeed, with a special focus on students of color and low-income students. Achieving the Dream proceeds from the premise that success begets success, using a student-centered model of institutional improvement to create a culture of evidence in which data and inquiry drive broad-based institutional efforts to close achievement gaps and improve student outcomes overall.

Gateway Coursework: Time to Completion

Much attention is given to getting students through their developmental coursework; this is, of course, imperative. Recent research has described momentum points as "measurable educational attainments, such as completing a college-level math course, that are empirically correlated with the completion of a milestone," a milestone being a measurable achievement such as credential completion.[1] Gateway courses generally include the first college-level English and math courses students are required to take. Increasing the number of students who attempt gateway classes is important in terms of student persistence and credential completion. And, the percentage of students who succeed when attempting gateway classes (the completions ratio) also needs attention. At best, failure to successfully complete these classes slows progress toward graduation or transfer. At worst, it may trigger the decision to drop out.

Limited national research exists on gateway coursework attempts and student outcomes, and isolated studies on gateway coursework, along with findings from previous issues of *Data Notes*[2], describe the characteristics of students who take gateway courses and their overall outcomes. This analysis expands this research and investigates the number of attempts it takes students to complete gateway coursework, to determine if there are identifiable characteristics associated with students who pass these classes on the first attempt as compared to those who attempt the coursework multiple times.

Baseline data were included for all Achieving the Dream colleges[3], and students were tracked through their first three years of enrollment. The results are arrayed separately by the number of times students attempted gateway math and English.[4] The percentages of students completing gateway coursework, by the number of attempts, were analyzed. Data are presented by student and educational characteristics, including gender, age, race/ethnicity, Pell grant receipt, full- and part-time enrollment, and developmental education referral status.

Gateway Attempts and Completions

The pattern of attempts is different for gateway math compared with gateway English. Over the three academic years examined, 72 percent of Achieving the Dream students did not attempt gateway math, while 28 percent of students did so at least once (Figure 1, page 2). Some students attempted gateway math up to nine times. The falloff in number of attempts was steep, with only 20 percent of students who attempted doing so twice, and 9 percent three or more times.

> *"Some students attempted gateway math up to nine times…gateway English up to eight times."*

Students were more likely to attempt gateway English than math. Fifty-one percent of students attempted gateway English (Figure 2, page 3), some up to eight times. Of students who attempted gateway English, 18 percent attempted twice and 8 percent did so three or more times. Interestingly, course-taking patterns in both gateway math and English reveal students attempting two times were the least likely to complete successfully, with students attempting once, or more than two times, more likely to complete. Noteworthy is the fact that in both subject areas, relatively few students attempted

> *"In both subject areas, relatively few students attempted the gateway coursework more than one time."*

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[1] Leinbach, D.T. and Jenkins, D. "Using Longitudinal Data to Increase Community College Student Success: A Guide to Measuring Milestone and Momentum Point Attainment", *CCRC Research Tools*, No. 2, January 2008. Available: http://ccrc.tc.columbia.edu/Publication.asp?uid=570.

[2] Clery, S. "Gatekeeper Achievement", *Data Notes: Keeping Informed About Achieving the Dream Data*. Vol. 1, No. 3. April 2006. Available: http://www.achievingthedream.org/Portal/Modules/89103c8a-59da-49fe-8ef2-3308a6f22e44.asset?.

[3] Baseline cohorts for Rounds 1 through 4 and Cohorts 2009 and 2010 were included in the analysis: 2003 for Rounds 1, 2, and 3; 2004 for Round 4; 2006 for Cohort 2009; 2007 for Cohort 2010.

[4] Achieving the Dream colleges define and report their students' attempts and completions in gateway math and English, rather than providing transcript data. Thus, if a student has more than one attempt, he or she is either a repeat enroller, or the institution has more than one gateway course in which the student enrolled.

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What Is a Cohort?

A cohort is a group of people studied during a period of 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, for example, is the group of credential-seeking students that attended Achieving the Dream institutions for the first time in fall 2002.

Tracking a cohort makes it possible to compare 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.

Figure 1. Achieving the Dream three-year gateway math coursework attempts and completions

Student characteristic	Percentage of students attempted	Of those attempted, percentage distribution by number of attempts			Percentage completed by number of attempts		
		1	2	3 or more	1	2	3 or more
Total	**28**	**71**	**20**	**9**	**70**	**67**	**74**
Gender							
Female	28	73	20	8	73	70	74
Male	29	69	21	10	66	64	73
Race/ethnicity							
Native American	26	69	20	11	64	67	78
Asian Pacific Islander	31	66	21	13	76	77	85
Black, non-Hispanic	24	71	21	8	64	58	64
White, non-Hispanic	30	72	20	8	70	68	75
Hispanic	27	69	21	10	70	66	70
Age							
Younger than 23	34	70	21	9	69	67	74
23–29	19	75	18	7	71	68	74
30 or older	15	78	15	6	76	73	76
Pell grant, first term enrolled							
Received Pell grant	28	70	21	9	67	64	73
Did not receive Pell grant	29	70	20	10	71	70	76
Major field of study							
Terminal major	22	74	18	8	67	67	73
Transfer seeking	33	70	21	9	71	67	75
Undeclared	29	71	20	8	69	64	68
Referred to developmental math							
No	32	72	20	9	71	69	77
Yes	25	70	21	9	68	65	70
Attendance status, first term enrolled							
Full-time	37	70	21	10	71	67	74
Half-time	22	74	19	7	67	66	73
Less than half-time	12	76	18	7	70	73	78

Note: The baseline cohorts for Rounds 1 through 4 and Cohort 2009 were included in the analysis (2003 for Rounds 1, 2, and 3; 2004 for Round 4; 2006 for Cohort 2009; 2007 for Cohort 2010). Details may not sum to totals due to rounding.

the gateway coursework more than one time: 29 percent of students who attempted gateway math did so more than once, as did 26 percent of those attempting gateway English. Interestingly, 7 percent of students attempted and completed either gateway math or English more than once.[5] This could be due to Achieving the Dream colleges that defined multiple courses as gateway courses within one subject area (for example, college level algebra and geometry); students may be enrolling in and completing both courses in the given subject area.

Gateway Math

The first measure of progress toward a student's successful outcome is attempting gateway coursework; historically, math is a major barrier to success for many students. Gateway math outcomes varied by race/ethnicity, gender, and Pell grant status. White, non-Hispanic and Asian Pacific Islander students were more likely to attempt than were the remaining groups of students of color; they were also the most likely to pass at each level of attempt. Black, non-Hispanic students were the least likely to attempt, and were less likely than were students from the other racial/ethnic groups to successfully complete gateway math, regardless of the number of attempts. Hispanic and Native American students were in the middle range in both attempts and completions among the different ethnic/racial groups.

Females attempting gateway math were more likely to attempt just once than males, and they were much more likely to complete successfully. Pell grant recipients and non-recipients were not significantly different in the percentage of students

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[5] Some data reported in this section are derived from data not displayed in the text.

Figure 2. Achieving the Dream three-year gateway English coursework attempts and completions

Student characteristic	Percentage of students attempted	Of those attempted, percentage distribution by number of attempts			Percentage completed by number of attempts		
		1	2	3 or more	1	2	3 or more
Total	**51**	**74**	**18**	**8**	**71**	**67**	**77**
Gender							
Female	52	75	18	8	73	69	78
Male	49	72	19	9	68	64	76
Race/ethnicity							
Native American	49	75	16	9	68	57	81
Asian Pacific Islander	47	72	18	10	78	74	81
Black, non-Hispanic	46	74	19	7	65	59	66
White, non-Hispanic	53	74	18	8	73	69	79
Hispanic	52	72	19	10	65	63	77
Age							
Younger than 23	59	72	19	9	71	66	77
23–29	35	79	16	5	66	67	76
30 or older	29	82	14	5	72	74	79
Pell grant, first term enrolled							
Received Pell grant	56	73	19	8	67	62	74
Did not receive Pell grant	49	71	19	10	71	70	80
Major field of study							
Terminal major	44	75	18	7	69	67	75
Transfer seeking	56	73	18	8	72	67	77
Undeclared	48	72	18	10	68	66	78
Referred to developmental English							
No	53	74	18	8	71	67	77
Yes	45	72	20	8	69	68	78
Attendance status, first term enrolled							
Full-time	63	73	19	9	72	66	77
Half-time	45	76	17	7	67	67	77
Less than half-time	22	76	17	7	69	76	81

Note: The baseline cohorts for Rounds 1 through 4 and Cohort 2009 were included in the analysis (2003 for Rounds 1, 2, and 3; 2004 for Round 4; 2006 for Cohort 2009; 2007 for Cohort 2010). Details may not sum to totals due to rounding.

attempting; however, Pell grant recipients were less likely to successfully complete gateway math than non-recipients.

Examining gateway math attempts by age, developmental math referral status, major program area, and attendance status revealed noteworthy differences:

- Thirty-four percent of students younger than 23 attempted gateway math courses, making them more likely to do so than the older student groups (23 to 29, or 30 and older), 19 and 15 percent. This advantage was offset by the fact that younger students were more likely to make multiple attempts than older students. This could be due to the fact that younger students, just out of high school, require less developmental math than older students, and thus are more likely to take college-level coursework during the three-year period analyzed. Further, students age 30 or older who attempted were more likely to successfully complete gateway math than younger students, regardless of the number of attempts made.
- One-third of transfer-seeking students attempted gateway math, compared with 22 percent of terminal-major students.[6] Yet transfer-seeking students have a greater tendency to attempt multiple times. Transfer-seeking students were also more likely to complete gateway math than were terminal-major students, regardless of the number of attempts. A transfer-seeking student may

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[6] Findings for terminal-seeking students should be interpreted with caution, as it is not always clear how colleges define gateway classes for students in shorter-term occupational programs. This is an unresolved issue in measuring these intermediate success points in the educational sequence.

"One-third of transfer-seeking students attempted gateway math, compared with 22 percent of terminal-major students… Transfer-seeking students were also more likely to complete gateway math."

view the gateway coursework as a requirement more than an occupational student, who may perceive the gateway course as unnecessary for employment. Thus, the transfer-seeking student may be more committed to enrolling in the course and completing it successfully. Further, gateway coursework may not be required for some terminal-major students.

- Students attending full-time during their first term were more likely to attempt gateway math in their first three years than were those attending less-than-half-time, perhaps because full-time attendance allowed for more time in the student's schedule, especially if developmental courses were required. Interestingly, students who attended less-than-half-time, if they attempted gateway math, were the most likely to only attempt the coursework once. For students attempting math multiple times, those attending less-than-half-time were more likely to complete gateway math than were full-time students. These less-than-half-time students may be enrolled in other colleges, but take classes at the community college because they think they are easier, or for convenience.
- As would be expected, students who were not referred to developmental math have higher gateway math attempt rates within the first three years compared with students referred to developmental math. Students with developmental math needs, especially those with deep need, may require time to complete their developmental coursework before attempting the gateway math coursework. Further, if attempted, students not referred to developmental math were more likely to succeed in their gateway math attempts than students referred to developmental math.

Gateway English

Although many more students attempted gateway English than math—51 compared with 28 percent—students' gateway English attempt and completion patterns were, in many ways, similar to those found in gateway math:

- First, females were more likely to attempt than males, while Black, non-Hispanic students were less likely to attempt gateway English than students from other racial/ethnic groups. If attempted, females were more likely to successfully complete, and Black, non-Hispanic students were the least likely to successfully complete, gateway English, regardless of the number of attempts.
- By age, as with gateway math course-taking patterns, students over 30 were less likely to attempt gateway English than were younger students, more likely to make only one attempt, and were more likely than were younger students to successfully complete, regardless of the number of attempts.
- Transfer-seeking students were more likely than terminal-seeking students to attempt gateway English, and were more likely than terminal-seeking students to complete gateway English coursework, regardless of number of attempts.
- Full-time students were more likely to attempt gateway coursework than were less-than-half-time students; but, if attempted multiple times, less-than-half-time students had higher success rates than did students who started full-time.
- Finally, students not referred to developmental English were more likely to attempt, but had similar gateway English completion rates as students who had been referred to developmental English.

"Pell grant recipients were more likely to attempt gateway English than non-recipients…[Non-recipients] were more likely to complete."

Gateway English course-taking patterns by Pell grant receipt differ from those seen for gateway math. Whereas there was no discernable difference in the percentage of students attempting gateway math, Pell grant recipients were more likely to attempt gateway English than non-recipients. However, as seen in gateway math patterns, Pell grant non-recipients who attempted were more likely to complete gateway English than recipients.

What Does this Mean?

With just over one-quarter of students attempting gateway math and one-half attempting gateway English, ensuring students are prepared for, and confident in, their attempt of gateway courses is an important marker indicating progression through the academic sequence toward completion or transfer. About 70 percent of students attempting gateway coursework just one time complete the course successfully. Two-thirds to three-quarters of students needing multiple attempts to complete their gateway courses do so successfully. Students with certain characteristics have higher rates of gateway course success, or require fewer attempts to succeed: women and older students succeed sooner than men and younger students, while Pell grant non-recipients and those who did not require developmental education were more likely

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to complete gateway courses than were Pell grant recipients and students requiring developmental education. Finally, although full-time students were more likely to attempt gateway coursework, less-than-full-time students were more likely to complete the coursework if they took it multiple times. Not many of the entering students attempt gateway courses; however, if they do, their success rate is reasonably high.

As colleges examine gateway courses, and the students who are successful, they should consider the following questions:

- Do gateway course attempt rates vary by subject area at your institution?
- Which student attributes are associated with completion of gateway coursework on the first try?
- Which students are more likely to successfully complete gateway coursework after several attempts?
- Do students who complete gateway coursework on the first try have higher persistence and graduation rates than do students with repeated gateway attempts?
- Are gateway courses required for students in terminal-major programs?
- Does the sequence of courses, and when a student takes a gateway course, have an impact on completion of those courses?

Achieving the Dream colleges can download the companion tables to this issue of *Data Notes*, featuring your college's data, at www.dreamwebsubmission.org. ■

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.

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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.

Note: This issue of *Data Notes* uses the January 2011 version of the Achieving the Dream National Database. Institutions are grouped by the year they started work with the Achieving the Dream.