



UNIVERSITY
of ALASKA

Many Traditions One Alaska

Developmental Education at University of Alaska

Prepared for the Legislature of the State of Alaska

In Accordance with:

A recommendation made by
the Alaska Advisory Task Force on Higher Education and Career Readiness in 2011

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Executive Summary

In 2011 the Alaska Advisory Task Force on Higher Education and Career Readiness recommended that the University of Alaska (UA) Board of Regents review the efficacy and cost of developmental education programs and address alternative and emerging pedagogies utilized in other states. This report summarizes that review.

UA is dedicated to continuous improvement. UA's Strategic Direction Initiative specifically targets reducing the need for developmental education and improving student achievement and attainment. Board of Regents' policy regarding developmental education (P10.04.080) affirms the offering of developmental and remedial courses in basic skills to assist students in the successful completion of their educational goals.

Who are the students that require developmental education? Recent high school graduates make up less than one-third of undergraduates taking developmental courses at the University of Alaska. Students who enter or re-enter postsecondary education after pursuing work or family obligations comprise the majority of UA's developmental education participants. However, proportionally more recent high school graduates require remediation than other students seeking undergraduate degrees.

The efficacy of current developmental education programs was assessed by examining developmental and collegiate course completion rates and graduation rates and time to degree for students beginning at various levels of developmental education. The completion rate for all developmental courses is only slightly below that of non-preparatory courses. Students at the highest preparatory level are much more likely to complete collegiate coursework within one year than those requiring more developmental coursework and students requiring developmental coursework in both math and English rarely complete collegiate level coursework. Graduation rates for students requiring developmental coursework are about half that of well prepared students for both two-year and four-year programs. No students who required remediation in both math and English at the lowest level of preparation in both areas graduated with their intended degree within 150 percent of the nominal time for their degree programs for any year examined.

UA has examined alternative and emerging pedagogies that show promise, especially those practices being utilized in other states. A great deal of work on improved course placement processes has been accomplished recently. For example, common English placement across the UA system is now a reality; this change significantly reduced the need for English remediation at UAA, UA's largest institution. The report summarizes ongoing implementation and assessment of new developmental practices and pedagogies that appear appropriate for Alaska's postsecondary population. In particular, placing better prepared English developmental students into collegiate level coursework with additional required support, intensive coursework intended to bring developmental students up to collegiate level in a shorter time period, and alternative curricular pathways for students have been implemented; the success of these programs will be examined after a few years to assess efficacy.

The report also summarizes the cost of developmental programs. Part-time adjunct faculty teach a substantial portion of developmental coursework, which helps keep costs down. Developmental education tuition revenue across the UA system fully covers the cost of that coursework.

During the next year, the results of this summary will be shared with faculty and administrators at UA's institutions and revisions to course placement and developmental education policy discussed and implemented as appropriate.

Table of Contents

Introduction.....3

Successful Remediation.....6

Graduation Rates8

Time to Degree10

Cost of Developmental Programs11

Improving Student Success in Developmental Education and Freshman-level Courses12

Conclusion16

Introduction

This report constitutes the University of Alaska's response to a specific recommendation made by the Alaska Advisory Task Force on Higher Education and Career Readiness (HECR) in its 2011 report. In that report, Recommendation 3.H provides as follows:

The University of Alaska Board of Regents should review their current models of providing developmental education, analyze what programs work best, what alternative and emerging pedagogies show promise, and what best practices are being utilized in other states. The review should consider the cost of developmental programs, including the efficacy of incentives to effectively move developmental students into standard curricula.

The HECR report established a time horizon for this review of 2012 -2013. The university has made significant progress in understanding the impact of developmental education on certificate and degree attainment, sharing data with the Department of Education and Early Development, and reviewing alternative and emerging pedagogies used in other states.

Board of Regents' policy regarding developmental education is (P10.04.080): To assist students in the successful completion of their educational goals, universities and community colleges of the University of Alaska will make available developmental and remedial courses in basic skills.

Developmental courses are those offered for credit but do not satisfy degree requirements because the content is below the collegiate level. While developmental courses are generally offered for credit and contribute toward meeting financial aid eligibility requirements for full- or part-time status, credits earned are not applied toward the student's degree.

UA is still in the process of reviewing and trying out a variety of alternative and emerging pedagogies and practices used in other states. In particular, the following models for providing developmental education have been examined:

- The California Acceleration Project;
- The Accelerated Learning Project of the Community College of Baltimore County;
- Innovation at Scale used by Virginia Community Colleges
- Completion by Design, a five-year Bill & Melinda Gates Foundation initiative;
- Achieving the Dream, a national nonprofit dedicated to helping community college students;
- The Aspen Institute;
- The Community College Research Center (Teachers's College);
- The National Association for Developmental Education (NADE); and
- The Education Commission of the States' Getting Past Go NextDev Challenge: Moving the Needle on Developmental Education.

In addition, six faculty and administrators attended a developmental education reform session held by Complete College America. The educational approaches in these models have been shared with relevant faculty at UA's institutions and the approaches that appear to be a good fit for Alaska's student population are being tested.

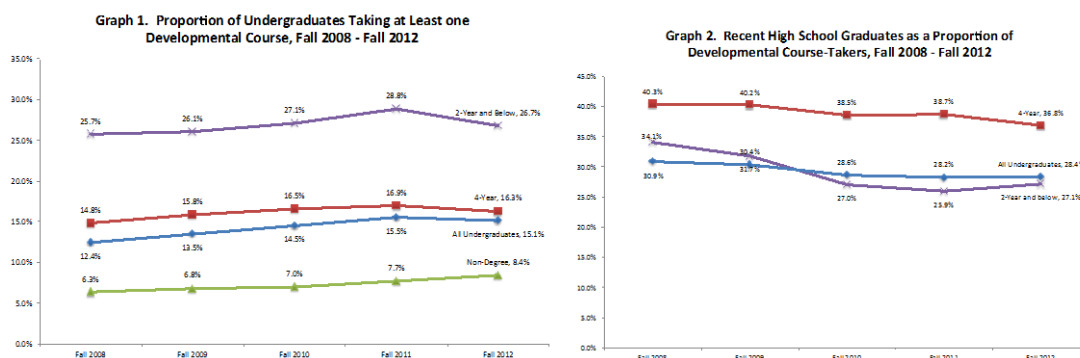
In particular, the following specific acceleration approaches for revising developmental education have been advocated by the vice president of academic affairs at UA's 3 major academic units, UAA, UAF, and UAS, and many of these approaches are being implemented on a trial basis now:

- Mainstreaming developmental students who are close to the current placement requirements, i.e. level 3 students, but require additional support for these students.
- Providing intensive one-semester sessions in math and English to more quickly qualify developmental students for collegiate level coursework.
- Using existing, or develop new, alternative curricular pathways for students, particularly in mathematics, such as the Carnegie Quantway and Statway approaches. See <http://www.carnegiefoundation.org/>.
- Improving the quality of the placement processes through technology driven review sessions for students, informing students of the consequences of placement testing so they will prepare better, and using information beyond placement scores to determine initial course placement.

Faculty representatives from UAA, UAF, and UAS have collaborated on a common set of revised placement criteria for English. A similar process is planned for mathematics this year.

Developmental Participants

In fall semester 2012, nearly 31,000 undergraduate degree-seeking and non-degree seeking students enrolled across the University of Alaska system. Of these, about 15 percent (5,080) took at least one developmental course. The proportion of undergraduates taking at least one developmental course increased over the last five years (Graph 1), primarily due to improved placement testing for incoming students. Students seeking two-year or shorter degrees and certificates are most likely to need remediation. This is common at community colleges nationwide.



The HECR recommendations focus on eliminating the need for remediation of recent high school graduates, however, it is important to note that recent high school graduates make up less than one-third of undergraduates taking developmental courses at the University of Alaska (Graph 2). Students who enter or re-enter the education continuum after pursuing work or family obligations comprised more than 70 percent of UA's developmental education participants in fall 2012.

The vast majority of developmental coursework taken by students is in math or English. Less than ten percent of developmental students take preparatory courses in other subjects, e.g. developmental studies, to gain competency in basic study and life skills needed to be successful in college. The remainder of this report focuses on degree-seeking students taking math and English developmental courses and the associated outcomes. These two subjects make up the bulk of remedial activity and have corresponding college-level courses by which remediation success can be measured for each degree-seeking student.

The level of degree being sought and whether a student is a recent high school graduate is related to the type(s) of preparatory coursework a developmental student needs to take. One factor impacting the need for preparatory coursework between 4-year degree seekers and those seeking 2-year or lower level credentials is that a higher level of math competency may be required for admission to and graduation from 4-year degree programs. For example, Intermediate Algebra (Math 105) may meet the core math requirement for an associate's degree, but is considered a developmental course for most 4-year degree programs.

Math and English preparatory courses are typically offered at three different levels, which indicate the amount of remediation a participating student needs to become "college-ready" in the subject area. Level 3 courses are taken by students who are nearly college-ready, level 2 courses by students who can become prepared with some remediation, and level 1 courses by students are not ready for college level coursework and require significant, additional preparation.

While recent high school graduates account for less than one-third of all developmental course-takers, proportionally more recent high school graduates require remediation than other students seeking undergraduate degrees (Table 1).

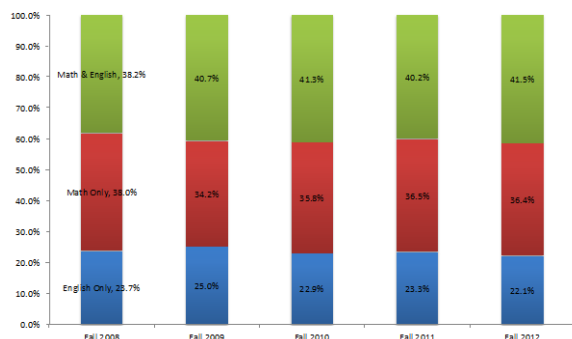
Table 1. Degree-Seeking Undergraduates Requiring Remediation by Level, Fall 2012

	2-Year or Lower		4-Year	
	Recent High School Graduates	Others	Recent High School Graduates	Others
Any Remediation	511 (58%)	1,374 (21%)	791 (46%)	1,356 (11%)
Nearly College-Ready (Level 3)	210 (24%)	468 (7%)	532 (31%)	825 (7%)
Some Remediation (Level 2)	225 (26%)	583 (9%)	193 (11%)	384 (3%)
Significant Remediation (Level 1)	76 (9%)	323 (5%)	66 (4%)	147 (1%)
Total	877 (100%)	6,694 (100%)	1,731 (100%)	12,082 (100%)

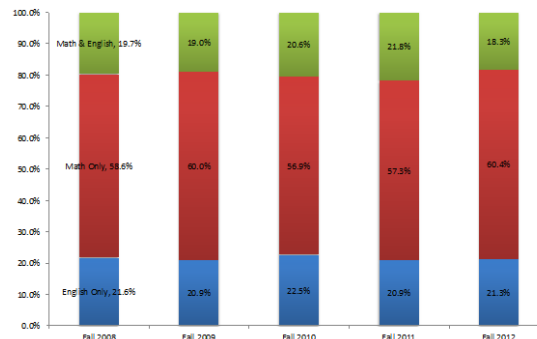
Relatively little national information is available on the need for remediation elsewhere, however Complete College America indicates that an average of 20 percent of students at 4-year institutions require remediation, and 52 percent of students at 2-year institutions require remediation. These figures include private and selective admission institutions so are not directly comparable to UA, but do provide some context.

Graphs 3, 4, 5 and 6 on the following page show a trend of the distribution for developmental course takers who are recent high school graduates versus others by the level of degree being sought, either two-year and lower or a four-year degree. About 90 percent of developmental students who are seeking 4-year degrees and who have been out of high school for some time need math remediation, compared to about 80 percent of those seeking a 2-year or lower level credential. Regardless of the type of degree sought, about 80 percent of the recent high school graduates who need remediation require preparatory math coursework. Conversely, developmental students who are seeking 4-year degrees and who have been out of high school for some time are least likely to need developmental English coursework. Thus, math preparation for collegiate level course work is by far the primary challenge.

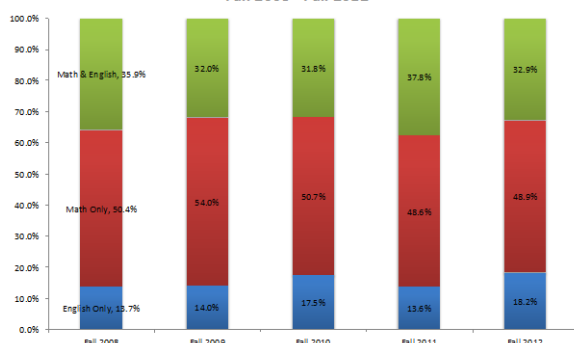
**Graph 3. Developmental Participation of Recent High School Graduates Seeking 2-Year or Lower Degree by Subject
Fall 2008 - Fall 2012**



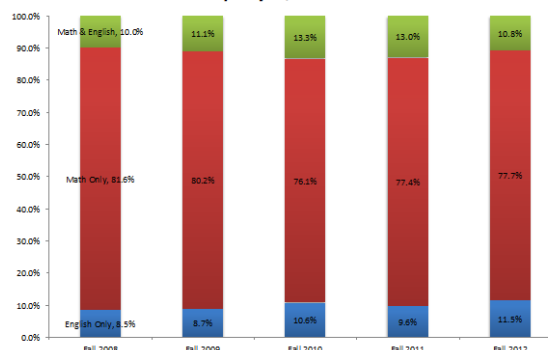
Graph 4. Developmental Participation of Other 2-Year or Lower Degree Seeking Students by Subject, Fall 2008 - Fall 2012



**Graph 5. Developmental Participation of Recent High School Graduates Seeking 4-Year Degree by Subject
Fall 2008 - Fall 2012**



Graph 6. Developmental Participation of Other 4-Year Degree Students by Subject, Fall 2008 - Fall 2012



Successful Remediation

One intermediate measure of successful remediation is whether a student passes the developmental class he or she enrolled in. For this analysis, a course is considered completed by a student if the student passes the course with a grade of C or better, while grades of C- or lower and incompletes are considered to be non-completions. This is because students with C- or lower grades are unlikely to be successful in subsequent courses. Table 2 below shows the average course pass rate for different types of students and courses. A comparison of this information for recent high school graduates versus other students showed little overall difference in pass rates. There was also virtually no difference in the pass rate by course level (1, 2, or 3) for developmental math or English courses within the three groups presented in the table below.

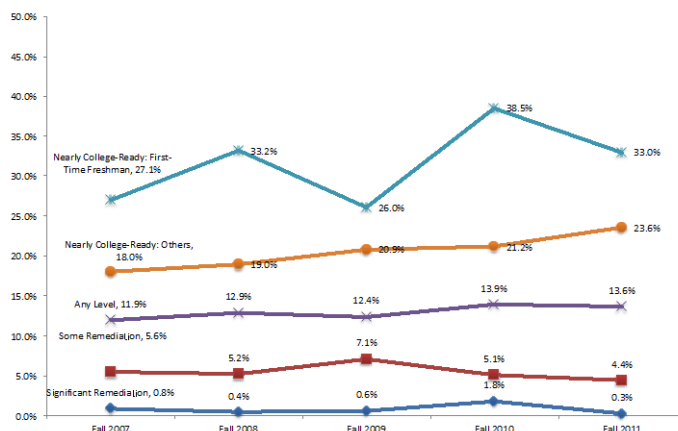
Table 2. Course Completion Rates, Fall 2008 - Fall 2012 Average

	Student's Degree-Seeking Status		
	Non-Degree	2-Year or Certificate	4-Year
Developmental English	63%	66%	74%
Developmental Math	55%	57%	57%
College Level Course	60%	70%	76%

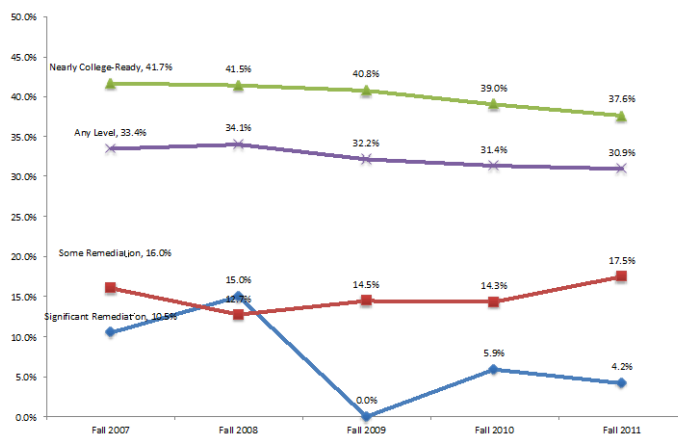
Completion rates are lowest for developmental math courses. Typically, students pass college level, lower division math courses at a lower rate than other lower division courses.

Beyond simply passing a preparatory course, passing a college level course within twelve months, or three semesters, in the same subject area is another, subsequent measure of successful remediation. Graphs 7, 8 and 9 show the proportion of developmental students who pass a college level class within 12 months, by the type of preparatory coursework needed. Over the last five years, an average of almost one-third of students needing remediation only in English completed a college level English course within 12 months, compared to an average of 13 percent for any student needing remediation only in Math. As might be expected, students needing remediation in both math and English were least likely to have successfully completed both a college level math and a college level English course within 12 months, with an average of just 4 percent doing so.

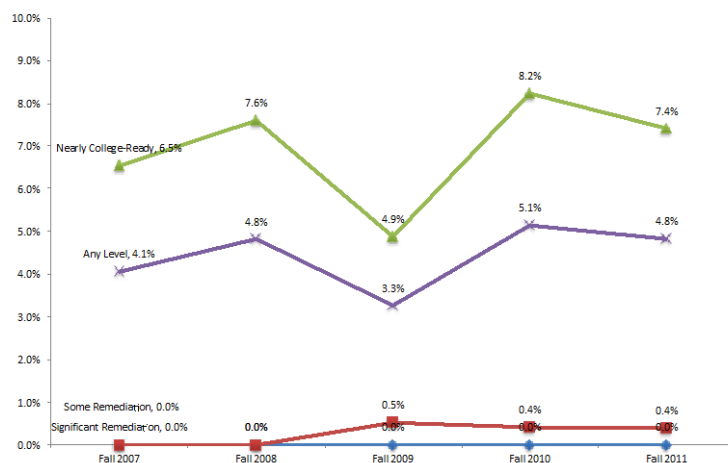
**Graph 7. Proportion of Students Needing Math Remediation who Pass College-Level Course within 12 Months
Fall 2007 - Fall 2011**



**Graph 8. Proportion of Students Needing English Remediation who Pass College-Level Course within 12 Months
Fall 2007 - Fall 2011**



**Graph 9. Proportion of Students Needing Both Math and English Remediation who Pass College-Level Course within 12 Months
Fall 2007 - Fall 2011**



For nearly-college ready developmental math students, an average of 32 percent of first-time freshman completed a college level math class within 12 months, compared to 21 percent of other students. Regardless of the subject area a student needs preparatory coursework in, the likelihood a developmental student successfully completes a college level course within 12 months is lower for students needing some remediation or significant remediation.

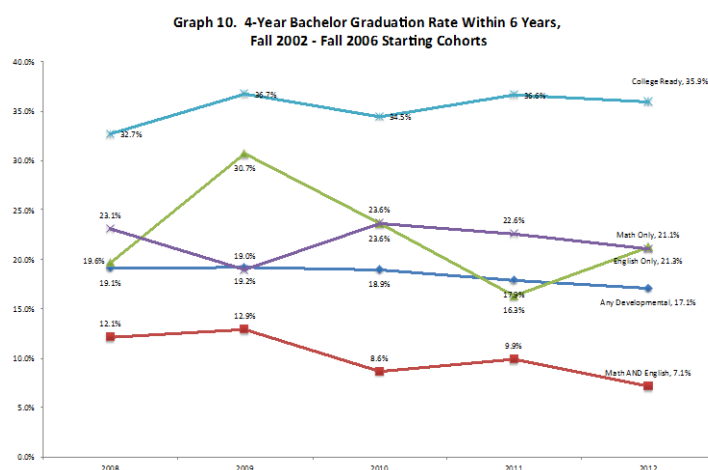
Some students who successfully complete developmental coursework may not be retained or may not have attempted to take a college level math or English class within 12 months. For both full- and part-time students, just over half of first-time 2-year associate's degree seekers are retained to the following year, regardless of whether preparatory coursework of any kind is needed. For full- and part-time, first-time 4-year bachelor degree seekers, retention to the following year differed by the college-readiness level of each student. On average, 76 percent of college ready students were retained, compared to 71 percent of nearly college ready students, 63 percent of students who needed some remediation, and 56 percent of those who needed significant remediation.

Graduation Rates

Another measure of success for any student is receiving the degree being sought within a reasonable amount of time. One measure of degree completion, commonly used by the National Center for Education Statistics, is the proportion of entering first-time, full-time freshman who complete a degree within 150 percent of degree time, e.g. within 6 years for a student seeking a 4-year degree, or within 3 years for a student seeking a 2-year degree. This measure does not account for UA's significant number of part-time students or those who transfer into UA, but does provide for comparison with other institutions. For UA as a whole, regardless of developmental need, the proportion of first-time, full-time 4-year degree seeking students who graduate within six years was 27.6 percent for those students starting in fall 2007 graduating with a 4-year degree by FY12. Nationally, an average 29 percent of first-time, full-time freshman starting at public, open admission universities get a bachelor's degree within six years. UA's overall graduation rate is at a level similar to other public, open admission universities across the nation.

National comparison information for students needing preparatory coursework is limited, however Complete College America indicates that an average of 9.5 percent of developmental students at two-year institutions graduate within 3 years and an average of 35 percent of developmental students at four-year institutions graduate within 6 years. For college ready students, an average of 14 percent of two-year institutions graduate within 3 years and an average of 56 percent of at four-year institutions graduate within 6 years. Complete College America figures include private and selective admission institutions so are not directly comparable to UA, but do provide some context.

The amount of remediation, if any, a student needs when starting a UA undergraduate program impacts the likelihood the student will graduate within 150 percent of degree time. For first-time, full-time freshman seeking 4-year degrees, an average of 36 percent of those who are college ready graduate in 6 years, versus an average of 18 percent of those who require developmental coursework (Graph 10). Compared to national figures from Complete College America, UA's graduation rates for both groups fall well below the national average.



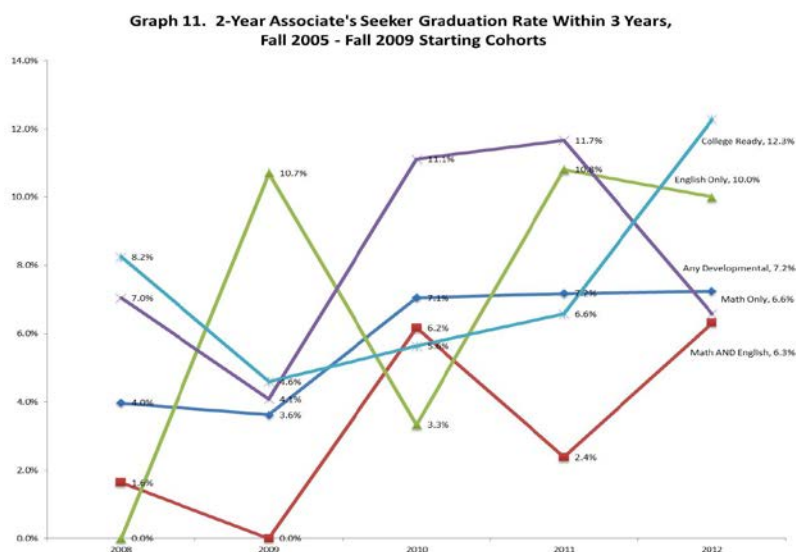
Developmental students who only need English or Math remediation are more than twice as likely, on average, to graduate with a 4-year degree in 6 years than students who need both English and math remediation. Table 3 below summarizes the average graduation rate for first-time, full-time, 4-year degree seekers by college readiness level.

**Table 3. Average 4-Year Bachelor Degree Graduation Rate within 6 Years
Fall 2002 - Fall 2006 Starting Cohorts**

	English AND Math	English OR Math
Any Developmental	10.1%	22.1%
Significant Remediation	0.0%	11.0%
Some Remediation	4.4%	18.7%
Nearly College-Ready	13.3%	24.7%
College Ready	35.6%	

It is very unlikely that a student who needs some or significant remediation in both math and English will graduate with a 4-year degree in 6 years.

For 2-year degree seeking students seeking an associate's degree at UA, the proportion of full-time students who graduate within 3 years is highly variable, and relatively low for all students regardless of college readiness level. Graph 11 below shows these rates over the last five years.



Time to Degree

For students who graduate with a 2-year associate's or a 4-year baccalaureate degree, the time it takes to earn the degree is one way of evaluating any impact of needing developmental coursework. Tables 4 and 5 below show the median time to degree for 2-year and 4-year degree recipients who started as first-time freshman at UA, by fiscal year of graduation. Here, time to degree is measured in years, with half of all graduates earning a degree in less than the median and half earning a degree in more than the median time.

The average length of time a student takes to get a degree may be impacted by his or her ability to be successful in college level coursework, however the median time to degree is highly variable in many cases.

Table 4. Median Time to Degree For 2-Year Associate of Arts & Associate of Science Graduates Starting at UA as First-Time Freshman

	FY08	FY09	FY10	FY11	FY12
College Ready	1.3	2.0	1.2	1.0	1.3
Any Developmental	2.3	3.3	2.3	2.2	2.3
Math Only	2.3	3.2	1.8	2.3	2.0
English Only		2.8	2.3	1.7	2.3
Math & English	2.3	3.7	2.3	2.3	2.3
Nearly College-Ready in Math	2.3	4.2	3.0	1.8	3.0
Some Remediation in Math	2.3	3.0	2.0	3.0	1.8
Significant Remediation in Math	3.3	2.0	0.7	2.0	2.3

Generally, graduates who require developmental coursework do take longer to graduate than those who do not. Many 2-year students do not declare a major until they are close to finishing their program, therefore the median time to degree figures presented in Table 4 are biased down.

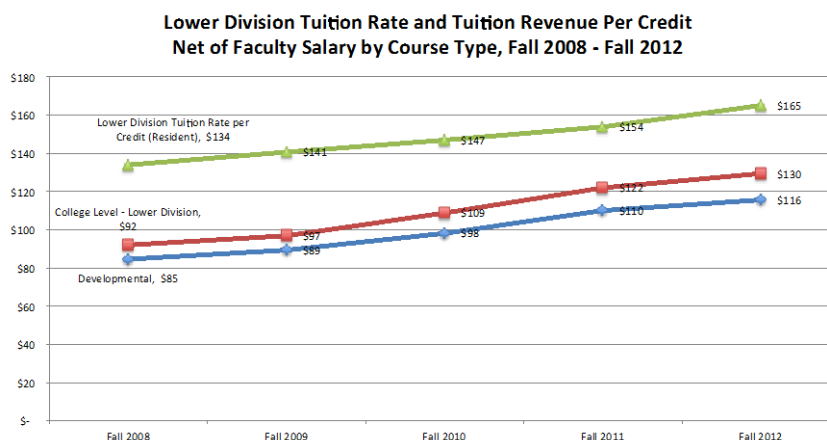
Table 5. Median Time to Degree For 4-Year Baccalaureate Graduates Starting at UA as First-Time Freshman

	FY08	FY09	FY10	FY11	FY12
College Ready	4.3	4.3	4.3	4.3	4.3
Any Developmental	4.3	4.7	4.3	5.0	4.7
Math Only	4.3	4.3	4.3	4.7	4.3
English Only	4.3	4.3	4.3	5.3	5.0
Math & English	4.3	5.0	5.0	5.0	5.3
Nearly College-Ready in Math	4.3	4.3	4.3	4.7	4.3
Some Remediation in Math	7.0	4.3	4.7	5.3	4.3
Significant Remediation in Math	6.3	6.3	5.8	4.3	3.3

Graduates counted here only partially overlap with the cohort examined in the 150 percent graduation rate section. About half of all 4-year degree recipients start part-time or transfer into UA. It is important to this measure does not consider length of enrollment for majors who dropped out or otherwise have not yet graduated from UA.

Cost of Developmental Programs

The average cost of providing developmental courses is about the same as the average cost of providing other lower division courses. The chart below shows a trend of tuition revenue per credit hour for these two types of courses, net instructional faculty salary paid to provide these courses.



While the cost of delivering developmental education varies by location across the university system, due to class size and use of adjunct or regular faculty, the net revenue generated per credit hour is similar for both developmental and other lower division courses. In fall 2012, tuition revenue covered 100 percent of faculty salary and benefits for developmental education as well as lower division collegiate level coursework.

Improving Student Success in Developmental Education and Freshman-level Courses

Accelerating Developmental Students through Intensive Coursework or Mainstreaming

Based on the Accelerated Learning Project, UAF is enrolling students with high developmental placement into a regular English composition course with a required additional support course. A trial was offered in spring 2013, and will be continued in fall 2013 if the results of the trial are positive.

UAS has developed an accelerated developmental-collegiate level combination course for Fall 2013, which can be completed in one semester. Class meets six hours per week. Two additional hours per week must be scheduled by the student to work on this class in the UAS Learning Center (times flexible), for a required total of 8 hours per week. This course is to be offered for at least 3 semesters to allow time to track students and assess the effectiveness of this approach. In addition, students who place lower in developmental English will be given the opportunity to enroll in an intensive 8-credit course, which when successfully completed will prepare them to enter English composition in the following semester (Spring 2014).

In fall 2013, UAF's Interior-Aleutian Campus will test two models, one where high level developmental math students will take a developmental course and pre-calculus course together during one semester, and a second where pre-calculus is spread out over two semesters with the intent of improving student success. Both these models have been suggested as a means to help students be successful and progress in mathematics faster (www.utdanacenter.org/mathways/).

In spring 2013 UAA's Community and Technical College began design and planning work for an accelerated learning program, which will use high-impact practices to offer enrollment options for students to be placed into coursework based on a multiple-measure assessment of readiness for college-level academic coursework.

Alternative Curriculum Approaches

UAF Developmental Mathematics will pilot the *Carnegie Foundation for the Advancement of Teaching* quantitative reasoning course in 2013-2014. This is a one semester course to prepare students at all DEVM levels for MATH 103, which is the only math course taken by many social science and humanities majors.

In addition, a Developmental Education faculty member is designing a modularized mastery learning developmental math course, to be implemented fall, 2014 at Fairbanks Campus. Students will be able to earn up to 6 credits in one semester, working independently using a computer/assessment and learning system, with faculty support. Students will be able to work on one credit at a time and only need to complete the ones they need, based on placement testing and modules already completed.

In spring 2013 UAA revised and enhanced their "Smart Start" learning community course structure in collaboration with discipline-based faculty to provide contextual learning options for developmental instruction linked to content coursework in three tracks (health,

transportation/trades, STEM). They also assessed Learning Resources Center Math Lab resources to determine feasibility of implementing a Math emporium model in collaboration with the College of Arts & Sciences Math Department.

Reducing the need for Developmental Education Through Partnerships with Alaska's Schools

Dual enrollment programs, UAA's Eagle River Middle College program, and Tech Prep programs help prepare high school students for collegiate level coursework. In addition, to campus based dual enrollment programs, UA partners with Alaska's public schools to deliver dual enrollment coursework by distance through the Alaska Learning Network.

UAF's Interior-Aleutian Campus is currently piloting math classes in four rural high schools with the support of Title III funding. This project aims to provide rural schools without dedicated math teachers with the expertise to prepare their students to enter the university "college ready".

Since 2006, UAF's College of Rural and Community Development, has offered a collaborative teaching mathematics and mentoring program that has a university faculty member working with high school teachers to design and deliver college preparatory courses in rural Alaska; about 100 students were engaged in this program in spring 2013. K-12 students engaged in this program typically enter UA prepared for collegiate level mathematics.

UAS has worked with Juneau School District faculty to implement more rigorous math requirements and made collegiate placement testing available for high school juniors.

Information is shared by UA with the Alaska Department of Education and Early Development via a statewide longitudinal database system under development, and directly with some school districts allowing for assessment and improvement of high school programs. UA provides school districts with information on the college-readiness level of incoming Alaska high school graduates, including the level of need for preparatory coursework and the subject area(s) where remediation is needed, as well as success in college level coursework.

Improved Course Placement and Advising

All three UA institutions analyze student success rates in developmental and required general education courses on a periodic basis and examine success rates in subsequent required courses. This information is used to refine course placement and prerequisite requirements.

The legislature increased UA's funding for academic advising in FY13 and FY14. This funding has significantly enhanced the personal attention individual students are receiving concerning course placement and the use of technology to track student course progress. UAA has implemented the student tracking software MAP-Works to improve response time for academic support services for at-risk students; advisors make contact with these students and recommend actions the student can take to improve their success. Advising codes in the student information system were improved to allow documentation of placement advising referral to faculty. UAS implemented intrusive advising specifically targeting first-year students, Alaska Performance Scholars, and UA Scholars.

UAA implemented a scheduled group "Home Room" staffed for supplemental academic advising support for the cohort of students enrolled in developmental courses at their Learning Resources Center.

Faculty at all three MAUs have met and agreed to align course placement for freshman English composition statewide. This change is resulting in a realignment of all developmental and collegiate English courses across UA. At UAA this change is expected to result in approximately 20 percent fewer students placing into developmental English.

In 2012 UAA significantly revised placement testing processes to improve the quality of student course placement by implementing the following approaches:

- a) scheduled testing appointments (eliminated walk-in testing on demand)
- b) require an orientation presentation by Advising & Testing staff prior to the test to develop an awareness of the meaning and consequences of the placement test
- c) opportunity for a student to defer testing after the orientation into order to practice and prepare for testing to better assess skills/knowledge
- d) increased study resources online for students to practice and prepare
- e) math test preparation workshops provided at Learning Resources Center by Math Lab staff

UAF implemented mandatory placement in freshman level courses in 2008. Based on admission or placement test scores, students were placed in math and English courses (from developmental to sophomore level) that matched their skill levels. Over the next two years, mandatory placement was extended to most general education courses and refinements have been made since. Student success data for the three years before and three years after mandatory placement were collected and analyzed:

- Completion rates went up 5 percent in target courses after mandatory placement was implemented. Fewer students were not completing.
- On the Fairbanks and Career and Technical College campuses, course success rate rose 11%.
- Required English composition course success rates for those who had placed in and taken the required developmental course rose 14 percent.
- Success rates also rose in other general education courses where prerequisites had been specified, such as introductory chemistry, history, and anthropology.

Student Alert Systems & Use of Technology

UAS instituted an early alert program in 2011 designed to identify students at risk in developmental (and other) courses early enough in the semester to receive proactive advising and tutoring. EMAS Retention Pro software is used to track student progress in their courses and to ensure consistent quality advising at the early point of their college career.

The UAF Interior-Aleutians Campus is responsible for most of the distance delivered developmental math and freshman collegiate level math courses for UAF's rural campuses. Since 2007, IAC has proactively employed online resources, like interactive homework, to engage students. For example, digital ink tablets are sent to math students; this allows students to write on the whiteboard and promotes active participation in classroom activities. Math tutoring now incorporates Elluminate Live (Elive) for all math students starting from the first day of class. Five Elive tutoring sessions and 4 face-to-face tutoring sessions are offered each week, plus individual tutoring as needed. In fall 2013 Interior Aleutians Campus intends to test the use of the online resource New Life (see http://www.devmathrevival.net/?page_id=8) to improve mathematics literacy of developmental students.

UAS Sitka Campus uses ALEKS software available online in teaching developmental mathematics. Other campuses across UA are investigating the use of this software for both improved placement and improving instruction.

UAA implemented MAP-Works software to improve the efficacy of advising as noted above in the advising section.

Bridge programs

UAS is piloting a 2-week English Composition Refresher and a College Math Refresher in August over a three-year period to see if this ‘refresher’ approach enables students entering UAS in the fall to place into a higher level English and/or Math class. Initial indications are that some students, at least, are able to improve their placement to the next course level by participating in this refresher opportunity.

UAF Developmental Mathematics has been running a Math Fast Track since 2008. These classes are intensive, two-week (20 hour) review courses designed to help students improve their math class placement. Beginning Fast Track covers pre-algebra and beginning algebra and Advanced Fast Track covers beginning and intermediate algebra. Many students taking part in this program place into a higher class, reducing the number of semesters needed to complete their math requirements. Students who complete Fast Track courses pass the subsequent math class at a higher rate than students who do not take Fast Track.

UAF Mathematics implemented a Math Bridge Program on a limited basis in summer 2011 and grew the program in 2012-2013. The goal of the program is to improve the success of students in lower-level math courses. The program offers extra academic support to students enrolling in courses identified as historically having low success rates. All lower division math courses that serve non-math majors have been targeted. This program includes a technology-intensive pre-semester workshop that includes both mathematics instruction and instruction on study skills and semester planning. The majority of the students in the workshops were students who previously failed the course, had not taken any math course for a year or more, or who had marginal prerequisite skills (e.g., a C in the prerequisite course). Participating students passed their courses at a rate slightly higher than average, which for this group of students is a great success.

Supplemental Instruction and Tutoring

The International Center for Supplemental Instruction at the University of Missouri-Kansas City defines supplemental instruction as follows:

Supplemental Instruction (SI) is an academic assistance program that utilizes peer-assisted study sessions. SI sessions are regularly scheduled, informal review sessions in which students compare notes, discuss readings, develop organizational tools, and predict test items. Students learn how to integrate course content and study skills while working together. The sessions are facilitated by “SI leaders”, students who have previously done well in the course and who attend all class lectures, take notes, and act as model students.

The purpose of supplemental instruction is to increase student retention within targeted historically difficult courses and to improve student grades in those courses.

UAF uses supplemental instruction to improve student outcomes in several required general education courses each semester including mathematics. Supplemental instruction is available free of charge to any interested student.

UAF has used supplemental instruction successfully for a gateway math course (pre-calculus) required for students entering STEM fields. Students who attended at least one supplemental instruction session were significantly more successful in their course than non-participating students in terms of earning a passing grade.

All three UA institutions offer tutoring in math, English and other courses. Tutors are available for in-person sessions during the day, in the evening, and on weekends. Tutoring is also available online and by telephone.

Conclusion

UA institutions are experimenting with many different approaches to developmental education, which together encompass nearly all of the successful models that have been implemented at other colleges and universities. All are being carefully and systematically evaluated. After two to three years, there will be sufficient data to identify the best approaches for our student populations. Those approaches will be retained, and less successful approaches set aside. Because of learning differences among students and delivery methods, several different approaches may be needed to serve UA's diverse student body.