

# **2010 Follow-Up of the Community College of Denver FastStart Program**

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## Executive Summary

An educational initiative that is receiving increased attention nationally is accelerated developmental education, and the Community College of Denver (CCD) is at the forefront of this reform activity. For more than 5 years, professionals at CCD have been experimenting with accelerated curriculum formats, beginning with developmental math and extending their work to developmental English (reading and writing) and, more recently, have been linking developmental courses to entry-level college courses. Their work has received the attention and support of numerous foundations and government agencies, including the Breaking Through initiative led by Jobs for the Future and the National Council on Workforce Education, with funding from the Charles Stewart Mott Foundation. Earlier funding to initiate this work on accelerated developmental education was provided by the Lumina Foundation for Education and, recently, by the United States Department of Education, Office of Vocational and Adult Education. This latter project extended the model to out-of-school youth under the federal “Ready for College” initiative. Throughout, the Colorado Community College System (CCCS) has been a strong supporter of this work, including assisting with various aspects of the research.

Addressing the needs of all developmental education students is important to the entire CCCS, with roughly half of incoming students required to take developmental course work (representing more than 47,000 students in FY08). CCD is the largest, and arguably the best known, community college in the Colorado system, and it accounts for more than 21% of the entire state’s remedial course enrollments. Nearly 40% of CCD’s total student population is attributable to remedial enrollments (Colorado Community College System [CCCS], 2010a). As part of CCD’s portfolio of developmental education strategies, the accelerated program called FastStart has become an important vehicle for delivering remedial education. By compressing developmental courses normally offered over two semesters into one term, CCD strives to create a developmental education option that enhances student success in terms of their retention and graduation.

This report describes student outcomes by including multiple cohorts enrolled in three accelerated developmental math sequences. Measures of developmental progression and college success were computed, including certificate and 2-year degree completion, transfer, retention, and college credits at 24 and 36 months of enrollment, beginning with the term in which the students participated in the FastStart program. Gains were analyzed for the FastStart math and English/reading cohorts from 24 to 36 months to assess the change in developmental progression and college-level outcomes for cohorts that had sufficient time to be enrolled for 36 months. The number of students involved in computation of gains is relatively small, but is helpful in providing an initial understanding of how FastStart students progress toward college completion outcomes.

Selected findings of this tracking study are as follows:

- The diverse cohorts of CCD’s FastStart math students outperformed CCD’s general remedial math student population on remedial course progression measures, including passing the developmental sequence and passing gatekeeper math, based on a comparison of these descriptive results to a 48-month math tracking study performed by CCCS (2009).
- The initial period of enrollment is important to developmental progression, beginning with accelerated instruction in the first semester and extending through 24 months. This result suggests an accelerated or compressed curriculum can facilitate progression through the developmental curriculum at a pace that allows between 40 and 65% of students to demonstrate success on college success measures such as retention, transfer, and graduation.

- The closer students place to college level when entering in the FastStart developmental math course sequences and English/reading sequences, the more successful they are at achieving positive outcomes on developmental progression and college success measures of retention, transfer, and graduation.
- When conducting follow-up studies such as this one, it is important to define college success in multiple ways, including retention, transfer, and graduation, to document the multitude of ways that FastStart students demonstrate successful performance. Using one of these measures without the others provides an incomplete picture of the ways that students' developmental education experiences contribute to their subsequent college endeavors.

Community college students have diverse goals and expectations for college, and it is important to use multiple measures to understand their success. Results of this follow-up study reinforce the importance of determining college success in multiple ways, beyond completion of a developmental course sequence, so that outcomes such as passing gatekeeper courses, retention, accumulating college credit, transfer, and graduating with certificates and degrees are used to present a comprehensive picture of student performance. Because students who enroll in the FastStart programs have multiple pathways to follow into college (FastStart encourages career exploration rather than career-specific training), it is important to understand a range of retention and completion outcomes. For example, CCD is recognized as a transfer institution within the CCCS, with the highest transfer rate in the state, at about 25% (CCCS, 2010b). Therefore, it is important to track FastStart students for at least 48 months after their initial enrollment, and preferably longer, to give part-time students time to determine their success in attaining completion outcomes (given that 82% of Colorado transfer students attend part time).

In conclusion, the accelerated FastStart model shows promise for students testing into multiple levels of remediation in developmental math and English/reading, particularly in those combinations that place students a couple of courses below college level in a single subject. (Results are also impressive for students who place one course below college level, although the data are limited to one cohort only; more follow-up is needed to confirm these findings.) These results reinforce recent findings (see, for example, Bailey, Jeong, & Cho, S. [2008]) that show the more developmental courses that students are required to take in a specific subject, the less likely they are to complete the sequence and pass the gatekeeper course. Accelerated programs such as FastStart are well suited for students who are on close to college-level instruction. These students, in particular, seem to be most able to benefit from a compressed remedial learning experience that accelerates them to gatekeeper courses and on to collegiate studies.

Although the initial results of this study are encouraging, more time is needed to verify college success in terms of the multiple options that FastStart students can pursue, including retention and credit accumulation, transfer, and attainment of credentials. Additional follow-up research is needed on the FastStart program to determine the ultimate success that students will attain in pursuing their college goals and outcomes. Further, more sophisticated research designs are needed to build on this descriptive study and assess the success of the FastStart program relative to other developmental program options. Such results could have far-reaching importance to community college developmental education at CCD and at community college throughout the country. Given the leading role that CCD has played nationally with FastStart, the institution is situated optimally to engage in additional research and inform national audiences of the potential of accelerated developmental education to enhance success for students seeking a community college education.

## Introduction

This report describes student outcomes for the Community College of Denver (CCD) FastStart program, an accelerated developmental education program in math, English, and reading.<sup>1</sup> This study presents results for all FastStart students who started the program between Spring 2006 and Spring 2008, and it follows students through Spring 2010, at which time results are available for 24 months and for 36 months for selected cohorts. The study involves a total of 11 math cohorts, including five cohorts of Math (MAT) 030-060,<sup>2</sup> referred to as MAT Dev-Basic; five of MAT 060-090, referred to as MAT Dev-Intermediate; and one of MAT 090-106,<sup>3</sup> referred to as MAT Dev-Advanced. Of these, three MAT Dev-Basic cohorts and three MAT Dev-Intermediate cohorts had sufficient enrollment time to measure outcomes for 24 and 36 months. Results are also presented for eight English<sup>4</sup> (ENG) cohorts, with three cohorts enrolled in ENG 3, a three-course combination of Reading (REA) 060, REA 090 and ENG 090; and five cohorts enrolled in ENG 4, a four-course combination of REA 060, REA 090, ENG 060, and ENG 090. ENG 3 is referred to as ENG Dev-Advanced, and ENG 4 is referred to as ENG Dev-Intermediate; one ENG Dev-Advanced and three ENG Dev-Intermediate cohorts had sufficient time to be enrolled for both 24 and 36 months.

Several measures of developmental education progression were computed for a 24- and 36-month period when possible, including students' completion of two, three, or four levels of remedial courses during the accelerated one-term FastStart program; completion of at least one developmental-level course for all students, including students who did not complete FastStart during enrollment in the program; completion of all developmental math or English/reading, which equated students with being "college ready"; developmental credits awarded in 24 or 36 months; and completion of the math or English gatekeeper course, meaning the first college- and transfer-level course that a student takes after remediation. Results are also computed for college completion (including certificate completion), 2-year degree completion, transfer, retention (or still being enrolled), and college credits passed by students still enrolled at the 24- or 36-month mark, or both. The measure of college success is a compilation of certificate or degree, transfer, and retention. Finally, change (gain) is computed for selected FastStart math and English/reading cohorts who enrolled at 24 to 36 months on the developmental education progression and college completion measures. These measures are defined similarly to those in other recent studies of developmental progression and student success, including the recent study by Bailey et al. (2010) using a data set that included students enrolled in institutions that are part of Achieving the Dream.

The authors recognize the limitations of this descriptive study in that the data were obtained and initially reported to the external evaluator by CCD's Office of Institutional Research and Planning and FastStart program professionals. In addition, some data are limited to self-report, using institutional forms completed by students, and some of these measures have missing cases, especially those for Pell grant recipients and English as a second language (ESL) students. Further, this study presents descriptive results and does not include comparison groups. Therefore, the authors do not claim effects as they relate to nonparticipants or other remedial student groups;

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<sup>1</sup> This work extends earlier research conducted by Corash, Baker, and Nawrocki (2008) and Bragg (2009, 2010) for the Breaking Through initiative (see <http://www.breakingthroughcc.org/>).

<sup>2</sup> The titles for developmental math courses are MAT 030, Fundamentals of Mathematics; MAT 060, Pre-algebra; MAT 090, Introductory Algebra; and MAT 106, Intermediate Algebra.

<sup>3</sup> Recently, CCCS renumbered MAT 106 as MAT 099, but this report continues to reference MAT 106 because this course number is consistent with the report by Bragg (2009).

<sup>4</sup> The titles of developmental English and reading courses are: REA 060, Foundations of Reading; REA 090, College Preparatory Reading; ENG 060, Writing Fundamentals; and ENG 090, Basic Composition.

rather, the goal of this report is to provide a clear description of FastStart student participants' enrollment and outcomes.

### The FastStart Model

The goal of FastStart is to provide an accelerated and compressed instructional experience for learners of all ages who enter CCD and are required to enroll in developmental math and English (reading and writing). Knowing the goals and program features of the FastStart program is critical to understanding the outcomes students can achieve as they progress through the developmental course sequences and through college-credit courses to completion. The FastStart model uses a cohort-based, learning-community approach that contextualizes classroom-based academic learning experiences, with particular attention paid to recruiting low-skilled learners. Developmental math and English courses are complemented with a student success course that focuses on both college and career preparation. The FastStart model also provides students with one-on-one advising, tutoring, and other support services to supplement their classroom learning. Beginning with one case manager and adding a second in fall 2010, student participants in FastStart are given substantial support in terms of addressing academic, financial, and personal barriers that could impede their completion of developmental course work.

The core components of the FastStart model are as follows (also see Figure 1):

- **An accelerated and compressed developmental curriculum using contextualized instruction, active learning, and computer-based instruction epitomizes the instructional approach.** Students advance through two levels of developmental math in one semester by combining the first and second levels (MAT 030-060, equivalent to Grades 3 to 5), referred to as MAT Dev-Basic; the second and third levels (MAT 060-090, equivalent to Grades 6 to 8), referred to as MAT Dev-Intermediate; or the third level and first level of college studies in math (MAT 090-106, equivalent to Grades 9 to 12), referred to as MAT Dev-Advanced. The English option combines two, three, or four sequenced courses of developmental English and reading, including two versions of FastStart: ENG Dev-Advanced, involving Reading (REA) 060, REA 090, and ENG 090, referred to as the ENG Dev-Advanced cohort; and ENG Dev-Intermediate, including REA 060, REA 090, ENG 060, and ENG 090, referred to as the ENG Dev-Intermediate cohorts.
- **A college and career success course complements the developmental curriculum.** This course assists FastStart students with college and career preparation by engaging them in contextualized, project-based instruction that encourages the development of college knowledge and the reinforcement of college behaviors, such as the development of study skills and the use of various college resources. Students are also engaged in career exploration activities that enable them to consider their future careers and understand how college studies align with career-entry requirements. Students are awarded college credit for successful completion of this course.
- **Cohorts acting as learning communities support formal and informal learning experiences, including integrated academic, career, and social learning activities.** Students are encouraged to learn collaboratively and to support one another, with faculty playing a deliberate role in nurturing a supportive community of learners who strive for success. For example, an optional hour with a study group that includes instructor support is built into the students' weekly schedule to help them learn how to study together outside class time.
- **Formal assessments supplemented by locally developed diagnostics identify students who can benefit from the program.** Students identified for FastStart take the Accuplacer placement tests, as required by CCD and consistent with the state's community college system requirement. Results of these exams in

combination with personal interviews help to inform potential students of what they will experience as participants in the accelerated curriculum. Students from low-income and diverse racial, ethnic, and cultural backgrounds are encouraged to participate, and the advisement process provides all students with the information they need to consider the demands of the program and make their own decisions about whether to participate.

- **A case manager and educational advisors help students develop individualized education and career plans.** Two case managers, one with considerable experience with the program and another newer professional, advise students on all aspects of their education, career, and life planning. This includes helping them to understand and use existing student support services at CCD, particularly services such as financial aid, academic advising, personal counseling, and tutoring.
- **Wrap-around services, including financial aid, career counseling, academic advising, and other services, are instrumental to students' getting the support they need to be successful.** Of these various services, advising on financial aid is especially important because many students lack knowledge of how to access financial resources to attend college. In addition, various learning resource centers and supports located on the CCD-Auraria campus offer support that is accessible in an electronic and online format, and students are advised of these options.

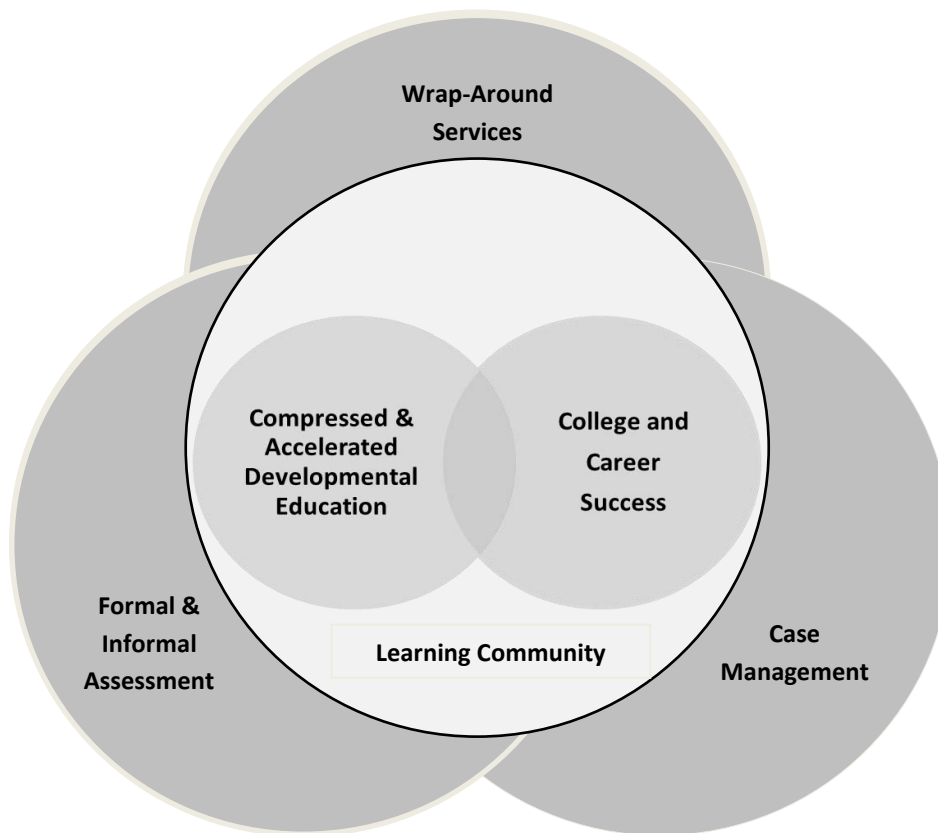


Figure 1. Core components of the FastStart program.

Reflecting on the impact of the FastStart math curriculum and the FastStart English and reading curriculum in combination with other components of the model, Baker (2010) emphasized that compression is a “particularly relevant strategy for colleges and states governed by mandatory assessment and placement policies . . . [because it recognizes that] students who place into arithmetic and pre-algebra are at the highest risk of not passing college math” (p. 4). This is because students are mandated to progress through the math curriculum in a linear fashion prior to beginning college-level courses. When students are required to take multiple courses one semester at a time, the progression can take several years, exhausting students’ motivation and their financial ability to enroll in college. Identifying a key advantage of the FastStart program, Baker noted, “[C]ompression of math combinations at all levels offers a tool to reduce time to completion” (p. 4), and enhance the potential for students to progress through developmental courses and enroll in college-level course work more rapidly than taking the traditional linear course sequence. Because nationally, math enrolls the largest proportion of incoming community college students that test into the developmental curriculum (Attewell, Lavin, Domina, & Levey, 2006), creation of a compressed math curriculum has been important to CCD, an urban campus that serves a highly diverse population. Of course, English and reading have been high priorities as well.

Referring to the compressed English and reading curriculum, Baker (2010) again observed the beneficial relationship between curriculum compression and reduced costs for students, noting that “students take two levels of *both* [emphasis added] developmental English and reading in one semester in half the seat time . . .” (p. 4). One combination of English courses pairs two levels of developmental reading and one level of developmental English in one semester, and this curriculum was developed specifically for ESL completers transitioning into developmental education, with well over 50% of these cohorts being ESL completers.

The remainder of this report shows results for the FastStart math and English cohorts on their progression through developmental education course work to the college level and on their retention, transfer, and credentialing with a certificate or degree.

### **Who Are FastStart Math Students?**

FastStart students are a highly diverse group. Results showed that the majority of the five MAT Dev-Basic cohorts and the five MAT Dev-Intermediate cohorts were minority and female. Almost 20% self-reported they were ESL learners. A much higher percentage of MAT Dev-Intermediate students than MAT Dev-Basic students were 23 years of age or older (32 vs. 62%) and Pell grant recipients (60 vs. 44%). Hence, MAT Dev-Intermediate enrolls a higher proportion of students considered nontraditional by age compared with MAT Dev-Basic, and both of these groups enroll more nontraditional and diverse learners than the MAT Dev-Advanced cohort, which was 77% female, 39% minority, and 31% Pell grant recipients.

Table 1 displays demographic results for each FastStart math program, along with a cumulative weighted average for each FastStart combination.



**Table 1****Demographics of FastStart Math Cohorts by Term of Entry**

Cohort by Entry Term	n	Percentage 23+ (Nontrad.)	Percentage Female	Percentage Minority	Percentage Below High School or GED	Percentage Pell <sup>1</sup>	Percentage Native Language English <sup>2</sup>
<b>MAT Dev-Basic</b>							
Spring 06	18	33.4	77.8	83.3	5.6	61.1	72.7
Fall 06	38	26.4	71.1	86.8	26.3	44.7	78.9
Spring 07	23	39.1	60.9	65.2	13.0	30.4	91.3
Fall 07	39	25.6	61.5	69.2	8.7	48.7	79.5
Spring 08	24	41.7	58.3	58.3	4.2	37.5	87.5
Cumulative weighted average	142	31.7	65.5	73.2	12.9	44.3	81.7
<b>MAT Dev-Intermediate</b>							
Spring 06	15	60.0	66.7	73.3	20.0	46.7	80.0
Fall 06	18	61.1	61.1	38.9	16.7	50.0	100.0
Spring 07	27	66.7	63.0	70.4	11.1	59.3	92.6
Fall 07	17	47.1	70.6	52.9	11.8	64.7	88.2
Spring 08	29	68.9	72.4	72.4	13.8	69.0	96.6
Cumulative weighted average	106	62.3	67.0	63.2	14.2	59.5	92.5
<b>MAT Dev-Advanced</b>							
Spring 08	13	53.9	76.9	38.5	7.7	30.8	100.0

<sup>1</sup>Pell is a self-reported, optional field on the Community College of Denver (CCD) enrollment form. Missing data in this field raise questions about the reliability of this variable.

<sup>2</sup>English as a second language (ESL) is a self-reported, optional field on the CCD enrollment form. Also included in the ESL designation is previous ESL enrollment; however, missing data raise questions about the reliability of this variable.

## FastStart Math Results

This section summarizes results for 24- and 36-month periods for MAT Dev-Basic and MAT Dev-Intermediate, and for a 24-month period for MAT Dev-Advanced on developmental education progression.

### Developmental Progression Measures

Table 2 provides 24-month results for the above-mentioned FastStart cohorts (MAT Dev-Basic and MAT Dev-Intermediate) on five developmental progression measures:

- a) percentage who completed a two-course math sequence in one semester with a grade of C or higher,
- b) percentage who completed at least one level of developmental math with a passing grade,
- c) percentage who passed all developmental math and were considered “college ready” in math,
- d) mean total credits of developmental math passed, and
- e) percentage who passed a gatekeeper course in college math.

Results are presented for each cohort and are aggregated for all cohorts associated with each developmental math sequence. The aggregate computation of 24-month follow-up results is weighted to take into account the different numbers of students in each cohort.

**Table 2**

### 24-Month Follow-up of FastStart (FS) Cohorts on Developmental Math Progression by Term of Entry

Cohort by Entry Term	n	Percentage Completed Accelerated Sequence in One Semester (FS Completers) <sup>1</sup>	Percentage Completed at Least One Level of Dev Math with Passing Grade	Percentage Passed All Dev Math and College Ready in Math	Mean Total Credits of Dev Math Passed	Percentage Completed Math Gatekeeper Course <sup>2</sup>
<b>MAT Dev-Basic</b>						
Spring 06	18	<b>88.9</b>	100.0	38.9	6.39	11.1
Fall 06	38	<b>84.2</b>	97.4	44.7	6.43	10.5
Spring 07	23	<b>47.8</b>	65.2	17.4	5.47	4.3
Fall 07	39	<b>74.4</b>	87.2	48.7	6.77	7.7
Spring 08	24	<b>66.7</b>	79.2	45.8	7.05	25.0
Cumulative weighted average <sup>3</sup>	142	<b>73.2</b>	86.6	40.0	6.30	11.3
<b>MAT Dev-Intermediate</b>						
Spring 06	15	<b>80.0</b>	86.7	80.0	6.69	26.7
Fall 06	18	<b>55.6</b>	88.9	61.1	5.41	22.2
Spring 07	27	<b>66.7</b>	85.2	74.1	6.48	18.5
Fall 07	17	<b>52.9</b>	88.2	52.9	5.40	11.8

Cohort by Entry Term	n	Percentage Completed Accelerated Sequence in One Semester (FS Completers) <sup>1</sup>	Percentage Completed at Least One Level of Dev Math with Passing Grade	Percentage Passed All Dev Math and College Ready in Math	Mean Total Credits of Dev Math Passed	Percentage Completed Math Gatekeeper Course <sup>2</sup>
Spring 08	29	<b>86.2</b>	93.1	86.2	6.85	27.6
Cumulative weighted average	106	<b>69.8</b>	88.7	72.6	6.90	21.7 <sup>3</sup>

**MAT Dev-Advanced**

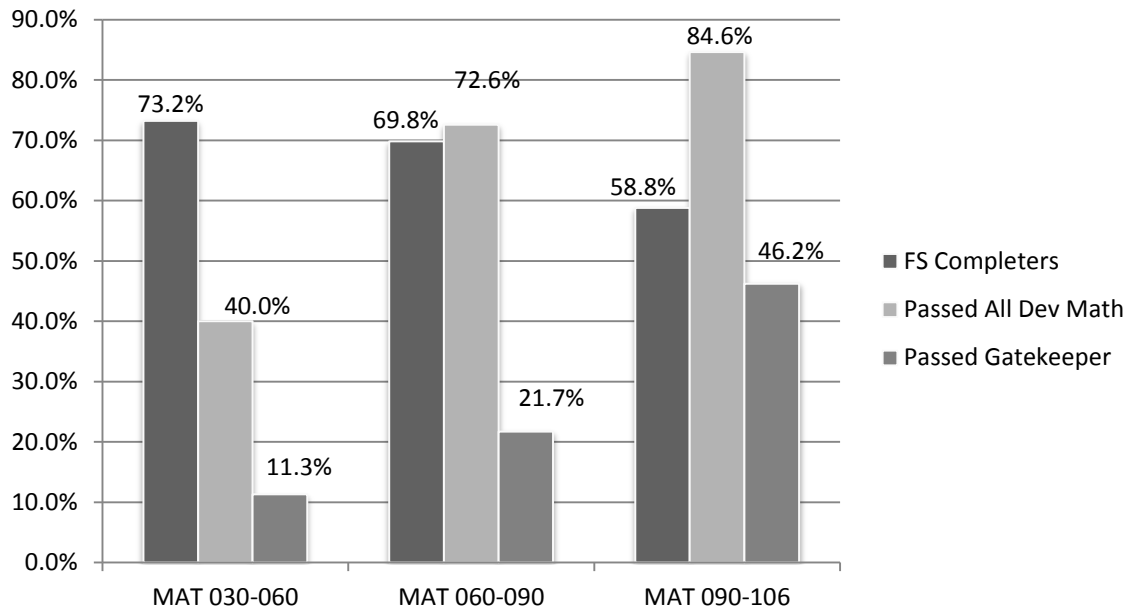
Spring 08	13	<b>58.8</b>	84.6	84.6	4.0	46.2
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<sup>1</sup> This column shows the percentage of students associated with successful completion of the FastStart program, which consists of the two-course sequence completed in one semester with a grade of C or higher.

<sup>2</sup> For this analysis, the “college gatekeeper” courses are transfer-level math courses designated as MAT107, Career Math, and MAT121, College Algebra. Whereas a prior analysis by Bragg (2009) considered MAT106 a “college gatekeeper” course, a change in the Colorado Community College System policy on developmental math moved MAT106 to the developmental course sequence and below the college level, and the course was renumbered as MAT 099.

<sup>3</sup> The lower percentage of FastStart students passing the college math gatekeeper course compared with the finding of Bragg (2009) is attributed to the change noted in footnote 2 above.

Figure 2 shows the performance of all cohorts in the three developmental math sequences at 24 months. At this point, 73% of the MAT Dev-Basic cohort had completed the FastStart program, 40% had passed all developmental math courses, and 11% had passed the math gatekeeper course. Students who tested into MAT Dev-Intermediate showed a level of success comparable to those in MAT Dev-Basic, with nearly 70% of the MAT Dev-Intermediate group completing the accelerated two-course sequence of the FastStart program. The MAT Dev-Intermediate group also showed a much higher level of success in passing all developmental math than those in MAT Dev-Basic, at 72.6 versus 40%, respectively, and this higher level of success extended to the math gatekeeper course, with double the percentage of students in MAT Dev-Intermediate versus MAT Dev-Basic passing the gatekeeper course (22 vs. 11%, respectively). Finally, and not surprisingly, the MAT Dev-Advanced cohort showed the highest level of success of all three FastStart groups in passing all developmental math courses (85%) and passing the math gatekeeper course (47%). These results were achieved despite the lower level of initial success in the FastStart program for the MAT Dev-Advanced program, with 58.8% of this cohort completing the accelerated two-course FastStart program compared with 73.2% completing MAT Dev-Basic and 69.8% completing MAT Dev-Intermediate.



**Figure 2. FastStart (FS) completion, all developmental math passed, and math gatekeeper course passed for MAT Dev-Basic, MAT Dev-Intermediate, and MAT Dev-Advanced at 24 months.**

Next, results are shown for three cohorts of MAT Dev-Basic and three cohorts of MAT Dev-Intermediate at the 36-month point, using the same measures of developmental progression as used above. Table 3 shows 36-month results for each cohort and an aggregate result at 36 months. (As mentioned, only three of the MAT Dev-Basic and MAT Dev-Intermediate cohorts were enrolled for a sufficient time to be included in the 36-month analysis. Similarly, the MAT Dev-Advanced cohort had results at 24 months, but not at the 36-month point).

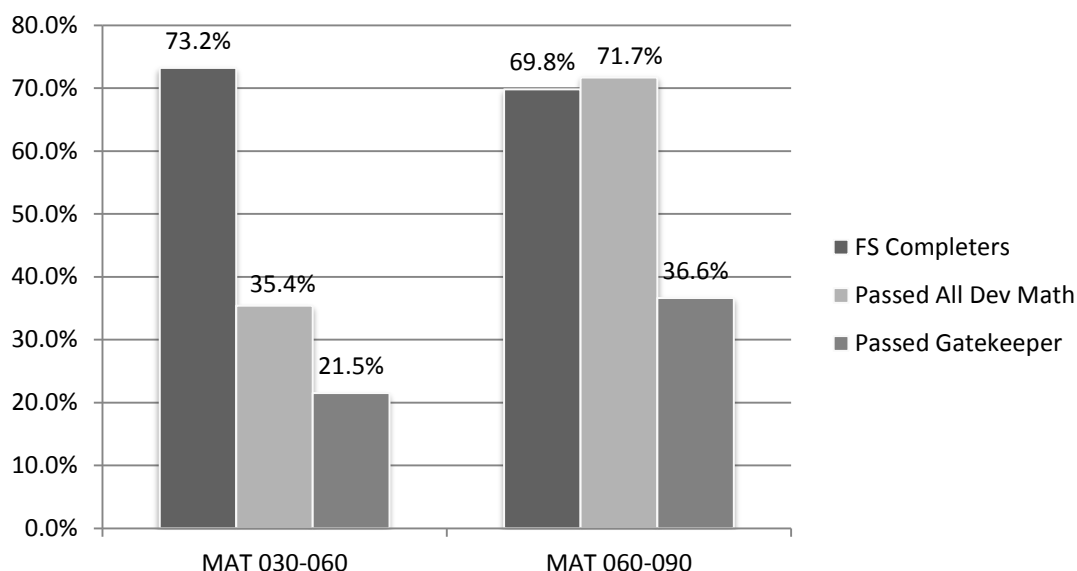
**Table 3****36-Month Follow-up Analysis of FastStart (FS) Cohorts on Developmental Math Progression by Term of Entry**

Cohort by Entry Term	n	Percentage Completed Accelerated Sequence in One Semester (FS Completers) <sup>1</sup>	Percentage Completed at Least One Level of Dev Math	Percentage Passed All Dev Math and College Ready in Math	Mean Total Credits of Dev Math Passed	Percentage Completed Math Gatekeeper Course <sup>2</sup>
<b>MAT Dev-Basic</b>						
Spring 06	18	<b>88.9</b>	100.0	38.9	6.39	22.2
Fall 06	38	<b>84.2</b>	97.4	44.7	6.54	28.9
Spring 07	23	<b>47.8</b>	69.6	17.4	5.44	8.7
Cumulative weighted average	79	<b>74.7</b>	89.9	35.4	6.19	21.5
<b>MAT Dev-Intermediate</b>						
Spring 06	15	<b>80.0</b>	86.7	80.0	6.69	40.0
Fall 06	18	<b>55.6</b>	94.4	61.1	5.41	33.3
Spring 07	27	<b>66.7</b>	85.2	74.1	6.48	37.0
Cumulative weighted average	60	<b>66.7</b>	88.3	71.7	6.21	36.6

<sup>1</sup> This column shows the percentage of students associated with successful completion of the FastStart program, which consists of the designated two-course sequence completed in one semester with a grade of C or higher.

<sup>2</sup> For this analysis, the “college gatekeeper” courses are transfer-level math courses designated as MAT107, Career Math, and MAT121, College Algebra. Whereas a prior analysis by Bragg (2009) considered MAT106 a “college gatekeeper” course, a change in Colorado Community College System policy on developmental math moved MAT106 to the developmental course sequence and below the college level, and the course was renumbered as MAT 099.

Figure 3 shows the results of three MAT Dev-Basic and three MAT Dev-Intermediate cohorts at 36 months. Results show an increase in gatekeeper math from 24 to 36 months for both groups, with the MAT Dev-Basic cohort increasing from 11 to 23% from the 24-month to the 36-month mark and from 22 to 37% from the 24-month to the 36-month mark. The MAT Dev-Basic and MAT Dev-Intermediate cohorts accumulated between 5.4 and 7.0 developmental credits after 24 months, and for the cohorts that continued to 36 months, the number of accumulated credits was between 5.4 and 6.7.



**Figure 3. FastStart (FS) completion, all developmental math passed, and math gatekeeper course passed for MAT Dev-Basic and MAT Dev-Intermediate at 36 months.**

### College Completion Measures

Table 4 presents 24-month results for college completion measures, and Table 5 shows results at the 36-month mark. Results are computed for each cohort, along with an aggregate weighted average. The college completion measures are as follows:

- percentage who graduated with a certificate(s),
- percentage who graduated with a 2-year degree,
- percentage who transferred,
- percentage still enrolled with the average number of college credits passed, and
- percentage “college success,” which represents the aggregate of the aforementioned completion measures.

Results for the college completion measures revealed that FastStart students who enrolled in MAT Dev-Intermediate showed a higher level of success than did MAT Dev-Basic FastStart students. A higher percentage of FastStart MAT Dev-Intermediate students reached the threshold of “college success,” meaning they graduated, transferred, or were still enrolled in college course work at CCD, compared with the MAT Dev-Basic group.

MAT090-106 showed the highest level of success, with 61% of students having graduated, having transferred, or still being enrolled.

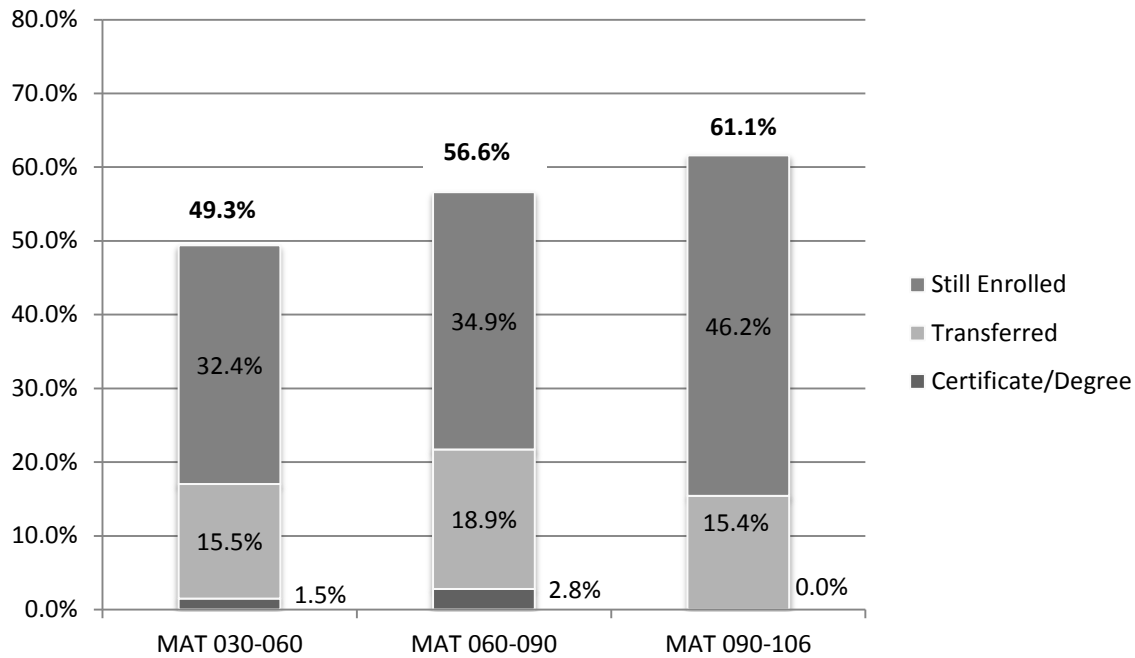
**Table 4**

**24-Month Follow-up of FastStart Math Cohorts on College Completion by Term of Entry**

Cohort by Entry Term	n	Percentage Completed Certificate	Percentage Grad with 2-Year Degree	Percentage Transferred	Percentage Still Enrolled (Mean College Credits)	Percentage Success <sup>1</sup>
<b>MAT Dev-Basic</b>						
Spring 06	18	0	5.9	11.1	27.8 (23.0)	<b>44.8</b>
Fall 06	38	0	0	7.9	34.2 (24.8)	<b>42.1</b>
Spring 07	23	0	0	13.0	30.4 (13.0)	<b>43.4</b>
Fall 07	39	2.6	0	30.8	28.2 (13.8)	<b>61.6</b>
Spring 08	24	0	0	8.3	41.7 (25.0)	<b>50.0</b>
Cumulative weighted average	142	0.7	0.8	15.5	32.4 (19.8)	<b>49.3</b>
<b>MAT Dev-Intermediate</b>						
Spring 06	15	0	0	6.7	33.3 (36.8)	<b>40.0</b>
Fall 06	18	0	0	33.3	11.1 (33.0)	<b>44.4</b>
Spring 07	27	0	3.7	14.8	37.0 (25.1)	<b>56.5</b>
Fall 07	17	0	5.9	17.6	35.3 (11.7)	<b>58.8</b>
Spring 08	29	0	3.4	20.7	48.3 (23.3)	<b>72.4</b>
Cumulative weighted average	106	0	2.8	18.9	34.9 (25.5)	<b>56.6</b>
<b>MAT Dev-Advanced</b>						
Spring 2008	13	0	0	15.4	46.2 (30.0)	<b>61.1</b>

<sup>1</sup> Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at the 24-month mark after initial enrollment in the FastStart program.

The results shown in Figure 4 reveal that nearly 50% of students in all three math sequences had graduated, had transferred, or were still enrolled at the 24-month mark, with students enrolled in MAT Dev-Advanced having the largest percentage (61%) of students who had reached these college success milestones. Whereas the MAT Dev-Basic and MAT Dev-Intermediate results are based on five cohorts each, results for the MAT Dev-Advanced were based on one cohort only.



**Figure 4. College success (certificate or degree completion, transferred, or still enrolled) for MAT Dev-Basic, MAT Dev-Intermediate, and MAT Dev-Advanced at 24 months.**

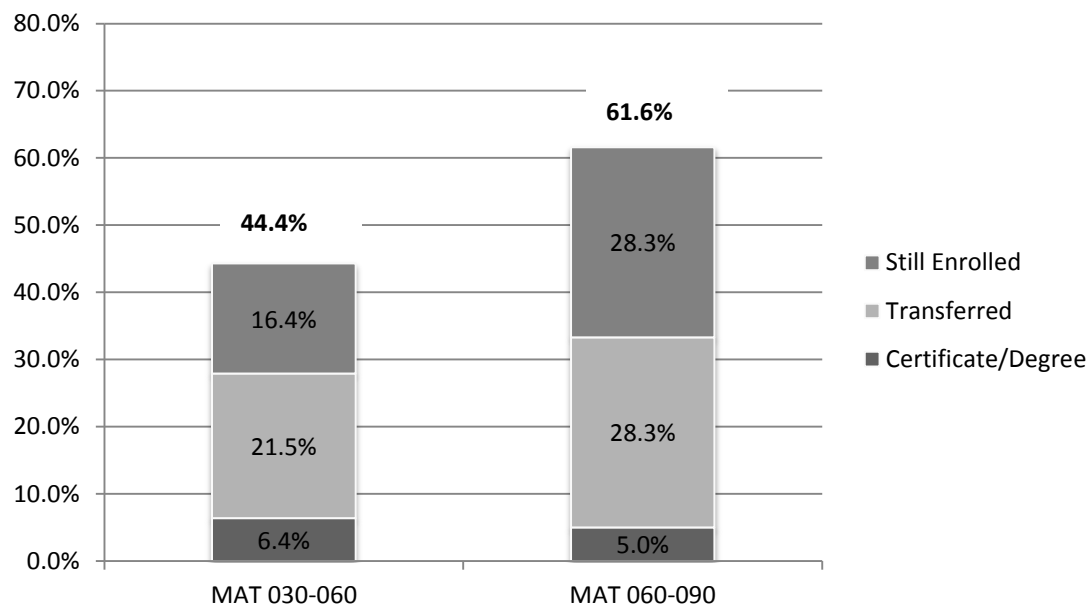
Table 5 and Figure 5 present results for the MAT Dev-Basic and MAT Dev-Intermediate cohorts at 36 months on the college success measures. Results showed MAT Dev-Basic and MAT Dev-Intermediate on the college success measures at the 36-month mark for three cohorts in each analysis. A slightly higher percentage of students had completed a certificate or degree at the 36-month mark compared with the 24-month follow-up results. In addition, a substantially higher percentage of students in the two FastStart programs had transferred at the 36-month mark as compared with the 24-month mark. Even so, a sizeable proportion of each group was still enrolled at 36 months, particularly in the MAT Dev-Intermediate cohort.



**Table 5****36-Month Follow-up of FastStart Math Cohorts on College Completion by Term of Entry**

Cohort by Entry Term	n	Percentage Completed Certificate	Percentage Grad with 2-Year Degree	Percentage Transferred	Percentage Still Enrolled (Mean Total College Credits Earned)	Percentage Success <sup>1</sup>
<b>MAT Dev-Basic</b>						
Spring 06	18	0	5.6	16.7	22.2 (36.8)	<b>44.5</b>
Fall 06	38	5.3	2.6	18.4	15.8 (43.3)	<b>42.1</b>
Spring 07	23	0	4.3	30.4	13.0 (8.7)	<b>47.3</b>
Cumulative weighted average	79	2.6	3.8	21.5	16.4 (31.7)	<b>44.3</b>
<b>MAT Dev-Intermediate</b>						
Spring 06	15	0	6.7	20.0	20.0 (57.3)	<b>46.7</b>
Fall 06	18	0	0	50.0	33.3 (38.0)	<b>83.3</b>
Spring 07	27	0	7.4	18.5	29.6 (46.7)	<b>55.5</b>
Cumulative weighted average	60	0	5.0	28.3	28.3 (46.7)	<b>61.6</b>

<sup>1</sup>Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at 36 months after initial enrollment in the FastStart program.



**Figure 5. College success (certificate/degree completion, transferred, or still enrolled) for MAT Dev-Basic and MAT Dev-Intermediate at 36 months.**

### Change from 24 and 36 Months

This section presents longitudinal results for three Math 030-060 and MAT Dev-Intermediate cohorts that had sufficient time to be enrolled for 24 *and* 36 months from their initial enrollment in the FastStart program in Spring 06, Fall 06, or Spring 07. Cohorts that participated in FastStart in Fall 2007 and Spring 2008 were not included in this analysis because they did not have sufficient time to be enrolled for 36 months. The change in results from 24 to 36 months was computed based on the measures of developmental education progression and college success.

The results displayed in Table 6 and Figure 6 show that almost 75% of MAT Dev-Basic students completed FastStart and about 35% passed all developmental math courses by 24 months, with no change in developmental math completion at 36 months. (In Figure 6, one darker gray bar shows the percentage of results at 24 months, and the lighter gray bar shows the added percentage at 36 months.) A substantial percentage gain was shown in the rate at which the college math gatekeeper course for MAT Dev-Basic was passed between 24 and 36 months, increasing from 9 to 22%. Results also showed that one third of these students were college ready by 36 months, with the majority passing the math gatekeeper course during the 24- to 36-month period. A small change was observed in college success, which increased by about 1%, from 43% at 24 months to 44% at 36 months. The negative change in retention reflects MAT Dev-Basic students moving from the category of still enrolled to graduate or transfer status.

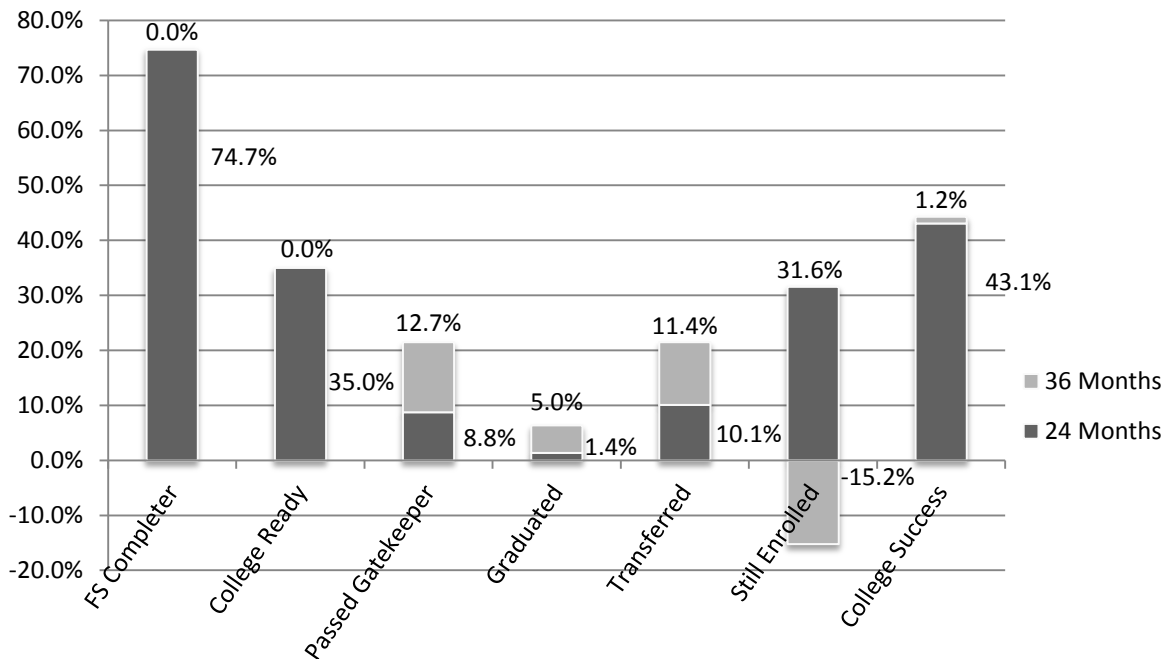
**Table 6**

**Gain in Developmental Progression and on College Success Measures for FastStart (FS) MAT Dev-Basic Cohorts at 24 and 36 Months<sup>1</sup>**

FastStart MAT Dev-Basic Cohorts (Spring 06, Fall 06, and Fall 07)	n	Percentage Completed Accelerated Sequence in One Semester (FS Completers)	Percentage Passed All Dev Math and College Ready in Math	Percentage Passed College Math Gatekeeper Course	Percentage Success <sup>2</sup>
24-Month Interval (cumulative weighted average)	79	74.7	35.4	8.8	43.1
36-Month Interval (cumulative weighted average)	79	74.7	35.4	21.5	44.3
<b>Gain from 24 to 36 Months</b>	<b>79</b>	<b>0</b>	<b>0</b>	<b>+12.7</b>	<b>+1.2</b>

<sup>1</sup>This analysis includes MAT Dev-Basic cohorts who enrolled initially in Spring 06, Fall 06, and Spring 07 at 24 and 36 months. Fall 07 and Spring 08 are not included because there was insufficient time for these two cohorts to be enrolled for 36 months.

<sup>2</sup>Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at the 24- and 36-month mark after initial enrollment in the FastStart program.



**Figure 6. Percentage gain of FastStart (FS) MAT Dev-Basic cohorts on developmental progression and college success from 24 to 36 months.**

With respect to three cohorts of MAT Dev-Intermediate starting Spring 06, Fall 06, and Spring 07 that had enrolled through the 36-month mark, about two-thirds were FastStart completers and almost 72% reached the college-ready status by 24 months, with no additional students reaching this level by 36 months (see Table 8). More than one third of FastStart students passed the math gatekeeper course by 36 months, with the majority passing the course between 24 and 36 months (see Figure 7). In addition, by 36 months more than 60% of the cohort had graduated, had transferred, or were still enrolled. Similar to MAT Dev-Basic, a small percentage (2%) of students had completed a certificate or degree by 24 months, but the percentage had increased to 5% by 36 months.

**Table 7**

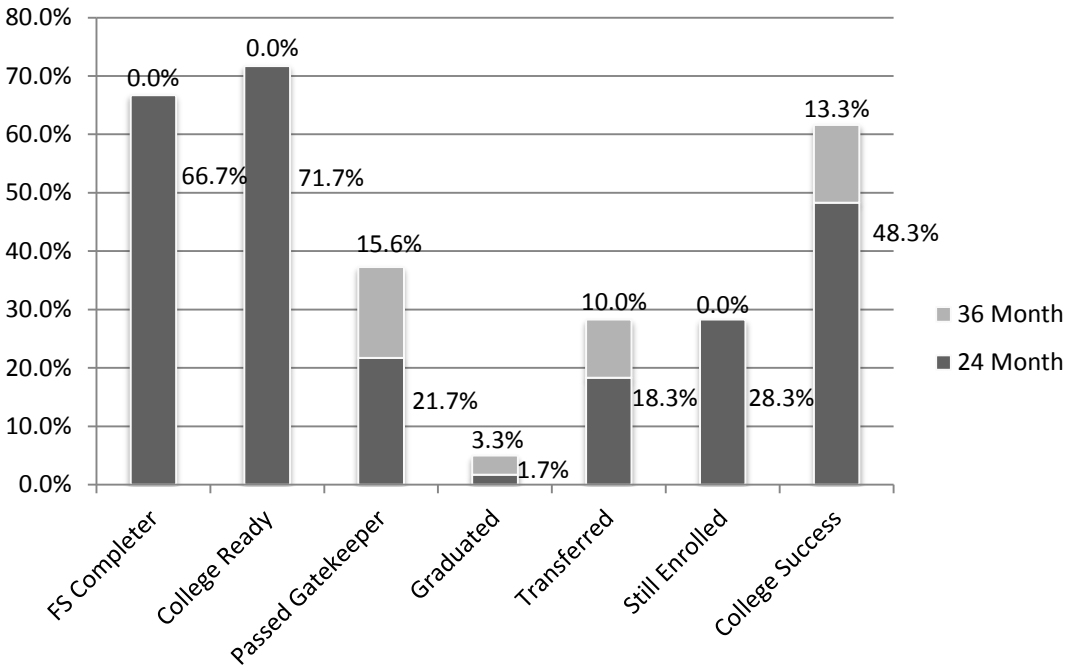
**Gain in Developmental Progression and on College Success Measures for FastStart (FS) MAT Dev-Intermediate Cohorts at 24 and 36 Months<sup>1</sup>**

FastStart MAT Dev-Intermediate Cohorts (Spring 06, Fall 06, and Spring 07)	n	Percentage Completed Accelerated Sequence in One Semester (FS Completers)	Percentage Passed All Dev Math and College Ready in Math	Percentage Passed College Math Gatekeeper Course	Percentage Success <sup>2</sup>
24-Month Interval (cumulative weighted average)	60	66.7	71.7	21.7	48.3
36-Month Interval (cumulative weighted average)	60	66.7	71.7	36.6	61.6
<b>Gain from 24 to 36 Months</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>+15.6</b>	<b>+13.3</b>

<sup>1</sup>This analysis includes MAT Dev-Basic cohorts who enrolled initially in Spring 06, Fall 06, and Spring 07 at 24 and 36 months.

Fall 07 and Spring 08 are not included because there was insufficient time for these two cohorts to be enrolled for 36 months.

<sup>2</sup>Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at the 24- and 36-month mark after initial enrollment in the FastStart program.



**Figure 7. FastStart MAT Dev-Intermediate students' progress toward college success at 24 and 36 months.**

Figure 9 breaks down the college success measure shown in Figure 8 into the three contributing measures of graduation, transfer, and still enrolled. Results confirm that only 2% of students completed a certificate or degree by 24 months, but the percentage had increased to 5% by 36 months. The percentage of FastStart students who transferred increased from 18 to 28% from 24 to 36 months, and the percentage of students still enrolled remained unchanged at 28%. These results confirm that by 36 months, a greater proportion of MAT Dev-Intermediate students had experienced some level of college success on the three measures than at the 24-month mark.

### Who Are the FastStart English Students?

This section presents demographic characteristics of students enrolled in two course sequences that combine English and reading. The first sequence is labeled ENG Dev-Advanced, and it refers to a three-course sequence in REA 060, REA 090, and ENG 090 that occurs during a one-semester time period. The other course sequence is labeled ENG Dev-Intermediate, and it refers to REA 060, REA 090, ENG 060, and ENG 090, which are delivered in a one-semester time period.

A brief summary of the demographic characteristics of the two groups follows (also see Table 8):

- The vast majority of the ENG Dev-Advanced group were female, minority, and ESL learners, with only 28% of the group indicating their native language was English. A relatively small percentage of this group were 23 years of age or older and below high school or GED completer.
- The ENG Dev-Intermediate group was similar to the ENG Dev-Advanced group, except a higher percentage of the students in this group were male and 23 years of age or older.

An especially important characteristic of the FastStart English cohorts was the large proportion of students who were ESL learners, with as high as 72% of the ENG Dev-Advanced and 80% of the ENG Dev-Intermediate students being ESL learners, based on self-report. These results suggest, based on the numbers alone, that FastStart may be a potentially important pathway for these students to enter CCD and advance to college-level course work.

**Table 8**

**Demographics of FastStart English Cohorts by Term of Entry**

Cohort by Entry Term	n	Percentage 23+ (Nontrad.)	Percentage Female	Percentage Minority	Percentage Below High School or GED	Percentage Pell <sup>1</sup>	Percentage Native Language English <sup>2</sup>
<b>ENG Dev-Advanced</b>							
Spring 07	17	23.5	82.4	82.4	5.9	58.8	41.2
Fall 07	21	14.3	85.7	66.7	14.3	47.6	23.8
Spring 08	12	8.3	75.0	66.7	16.7	58.3	16.7
Cumulative weighted average	50	16.0	82.0	72.0	12.0	54.0	28.0
<b>ENG Dev-Intermediate</b>							
Spring 06	11	9.0	81.2	63.6	18.2	54.5	36.4
Fall 06	32	21.9	50.0	84.4	12.5	46.9	31.3
Spring 07	11	36.4	54.5	63.6	18.2	45.5	18.2
Fall 07	20	10.0	60.0	70.0	5.0	55.0	10.0
Spring 08	16	31.3	68.8	87.5	18.8	93.8	0
Cumulative weighted average	90	21.1	59.9	76.7	13.4	57.8	20.0

<sup>1</sup> Pell is a self-reported, optional field on the Community College of Denver (CCD) enrollment form, and missing data in this field raise questions about the reliability of this variable.

<sup>2</sup> English as a second language (ESL) is a self-reported, optional field on the CCD enrollment form. Also included in the ESL designation is previous ESL enrollment; however, missing data raise questions about the reliability of this variable.

## Developmental Progression Measures

This section presents 24-month results for FastStart ENG Dev-Advanced and ENG Dev-Intermediate cohorts on five developmental measures:

- a) Percentage completed REA060 with a passing grade of C or higher,
- b) Percentage completed REA090 with a passing grade of C or higher,
- c) Percentage completed ENG060 with a passing grade of C or higher,
- d) Percentage completed ENG090 with a passing grade of C or higher, and
- e) Percentage completed the English gatekeeper course with a passing grade of C or higher.

Results are presented for each cohort and are aggregated for all cohorts associated with each developmental course sequence. The aggregate computation of 24-month follow-up results is weighted to take into account the different number of students in each cohort.

Table 9 shows that a high percentage of students enrolled in the FastStart English cohorts, particularly ENG Dev-Advanced, completed their developmental English and reading courses, and passed the English gatekeeper course by the 24-month mark. About two-thirds of the ENG Dev-Advanced cohort completed the English gatekeeper course with a passing grade of C or higher, and more than 40% of the ENG Dev-Intermediate cohort were successful in completing the English gatekeeper course.

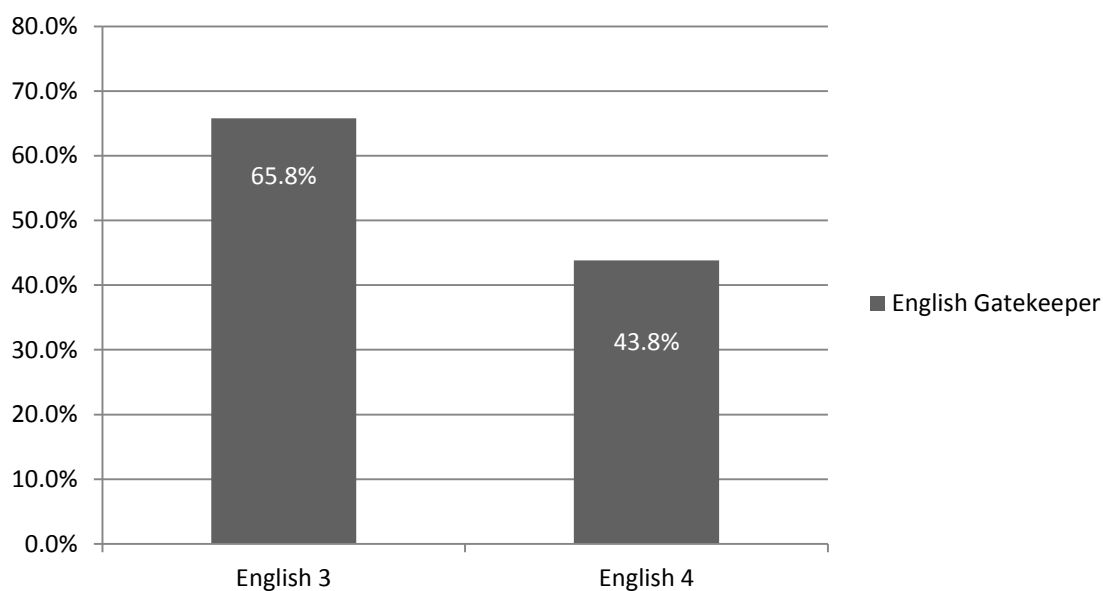
**Table 9**

### 24-Month Follow-up of FastStart English Cohorts on Developmental English Progression by Term of Entry

Cohort by Entry Term	n	Percentage Completed REA060	Percentage Completed REA090	Percentage Completed ENG060	Percentage Completed ENG090	Percentage Completed English Gatekeeper Course
<b>ENG Dev-Advanced</b>						
Spring 07	17	100.0	94.1	NA	94.1	<b>76.5</b>
Fall 07	21	95.2	61.9	NA	71.4	<b>52.4</b>
Spring 08	12	91.7	91.7	NA	97.7	<b>74.0</b>
Cumulative weighted average	50	96.0	80.0	NA	85.4	<b>65.8</b>
<b>ENG Dev-Intermediate</b>						
Spring 06	11	81.1	63.6	90.9	63.6	<b>54.5</b>
Fall 06	32	93.8	81.3	93.8	78.1	<b>43.8</b>
Spring 07	11	90.9	81.8	90.9	81.8	<b>36.4</b>
Fall 07	20	90.0	75.0	90.0	70.0	<b>40.0</b>

Cohort by Entry Term	n	Percentage Completed REA060	Percentage Completed REA090	Percentage Completed ENG060	Percentage Completed ENG090	Percentage Completed English Gatekeeper Course
Spring 08	16	93.8	81.3	93.8	75.0	<b>43.8</b>
Cumulative weighted average	90	91.0	77.8	92.2	74.4	<b>43.4</b>

Figure 8 displays the percentage of ENG Dev-Advanced and ENG Dev-Intermediate students that had completed the English gatekeeper course at 24 months. Results showed a difference of more than 20 percentage points in passing the English gatekeeper course for students taking the three-course sequence associated with ENG Dev-Advanced as compared with ENG Dev-Intermediate, which has a four-course sequence.



**Figure 8. Percentage of ENG Dev-Advanced and ENG Dev-Intermediate cohorts that had completed the English gatekeeper course in 24 months.**

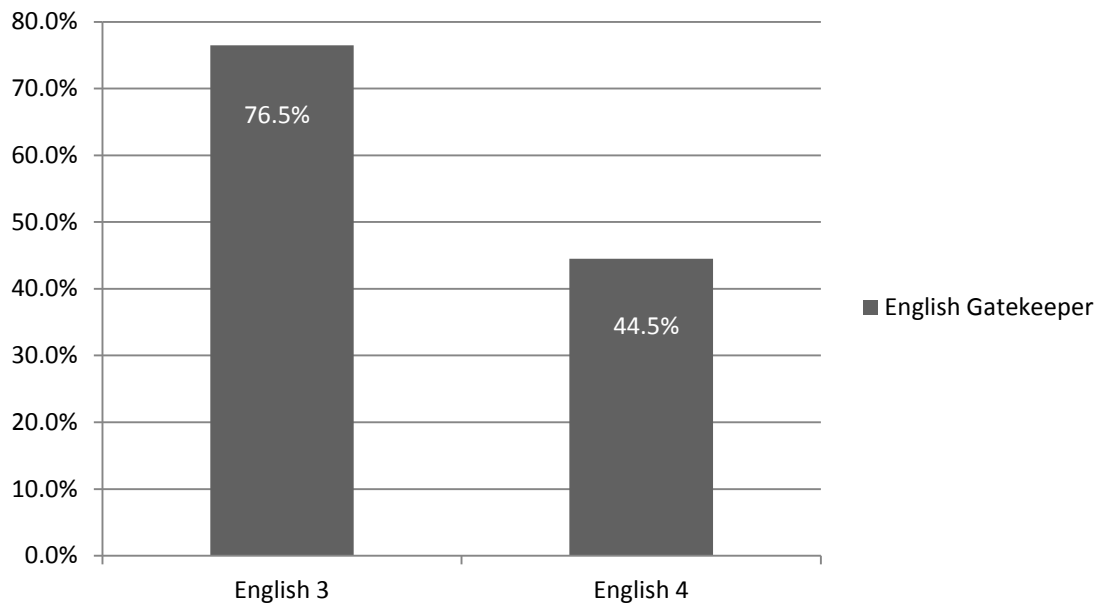
By 36 months, the percentages of ENG Dev-Advanced and ENG Dev-Intermediate students who had completed the English gatekeeper course had increased slightly for the ENG Dev-Intermediate group, but had increased substantially for the ENG Dev-Advanced cohort (see Table 10 and Figure 9). At 36 months, the gap for success in passing the English gatekeeper course between ENG Dev-Advanced and ENG Dev-Intermediate was quite sizeable, with the ENG Dev-Advanced cohort being 20 percentage points higher than the ENG Dev-Intermediate cohort, at 77 and 45%, respectively.



**Table 10**

**36-Month Follow-up of FastStart English Cohorts on Developmental Progression by Term of Entry**

Cohort by Entry Term	n	Percentage Completed REA060	Percentage Completed REA090	Percentage Completed ENG060	Percentage Completed ENG090	Percentage Completed English Gatekeeper Course
<b>ENG Dev-Advanced</b>						
Spring 07	17	100.0	94.1	NA	94.1	<b>76.5</b>
<b>ENG Dev-Intermediate</b>						
Spring 06	11	81.8	63.6	90.9	63.6	<b>54.5</b>
Fall 06	32	93.8	81.3	93.8	78.1	<b>43.8</b>
Spring 07	11	90.9	81.8	90.9	81.8	<b>36.4</b>
Cumulative weighted average	54	90.8	77.8	92.6	75.9	<b>44.5</b>



**Figure 9. Percentages of ENG Dev-Advanced and ENG Dev-Intermediate cohorts that had completed the English gatekeeper course in 36 months.**

## College Completion Measures

Table 11 presents 24-month results for college completion measures, and Table 12 shows results at the 36-month mark. Results were computed as the average for each cohort and as an aggregate weighted average for all groups. The college completion measures are as follows:

- a) percentage who graduated with a certificate(s),
- b) percentage who graduated with a 2-year degree,
- c) percentage who transferred,
- d) percentage still enrolled, with an average number of college credits passed, and
- e) percentage of “college success,” which represents the aggregate of the aforementioned completion measures.

The results shown in these tables reinforce the pattern of success evident in the previous section on developmental progression, with ENG Dev-Advanced students showing higher results on the college success measures than the ENG Dev-Intermediate cohort. It is important to point out, however, that nearly half of the ENG Dev-Intermediate students demonstrated positive outcomes for college success.

**Table 11**

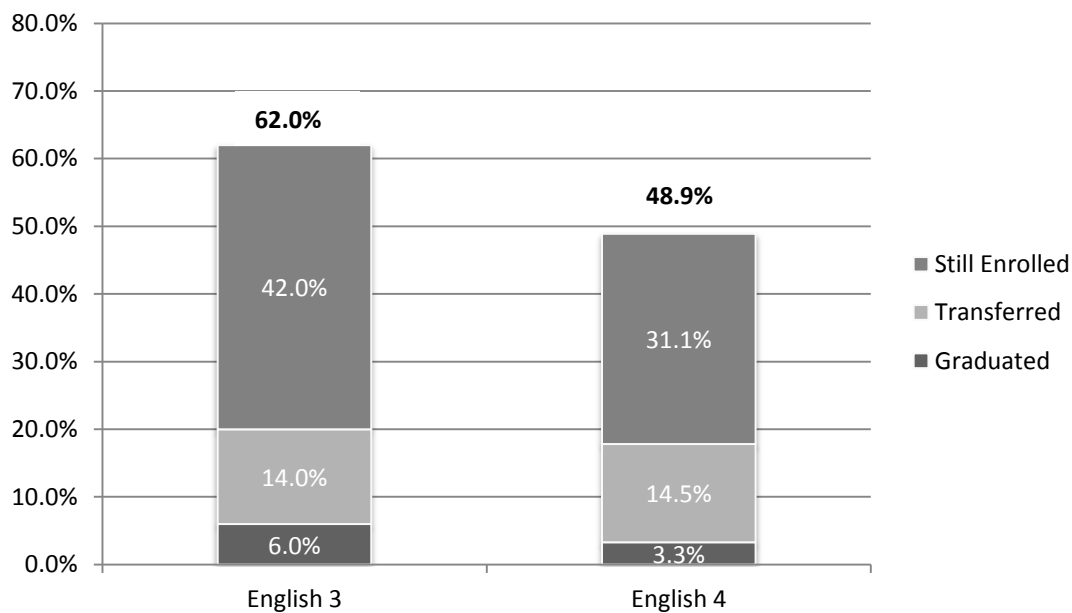
### 24-Month Follow-up of FastStart English Cohorts on College Completion by Term of Entry

Cohort by Entry Term	n	Percentage with Certificate	Percentage Grad with 2-Year Degree	Percentage Transferred	Percentage Still Enrolled (Mean College Credits)	Percentage Success <sup>1</sup>
<b>ENG Dev-Advanced</b>						
Spring 07	17	0	5.9	17.6	41.2 (26.1)	<b>64.7</b>
Fall 07	21	4.8	4.8	19.0	33.3 (15.4)	<b>61.9</b>
Spring 08	12	0	0	0	58.3 (24.3)	<b>58.3</b>
Cumulative weighted average	50	2.0	4.0	14.0	42.0 (21.2)	<b>62.0</b>
<b>ENG Dev-Intermediate</b>						
Spring 06	11	0	0	18.2	45.5 (15.2)	<b>63.7</b>
Fall 06	32	0	6.3	12.5	25.0 (30.8)	<b>43.8</b>
Spring 07	11	9.1	0	9.1	45.5 (22.4)	<b>63.7</b>
Fall 07	20	0	0	20.0	25.0 (20.0)	<b>45.0</b>
Spring 08	16	0	0	12.5	31.3	<b>43.8</b>

Cohort by Entry Term	n	Percentage with Certificate	Percentage Grad with 2-Year Degree	Percentage Transferred	Percentage Still Enrolled (Mean College Credits)	Percentage Success <sup>1</sup>
					(11.2)	
Cumulative weighted average	90	1.1	2.2	14.5	31.1 (21.2)	<b>48.9</b>

<sup>1</sup>Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at the 24- and 36-month mark after initial enrollment in the FastStart program.

Table 11 and Figure 10 show that more than 60% of the ENG Dev-Advanced and more than 50% of the ENG Dev-Intermediate students had demonstrated some level of college success in that they had graduated, had transferred, or were still enrolled. Success associated with ENG Dev-Advanced relative to ENG Dev-Intermediate was attributable to the smaller number of developmental courses that the students needed to take in the ENG Dev-Advanced program as well as the tendency to enroll ESL students who were highly motivated to advance to college-level instruction. The success of the ENG Dev-Advanced group is apparent in all the developmental progression and college completion measures included in this analysis.



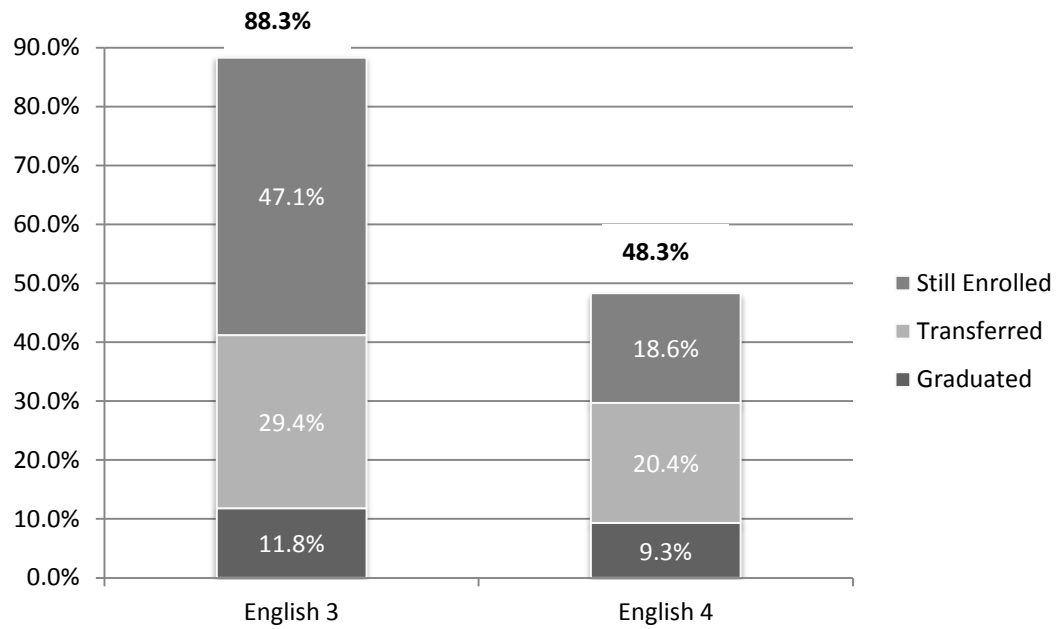
**Figure 10. College success (certificate or degree completion, transferred, or still enrolled) for ENG Dev-Advanced and ENG Dev-Intermediate at 24 months.**

**Table 12****36-Month Follow-up of FastStart English Cohorts on College Completion by Term of Entry**

Cohort by Entry Term	n	Percentage with Certificate	Percentage Grad with 2-Year Degree	Percentage Transferred	Percentage Still Enrolled (Mean Total College Credits)	Percentage Success <sup>1</sup>
<b>ENG Dev-Advanced</b>						
Spring 07	17	0	11.8	29.4	47.1 (39.4)	<b>88.3</b>
<b>ENG Dev-Intermediate</b>						
Spring 06	11	0	0	27.3	9.1 (26.0)	<b>36.4</b>
Fall 06	32	3.1	9.4	18.8	18.8 (34.5)	<b>50.1</b>
Spring 07	11	9.1	0	18.2	27.3 (36.0)	<b>54.6</b>
Cumulative weighted average	54	3.7	5.6	20.4	18.6 (33.1)	<b>48.3</b>

<sup>1</sup>Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at 24 or 36 months after initial enrollment in the FastStart program.

By 36 months, the success of the ENG Dev-Advanced cohort compared with the ENG Dev-Intermediate students was even more evident than at 24 months. As Figure 11 shows, at the 36-month mark, the performance of the ENG Dev-Advanced cohort exceeded that of the ENG Dev-Intermediate cohort on all three measures contributing to college success, particularly the retention measure. Specifically, 47% of the ENG Dev-Advanced group, compared with 19% of the ENG Dev-Intermediate group, was still enrolled after 3 years of initial enrollment in the FastStart program. In addition, for ENG Dev-Advanced relative to ENG Dev-Intermediate, 47% continued enrollment, 29% transferred, and 12% graduated, totaling nearly 90% college success compared with just under 50% for ENG Dev-Intermediate, wherein almost 19% were still enrolled, 20% had transferred, and 9% had graduated.



**Figure 11. College success (certificate or degree completion, transferred, or still enrolled) for ENG Dev-Advanced and ENG Dev-Intermediate at 36 months.**

#### **Change from 24 to 36 Months**

Results are presented on the developmental progression and college success of the FastStart ENG Dev-Advanced and ENG Dev-Intermediate cohorts at 24 and 36 months. One cohort was included in the analysis of ENG Dev-Advanced and three cohorts were included in the analysis of ENG Dev-Intermediate because of the length of time these cohorts had been enrolled and the opportunity that students affiliated with these groups had to enroll for both 24 and 36 months.

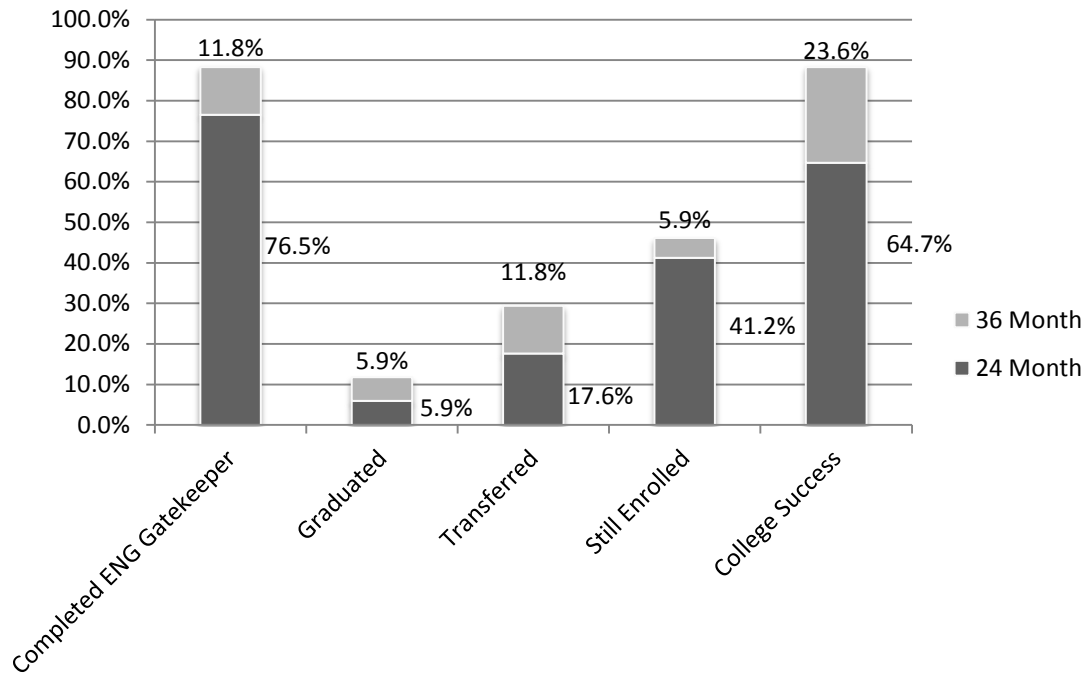
**Table 13****Gain in Developmental Progression and on College Success Measures for FastStart ENG Dev-Advanced Cohorts at 24 and 36 Months<sup>1</sup>**

FastStart ENG Dev-Advanced Cohort (Spring 07)	n	Percentage Completed English Gatekeeper Course	Percentage Graduated	Percentage Transferred	Percentage Still Enrolled	Percentage Success <sup>2</sup>
24-Month Interval (cumulative weighted average)	17	76.5	5.9	17.6	41.2	64.7
36-Month Interval (cumulative weighted average)	17	76.5	11.8	29.4	47.1	88.3
<b>Gain from 24 to 36 Months</b>	<b>17</b>	<b>0</b>	<b>+5.9</b>	<b>+11.8</b>	<b>+5.9</b>	<b>+23.6</b>

<sup>1</sup>This analysis includes only the Spring 07 cohort because this cohort was the only one that had been enrolled for a sufficient time to show results at 24 and 36 months. The Fall 07 and Spring 08 cohorts did not have sufficient enrollment time for the 36-month measurement.

<sup>2</sup>Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at the 24- and 36-month mark after initial enrollment in the FastStart program.

Figure 12 shows positive change in every measure of developmental progression and college success for the ENG Dev-Advanced cohort. Most impressive, the overall success of the ENG Dev-Advanced cohort at 36 months was nearly 90%, suggesting that of all the FastStart programs, the ENG Dev-Advanced program showed the most overall success.



**Figure 12. FastStart ENG Dev-Advanced students at 24 and 36 months on English gatekeeper and college success.**

**Table 14**

**Gain in Developmental Progression and on College Success Measures for FastStart ENG Dev-Intermediate Cohorts at 24 and 36 Months<sup>2</sup>**

FastStart ENG Dev-Advanced Cohorts (Spring 06, Fall 06, Spring 07)	n	Percentage Completed English Gatekeeper Course	Percentage Graduated	Percentage Transferred	Percentage Still Enrolled	Percentage Success <sup>1</sup>
24-Month Interval (cumulative weighted average)	54	44.5	5.6	13.0	33.4	52.0
36-Month Interval (cumulative weighted average)	54	44.5	9.6	22.3	18.6	50.5
Gain from 24 to 36 Months	<b>54</b>	<b>0</b>	<b>+4.0</b>	<b>+9.3</b>	<b>-14.8</b>	<b>-1.5</b>

<sup>1</sup> This analysis includes the Spring 06, Fall 06, and Spring 07 cohorts because these cohorts had been enrolled for a sufficient time to show results at 24 and 36 months. Cohorts enrolled in Fall 07 and Spring 08 did not have sufficient enrollment time for the 36-month measurement.

<sup>2</sup> Success is a comprehensive measure that counts students who had graduated with a certificate or degree, had transferred, or were still enrolled at the Community College of Denver at the 24- and 36-month mark after initial enrollment in the FastStart program.

Figure 13 shows no change in ENG Dev-Advanced students passing the English gatekeeper course at 36 months relative to 24 months, but positive changes were registered in both graduation and retention. A modest increase (4%) was observed in graduation and a more sizeable increase was seen in transfer (9%), and these students accounted for most of the drop in the percentage of ENG Dev-Advanced students who were still enrolled at 36 months. The overall college success measure showed a slight decrease from 24 to 36 months, reflecting a small amount of attrition.

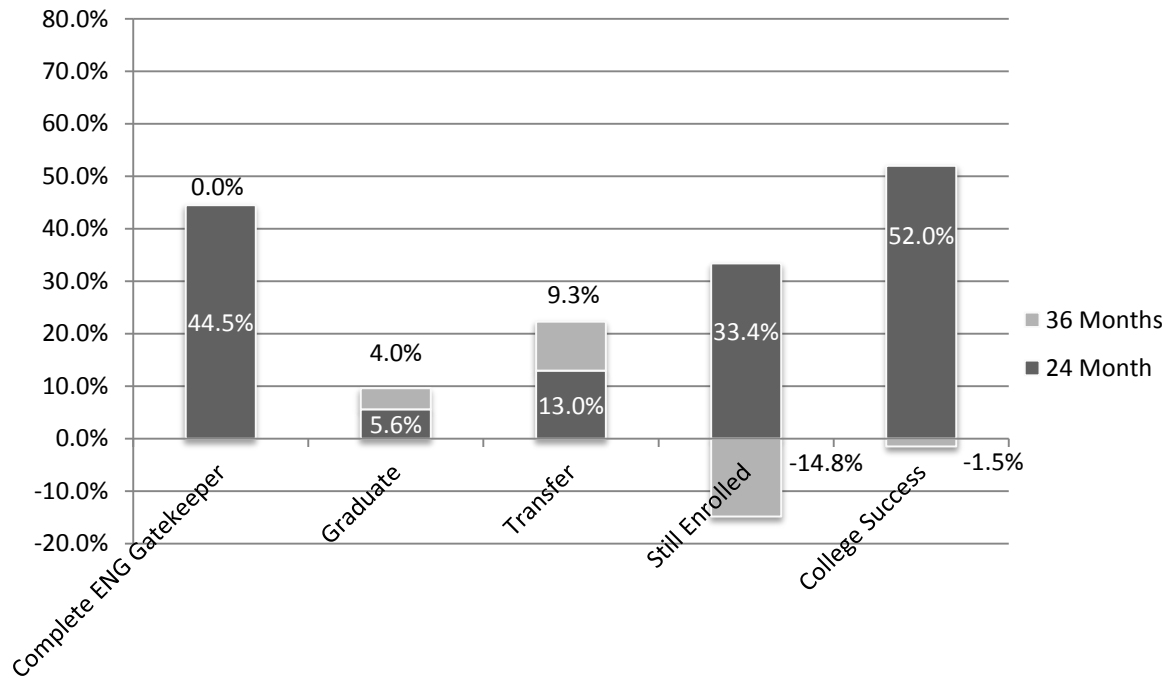


Figure 13. FastStart ENG Dev-Intermediate students at 24 and 36 months on English gatekeeper course completion and college success.



## Summary of Key Findings and Conclusions

Addressing the needs of all developmental education students is important to the entire Colorado Community College System (CCCS), with more than 47,000 students enrolled in developmental or remedial education courses in the state's community college system. The Community College of Denver (CCD) is the largest, and arguably the best known, community college in the Colorado system, heightening the importance of CCD to serve as a model for the rest of the state. Specifically, CCD accounts for more than 21% of the entire state's remedial course enrollments, and nearly 40% of CCD's total student population is made up of remedial enrollments (CCCS, 2010a). As part of CCD's portfolio of developmental education strategies, the FastStart program is an important means of enhancing the quality of developmental education and student success. Improving developmental education progression to college so that more of CCD students complete college courses and attain credentials is a critical goal, leading to this study investigating how FastStart students perform on developmental progression and student success measures.

This report describes student outcomes by including multiple cohorts enrolled in three accelerated developmental math sequences (MAT Dev-Basic, MAT Dev-Intermediate, and MAT Dev-Advanced), and two English/reading sequences (ENG Dev-Advanced and ENG Dev-Intermediate). Measures of developmental progression and college success were computed, including certificate and 2-year degree completion, transfer, retention (still enrolled), and college credits at 24 and 36 months. Gains were analyzed for the FastStart math and English/reading cohorts from 24 to 36 months to understand the change (gain) in developmental progression and college-level outcomes at 24 months and for selected cohorts that had sufficient time to be enrolled for 36 months.

The major findings of this 24- and 36-month tracking study are as follows:

**Finding 1: The diverse cohorts of CCD's FastStart math students outperformed CCD's general remedial math student population on remedial course progression, based on results of this study and results of a 48-month math tracking study performed by CCCS (2009).**

Results from a 48-month tracking study performed by CCCS (2009) and compared with results of this follow-up study provide insights into FastStart student performance relative to the general CCD remedial student population. Scores of MAT Dev-Basic students exceeded those of the general population of students taking MAT 030 on measures of developmental progression and completion of the math gatekeeper course despite the fact that FastStart MAT students had been enrolled a maximum of 36 months compared with 48 months for those in MAT 030. Although the results for MAT Dev-Basic are modest compared with those of other groups, the outcomes for the lowest level of developmental students at CCD are promising relative to the outcomes for the general population of CCD developmental students.

**Finding 2: The closer students were to college level when entering in the FastStart math sequences and English/reading sequences, the more successful they were at achieving positive outcomes on developmental progression and college success.**

At 24 months, the success of the three FastStart programs was aligned with students' starting points, with 46% of MAT Dev-Advanced students passing the gatekeeper course compared with 33% of MAT Dev-Intermediate students and 11% of students in MAT Dev-Basic. This pattern persisted for MAT Dev-Intermediate and MAT Dev-Basic students enrolled at 36 months (36-month results were not yet available for MAT Dev-Advanced). Compared with fairly modest results for the MAT Dev-Basic students, an impressive 72% of MAT Dev-Intermediate and 84% of MAT Dev-Advanced students completed the developmental math sequence in 24 months, and these results compared very favorably with results of the CCCS math tracking study for the general CCD developmental student

population. They also surpassed results reported by Norton Grubb (1998, p. 17, as cited in Corash, Baker, & Nawrocki, 2009), suggesting that only 25% of students who require nine or more credits of remedial course work complete the remedial sequence in 5 years. Results at 24 months for the MAT Dev-Advanced group exceeded those reported by Bailey et al. (2010) using a national data set compiled from institutions participating in Achieving the Dream.

Results for ENG Dev-Advanced are especially important, with 88% of ENG Dev-Advanced students showing positive outcomes on developmental progression and college success measures compared with 48% of ENG Dev-Intermediate students. ENG Dev-Advanced students who took three remedial courses in English/reading showed a clear advantage over ENG Dev-Intermediate students who took four remedial courses. This result is attributable to the number of remedial courses required of students, and possibly the higher motivation level of ENG Dev-Advanced students. The ENG Dev-Advanced students were the only ones to make additional developmental progress beyond 24 months compared with students in other FastStart math combinations and those in ENG Dev-Intermediate.

**Finding 3: The initial period of enrollment was important to developmental progression, with little change in such outcomes as passing the developmental course sequences and gatekeeper courses for FastStart students in either math or English.**

Little change was registered in developmental progression measures in MAT Dev-Basic and MAT Dev-Intermediate from 24 to 36 months, suggesting the importance of students starting their developmental studies in a deliberate fashion and staying on track with enrollment to the college level. The fact that there was virtually no change in the rates at which MAT Dev-Basic and MAT Dev-Intermediate math were passed between 24 and 36 months suggests that students who do not complete the remediation sequence by 24 months are not likely to complete it in more time, although this result would be strengthened with a measurement at 48 months. This same pattern of results was evident in ENG Dev-Intermediate. As mentioned above, the one exception was ENG Dev-Advanced, in which students experienced substantial success in the three-course English/reading sequence over 24 and 36 months. It is important for the higher level of success of students in English to be confirmed by other studies of developmental education, including the report by Bailey et al. (2010).

**Finding 4: When conducting follow-up studies, it is important to define college success in multiple ways, including retention (continued enrollment), transfer, and graduation.**

These results reinforce the importance of determining college success in multiple ways, including retention in college-level courses, transfer, and graduation with credentials, such as certificates and 2-year degrees. Because of the multiple options available to students who enroll in FastStart for continuing their education, it is important to examine retention, transfer, and graduation. In fact, CCD is noted as a transfer institution in the state community college system, with 24% of its students transferring between Fall 2007 and Fall 2008 (CCCS, 2010b). When comparing documented transfers in recent years (CCCS, 2010b), it is important to look at multiple measures of completion. These college success measures need to be tracked for at least 36 months, and optimally to 48 months and beyond. The change in college success measures was especially evident for the intermediate and advanced math and English cohorts.

In conclusion, the accelerated FastStart model shows promise for students testing into multiple levels of remediation in developmental math and English/reading, particularly in those combinations that place students a couple of courses below college level in a single subject. (Results are also impressive for students who place one course below college level, although the data are limited to one cohort only; more follow-up is needed to confirm

these findings.) These results reinforce recent findings (see, for example, Bailey, Jeong, & Cho, S. [2008]) that show the more developmental courses that students are required to take in a specific subject, the less likely they are to complete the sequence and pass the gatekeeper course. Accelerated programs such as FastStart are well suited for students who are on close to college-level instruction. These students, in particular, seem to be most able to benefit from a compressed remedial learning experience that accelerates them to gatekeeper courses and on to collegiate studies.

Although the initial results of this study are encouraging, more time is needed to verify college success in terms of the multiple options that FastStart students can pursue, including retention and credit accumulation, transfer, and attainment of credentials. Additional follow-up research is needed on the FastStart program to determine the ultimate success that students will attain in pursuing their college goals and outcomes. Further, more sophisticated research designs are needed to build on this descriptive study and assess the success of the FastStart program relative to other developmental program options. Such results could have far-reaching importance to community college developmental education at CCD and at community college throughout the country. Given the leading role that CCD has played nationally with FastStart, the institution is situated optimally to engage in additional research and inform national audiences of the potential of accelerated developmental education to enhance success for students seeking a community college education.

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