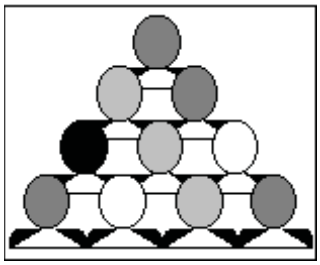

Research Report
No. 09-3

Washington State Board for Community and Technical Colleges

ROLE OF PRE-COLLEGE (DEVELOPMENTAL AND REMEDIAL) EDUCATION FOR RECENT HIGH SCHOOL GRADUATES ATTENDING WASHINGTON COMMUNITY AND TECHNICAL COLLEGES

SYSTEM SUMMARY FOR STUDENTS ENROLLED IN 2007-08

Revised December 2010

Key Findings

- Fifty-three (53) percent of community and technical college students who graduated from high school in 2007 took pre-college (also known as remedial) classes in 2007-08. These students – totaling 12,432 – enrolled in pre-college math, English or reading.
- Forty-six (46) percent of community and technical college students who graduated from high school in 2007 took pre-college math courses.
- Thirty-one (31) percent of 2007 high school graduates enrolled in the community and technical colleges in 2007-08 took no math or other quantitative reasoning courses during their first year of college and had no record of previously completing the math required for an associate degree. Colleges are implementing strategies to ensure that more students take math early in their time at college.
- Within three years of high school graduation, about half (45 percent) of all high school graduates have enrolled at a community or technical college in Washington. More than a third (35 percent) of high school graduates enroll immediately in community and technical colleges, and an additional 10 percent enroll within one or two years after high school graduation.

This report provides information on these enrollment trends as required by RCW 28B.10.685. This system summary highlights the high school graduates who attended a community or technical college in the year following graduation (Part A and B). Part C provides information on the students who delayed enrollment at the college for one or two years after high school graduation. Part D describes the expenditures for pre-college courses.

SBCTC
WASHINGTON STATE BOARD FOR COMMUNITY & TECHNICAL COLLEGES

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Part A
College Going Pattern of High School Graduates

Thirty-five (35) percent of Washington's new high school graduates enrolled at community or technical colleges in the year following high school[1]. About another 5 percent enter a community or technical college after waiting a year or two and another 5 percent reverse the transfer pattern by first attending a four-year or out-of-state college and then transfer to a community or technical college within a year or two of high school graduation.

Public and Private High School Graduates Going Straight to Community and Technical Colleges*

	2003	2004	2005	2006	2007
Statewide Graduates					
Public & Private High Schools	64,325	65,417	65,408	64,673	67,137
Enrolled (estimates 2001 to 2003)	24,679	24,131	23,724	24,127	23,561
% of Statewide Graduates	38%	37%	36%	37%	35%

* Most enter in summer or fall after high school

Part B
Statewide Trends in Pre-College Course Taking at Community and Technical Colleges

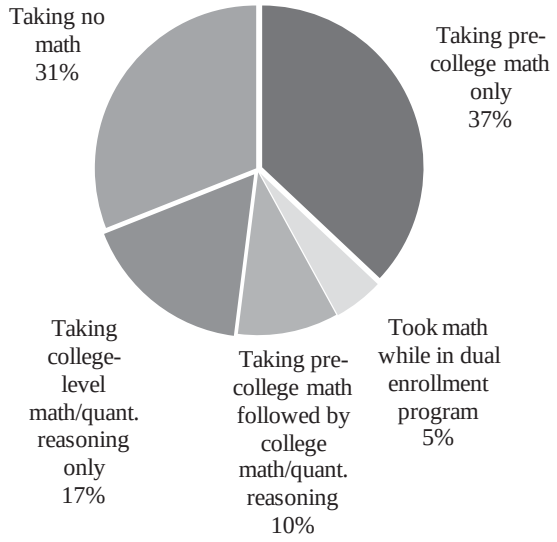
Pre-College Course Enrollments by CTC Students Attending Immediately After High School

	2004-05	2005-06	2006-07	2007-08
Pre-College Math	11,439	10,855	10,970	10,939
% Taking Pre-College Math	47%	46%	45%	46%
Pre-College Writing	4,471	4,083	3,964	4,075
% Taking Pre-College Writing	19%	17%	16%	17%
Pre-College Reading	2,561	2,254	2,353	2,336
% Taking Pre-College Reading	11%	10%	10%	10%
Any Pre-College Course	13,098	12,328	12,468	12,432
% Taking Any Pre-College	54%	52%	52%	53%

[1] Students are classified as recent high school graduates by both self identification and a data probability match to the most recent graduating class of high school students. The probability match is needed because students who participate in high school and college dual enrollment programs do not always change their graduation status when returning as a college student. Beginning in 2008-09, the source of secondary data became more reliable as new technologies were obtained. Reports done prior to that year may have slightly over-counted the number of graduates enrolled.

Math Enrollment in First Year of College: Most certificate programs and all associate degrees require completion of a college-level math or quantitative reasoning course. Researchers find that students are most likely to complete their college program if they successfully complete either the highest level of pre-college math or a college-level math course *during their first year of college.* While 69 percent of community and technical college students from the class of 2007 either already had completed math in their dual enrollment program or were completing math classes during the first year after high school, 31 percent of high school graduates took no math of any kind during the first year at college.

High School Graduates by Math Choices in First Year at CTC



Variation by Demographic Characteristics: Female and students of color high school graduates are slightly more likely than males and whites to enroll in pre-college courses.

Pre-College Course Taking Pattern by Demographic Characteristics

	Females	Males	Asian/ Pacific Islander	African American	Native American	Latino	Other Race	White
Enrolled	12,283	11,206	1,900	897	441	1,699	304	13,262
% of Total Enrolled	52%	48%	11%	5%	3%	10%	2%	75%
In Any Pre-College	6,800	5,615	918	500	227	968	152	5,998
% Taking Any Pre-College	55%	50%	48%	56%	52%	57%	50%	45%
In Pre-College Math	6,048	4,866	707	396	194	741	115	5,146
% Taking Pre-College Math	49%	43%	37%	44%	44%	44%	45%	39%

College-to-College Variation: Some 53 percent of 2007 high school graduates enrolled at the community and technical colleges took one or more pre-college courses in their first year of attendance. The rate of pre-college course taking at community colleges ranges from a low of 43 percent at Centralia College to 69 percent at Big Bend Community College. Several technical colleges have a lower rate, reflecting the small percentage of high school graduates attending and the nature of the technical programs taken by those high school graduates.

Number of 2007 High School Graduates Attending College
Number and Percent Enrolled in Pre-College Courses – 2007-08

College	Public and Private High School Graduates Enrolled	Taking at Least 1 Pre-College Course	% in Pre-College Courses	Taking Pre-College Math	% Taking Pre-College Math
Bates	240	50	21%	33	14%
Bellevue	2,111	889	42%	699	33%
Bellingham	208	28	13%	22	11%
Big Bend	360	250	69%	229	64%
Cascadia	489	250	51%	240	49%
Centralia	447	193	43%	181	40%
Clark	1,688	974	58%	895	53%
Clover Park	305	152	50%	134	44%
Columbia Basin	1,054	624	59%	562	53%
Edmonds	1,014	623	61%	578	57%
Everett	1,105	697	63%	531	48%
Grays Harbor	266	136	51%	23	9%
Green River	1,313	731	56%	698	53%
Highline	1,025	478	47%	428	42%
Lake Washington	171	85	50%	82	48%
Lower Columbia	413	205	50%	166	40%
Olympic	1,000	596	60%	534	53%
Peninsula	243	122	50%	106	44%
Pierce / Fort Steilacoom	778	372	48%	252	32%
Pierce / Puyallup	675	327	48%	266	39%
Renton	176	4	2%	2	1%
Seattle Central	614	294	48%	260	42%
Seattle North	348	153	44%	127	36%
Seattle South	412	191	46%	176	43%
Seattle Voc Institute	23	1	4%		0%
Shoreline	728	364	50%	333	46%
Skagit Valley	706	389	55%	355	50%
South Puget Sound	912	484	53%	427	47%
Spokane	889	434	49%	372	42%
Spokane Falls	1,259	679	54%	594	47%
Tacoma	762	515	68%	427	56%
Walla Walla	382	188	49%	185	48%
Wenatchee Valley	555	313	56%	271	49%
Whatcom	789	484	61%	455	58%
Yakima Valley	749	485	65%	365	49%
System Total*	23,561	12,342	52%	10,939	46%

*Each student counted only once even though they may have enrolled at two or more colleges during the year.

Pre-College Math: The number of recent high school students taking pre-college math is high – some 10,939 students in 2007-08. Major efforts are underway to insure that students graduate from high school better prepared and ready for college math.

One major effort is the Transition Math Project, a joint effort of K-16 leaders to define college-readiness standards in math and to align curriculum, instruction, and assessment more effectively so that more students leaving high school will be prepared for college-level work in math. These standards for math at community and technical colleges and baccalaureate institutions (http://www.transitionmathproject.org/standards.asp) clarify the foundation of math knowledge and skills students need to be successful in entry-level college math courses.

Through sixteen cross-sector partnerships in regions all around Washington, the Transition Mathematics Project is developing model products and promising practices to help high school students gain the knowledge and skills needed for college math – to meet the College Readiness Standards. One such effort, Project TIME, in South King County has developed a new Senior Math Course (http://www.instruction.greenriver.edu/projecttime/). Other projects are focused on developing models for math teacher professional development, integrating the standards with applied math in career technical education contexts, and public outreach to students and parents about the importance of math preparation for students' next steps beyond high school. More information about these partnerships can be found at http://www.transitionmathproject.org/partners/local_partnerships.asp.

Current College Readiness Standards are above the statewide minimum math requirements for high school graduation in Washington State. Providing greater clarity to teachers, students, and parents about these expectations can address the long-term goals of the Transition Math Project to increase students' math course-taking in high school and reduce the level of pre-college course-taking once in college. Part of the effort to provide more clarity involves the development of a new College Readiness Math Test based on the standards. This test will provide a clear and consistent performance target for math college readiness across the state and is slated to be available to high school juniors and seniors beginning in fall 2009. For more information about this work see http://www.transitionmathproject.org/highlights/math_placement.asp.

Students entering college with skills below the college-readiness level must take pre-college math courses before starting on their required math sequence in college. These pre-college courses do not apply to the student's degree credits and may extend the time needed to earn a college degree. College students have different college-level math sequences depending on their future major. The following are examples of these different choices:

College plans	Transfer to Business Major	Transfer to Elementary Education Major	Transfer to Engineering	Transfer to Nursing
1st year math	Finite math, Calculus for Business, Statistics	2-3 course math series designed for educators	Pre-calculus and calculus	Statistics

While pre-college course-taking extends the time and cost of college, most students who take pre-college math courses do achieve their academic goals. They successfully complete the pre-college courses and move on to complete their degrees or certificates. A study of recent baccalaureate graduates found that 48 percent of those who started at the community and technical colleges straight from high school had taken a pre-college course, most often math. Those students graduated at high rates in all major fields, and with senior-year GPAs comparable to students who did not take pre-college courses, and to students who started at the university (2.95 for younger CTC transfers with pre-college course, 3.03 for younger CTC transfers without pre-college courses, and 2.98 for direct-entry students).

High school graduates enrolled with a transfer goal were more likely than those enrolled for workforce purposes to take pre-college math. Nearly two-thirds (65 percent) of the class of 2007 enrolled in the CTC system had a transfer goal. That group accounted for 70 percent of the high school graduates enrolled in pre-college math classes. The math expectations for students with a workforce goal have grown in recent years, thus a significant proportion of workforce student (between 44 and 46 percent) also enroll in pre-college math.

Pre-College Course Enrollments by Purpose for Attending their CTC

	2003-04	2004-05	2005-06	2006-07	2007-08
Transfer goal*	17,863	17,302	16,694	16,716	17,204
Pre College Math	9,349	9,294	8,726	8,791	9,006
% Taking Pre-College Math	52%	54%	52%	53%	52%
Workforce goal*	9,285	9,408	9,225	9,074	9,084
Pre College Math	4,208	4,244	4,082	3,942	3,869
% Taking Pre-College Math	45%	45%	44%	43%	43%

* Graduates may be enrolled for both a workforce and transfer goal in the same year.

Pre-College Writing and Reading: Statewide, 17 percent of recent high school graduates take pre-college writing at a community or technical college before taking college-level writing courses. Statewide, 10 percent of recent high school graduates take pre-college reading classes at a community or technical college. Teachers in K-12 and faculty at colleges and universities are in the process of finalizing college-readiness standards related to English writing and reading. The draft standards are available at: http://www.learningconnections.org/clc/hecb.htm.

Part C
Statewide Trends in Students Who Delayed Entering College for One or Two Years After High School Enrollment in Pre-College Courses

RCW 28B.10.685 requires the State Board to report on the course-taking pattern for high school graduates from the past three years. While many high school students attend community or technical colleges in the year immediately after high school, some who start at a university enter a community college a year or two after high school (reverse transfer) and a smaller number of high school graduates wait one to two years to attend college. Students who attend community and technical colleges with a delay of one or two years after high school graduation include:

- Twenty-eight (28) percent who had not attended college immediately after high school and now were enrolled to prepare for transfer. Forty-five percent of this group (45 percent) took at least one pre-college course.
- Twenty-three (23) percent who had not attended college immediately after high school and enrolled in two-year colleges for short-term programs such as workforce certificates not requiring college-level skills in math. Nearly two-thirds of these students (65 percent) do not take pre-college courses.
- Forty-eight (48 percent) of the remaining students started at a Washington baccalaureate institution or out-of state college or university and transferred in with some credits already earned. These students may have already completed college-level math and English courses. Most students in this group (82 percent) do not take pre-college courses.

The high school graduates who take a year off from school before attending a community or technical colleges and who plan to transfer enroll in pre-college courses in a pattern that mirrors the students who come directly from high school (Part B). The other delayed-entry high school graduates are less likely to enroll in pre-college courses.

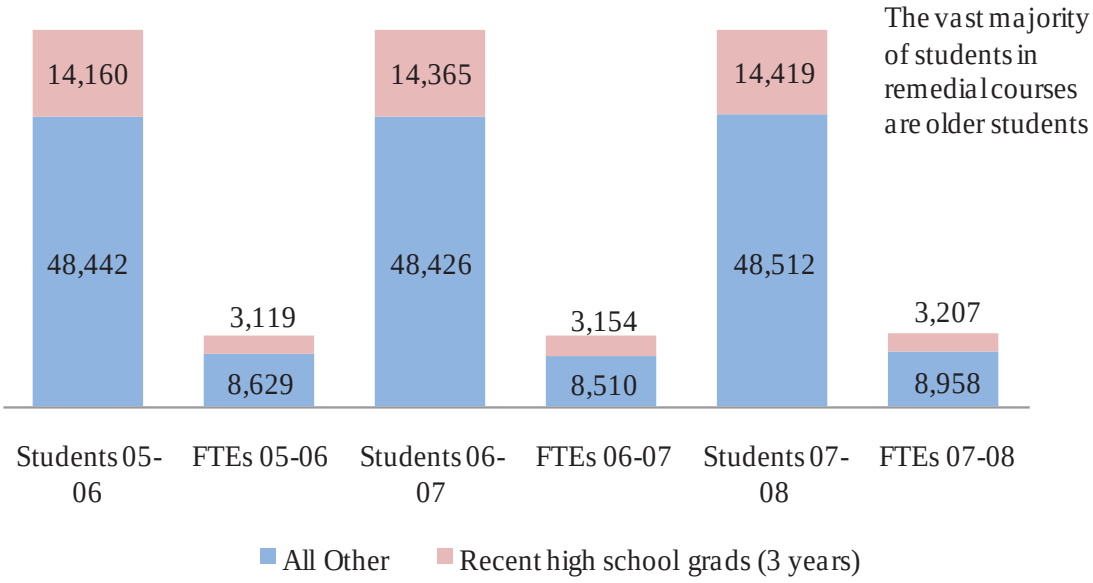
Statewide Trend in Pre-College Course Taking for Students Who Delayed Enrollment at CTCs for 1 or 2 Years after High School

	2003-04	2004-05	2005-06	2006-07	2007-08
1 or 2 Years Later to CTC	6,939	5,965	6,234	6,559	6,854
% of Prior Year Graduates	11%	9%	10%	10%	10%
Took Pre-College Math	1,621	1,515	1,586	1,671	1,710
% Taking Pre-College Math	23%	25%	25%	25%	25%
Took Pre-College Writing	532	517	536	467	552
% Taking Pre-College Writing	8%	9%	9%	7%	8%
Took Pre-College Reading	325	320	283	267	297
% Taking Pre-College Reading	5%	5%	5%	4%	4%
Any Pre-College Course	1,861	1,766	1,832	1,897	1,987
% Taking Any Pre-College	27%	30%	29%	29%	29%

Part D
Expenses for Pre-College Course Taking

Total Pre-College Course Taking and Recent High School Graduates: Most of the students in pre-college courses (77 percent) are older students who have been out of high school for at least three years before enrolling in their pre-college class. When taking pre-college courses, older students take slightly fewer courses over the year than recent high school graduates such that older students account for 74 percent of the total pre-college FTE.

Students and FTEs in pre-College Courses By Recent High School and All Other 2005-06 to 2007-08



Expenditures Related to Pre-College Course Taking: In 2007-08 colleges spent on average $5,227 per FTE for pre-college courses. Thus the expenditure for recent high school graduates (those attending directly after high school or within three of years of graduation) in pre-college courses was $16.8 million (3,207 FTE at $5,227 per FTE). The cost for all pre-college course work was $63.6 million. The funding for these expenditures comes from the state general fund plus the same tuition per course paid by students as they pay for college-level courses.