



DEVELOPMENTAL EDUCATION WORKING GROUP REPORT

June 2014

★ LEADING HIGHER EDUCATION ★

DEVELOPMENTAL EDUCATION WORKING GROUP MEMBERS

Community Colleges

Michele Bach

Kansas City Kansas Community College

Janice Blansit

Johnson County Community College

Devin Graves

Cowley Community College

Brian Inbody

Neosho County Community College

Cheryl Johnson

Butler Community College

Randy Kettler

Neosho County Community College

Julie Kratt

Cowley Community College

Rosemary Lischka

Kansas City Kansas Community College

Cindy Lopez

Independence Community College

Katheryn McCoskey

Butler Community College

Carol Murphy

Barton Community College

Charis Sawyer

Johnson County Community College

Judy Waters

Seward County Community College/
Area Technical School

Ryan Willis

Coffeyville Community College

Technical Colleges

Diane Stiles

Northwest Kansas Technical College

Sherry Watkins

Flint Hills Technical College

Shawn Westmoreland

Salina Area Technical College

State Universities

Cheryl Duffy

Fort Hays State University

Heather Eckstein

Pittsburg State University

Ingrid Peterson

University of Kansas

Kansas Board of Regents Staff

Gary Alexander

Vice President for Academic Affairs

Cynthia Farrier

Director of Data, Research & Planning

Susan Fish

Director of Adult Education

INTRODUCTION

Remediation is nothing new. John Stuart Mill, in his 1867 *Inaugural Address Delivered to the University of St. Andrews*, claimed that a university

...is not concerned with elementary instruction; the pupil is supposed to have acquired that before coming here. But where does elementary instruction end, and the higher studies begin? [High-quality schools] have been, even in Scotland, so few and inadequate, that the Universities have had to perform largely the functions which ought to be performed by schools; receiving students at an early age, and undertaking not only the work for which the schools should have prepared them, but much of the preparation itself (Mill, 1867).

In other words, developmental education has always been crucial to the success of some students. Emerging research and better data have revealed, however, that many of underprepared students have not been well served by existing remedial education policies and practices (McTiernan, 2013). This is of particular concern to Kansas.

Aside from its potential benefit to individual students, improved outcomes for students taking developmental education is critical to the success of the Board of Regents' *Foresight 2020* goal of increasing higher education attainment. The first aspiration under this goal is to "increase to 60% the number of Kansas adults who have a certificate, associate degree, or bachelor's degree by 2020." Like many state leaders, the Board realized that underprepared students must successfully progress through the postsecondary education pipeline if the state is to meet ambitious college-attainment goals.

The Board placed developmental education at the forefront of its attainment goal when it initiated a study of developmental education that calls for "a set of recommendations for redesigning developmental education across the system." To fulfill this charge, Board staff assembled a Developmental Education Working Group charged by the Board to do the following:

Assess the level and types of remedial education at state community and technical colleges and make recommendations about: (1) state level policy and actions to promote effective remediation; (2) strategies that may be implemented locally, at the discretion of individual institutions; and (3) appropriate state level goals and local performance measures.

The Working Group, composed of fourteen representatives from community colleges, three from technical colleges, and three from state universities, met throughout academic year 2013-2014, dividing into three subgroups dedicated to writing and reading, advising and placement, and mathematics.

The Reading and Writing, Advising, and Mathematics Subgroups developed discipline-specific recommendations contained in this report.

The Need to Transform Developmental Education

The premise behind the need for developmental education is that some students enter college unprepared in the core areas of mathematics, reading, and writing to succeed either in college or the workplace. For the college or university, this means those students require preparatory work in some subjects before embarking onto a rigorous course of college-level study.

Developmental education in Kansas occurs primarily at community colleges. This is mainly due to the fact that Kansas' community colleges are open admission institutions which enroll students with a much wider range of preparation and skills than do the state's universities and partly due to a 2012 law that forbids the use of state funds to support developmental education at public universities.

Developmental education has received a great deal of criticism in recent years. As has been reported to this Board, data show that nearly a third of students who undertake remedial education fail to complete it, and of those who do successfully complete remediation, most fail to graduate. That said, it is critical to recognize that, though this report recommends improvements in developmental education, the Working Group agrees with the recent comments of Philip Uri Treisman, a professor of mathematics and public affairs at the University of Texas in Austin, as reported in the *Chronicle of Higher Education* online (March 17, 2014). Professor Treisman, who has developed a new model for remedial math, emphasizes the need "to be careful about the rhetoric of failure." The very language of "remediation" creates a picture of students with "disabilities, defects, deficits, deficiencies and handicaps" that must be remedied, (Rose, 1989) rather than students who bring their unique experiences and preparation into the classroom with varying degrees of academic competence. If we are to reach the board's 60% goal, the curriculum and delivery must be broad enough to reach the majority of individuals.

We must also decrease the high costs of developmental education both in terms of actual costs and opportunity costs. Recent national estimates of developmental education spending are between \$1.2 and \$2.3 billion annually for community colleges and \$500 million for public four-year colleges (Collins, 2013). Students bear the most significant cost in the increased time it takes to earn credentials that will improve their standing in the labor market. Moreover, substantial developmental education requirements can deplete students' financial aid for courses that do not count toward the credentials and degrees for which they have enrolled.

Criticism of the current system does not mean that everything done within that system is unsuccessful. To that end, the Working Group distributed a survey to all system institutions asking for examples of innovative practices aimed at increasing completion rates for underprepared students. This survey revealed that nearly one-half of two year colleges are already implementing innovative approaches to remediation, some or all of which have been tried at other institutions in and out of Kansas. These strategies are discussed in the next section. (A summary of the survey is included in Appendix A.)

Developmental education and remediation can be differentiated by the scope of their activities. According to the National Association for Developmental Education (NADE), developmental education is an umbrella term for research and practices that aim to support all college students:

It promotes the cognitive and affective growth of all postsecondary learners, at all levels of the learning continuum. Developmental education is sensitive and responsive to individual differences and special needs among learners. Developmental education programs and services commonly address academic preparedness, diagnostic assessment and placement,

development of general and discipline-specific learning strategies, and affective barriers to learning (NADE, n.d.).

Remediation, which is usually considered as a part of developmental education, applies to instructional curriculum and delivery designed to remediate weaknesses in students' math, reading, and writing skills. For the purposes of this report, remediation is understood primarily as courses that are below college level but taken on the college campus for the purpose of enabling the student to enroll in credit-bearing, college-level courses.

Nationally, over half of first-time students in two-year colleges and about one-fifth of first-time students in public four-year colleges enroll in one or more remedial course (Complete College America, 2012). In Kansas it is lower, about 42% and 16% respectively. Remediation is a barrier for a disproportionate number of poor and minority students. In Kansas two-year colleges, 52% of Pell-eligible students, 59% of African-American students, and 48% of Hispanic students start in developmental education. (Kansas numbers are for AY 2012. More detailed data for developmental education in Kansas appears in Appendix B.)

Nationally, nearly one-third of students who begin remediation fail to complete that course sequence. That is to say, only 62% complete remediation in two-year colleges, and 74% in four-year schools (Complete College America, 2012). A similar situation holds true in Kansas, with 64% completing remedial courses in two-year schools and 66% doing so in four-year institutions.

Further, most of the students who complete remediation fail to succeed in gateway courses in math and composition. Nationally, only 22% complete remediation and associated college-level courses in two years, while only 37% do so at four-year colleges (Complete College America, 2012). The figures are a bit worse for Kansas, where 17% of students at two-year colleges complete remediation and associated college-level courses in two years, with the comparable numbers being 40% at four-year schools.

Finally, most students who enroll in remedial courses never graduate. Only 10% graduate from a two-year college within three years, and 35% graduate from a four-year college within six years. (Complete College America, 2012). Kansas students are somewhat more successful with 18% completing at two-year colleges within three years and 36% graduating from four-year colleges within six years. (Completion data is for AY2008 cohort) Apart from the importance of success to the individual student, this group represents a pool of potential graduates that can contribute to the Board's goal of increasing the number of individuals with a certificate or degree.

While these and other data are instructive, it is important that we not substitute those data for the realities of teaching and learning. Data, however crucial, are not the solution. We should be wary of committing what philosopher Alfred North Whitehead termed the "fallacy of misplaced concreteness," wherein we substitute the abstractions of data and theory for the actual experiences of students and teachers. Mike Rose, of the UCLA Graduate School of Education and Information Studies, puts it well in his observation that "numbers seduce us into thinking we know more than we do; they give the false assurance of rigor but reveal little about the complex cognitive and emotional processes behind the tally of errors and wrong answers. What goes on behind the mistakes simply escapes the measurer's rule." (Rose, 1989) More data does not mean greater effectiveness but provides windows into our strengths and weaknesses.

Summary of Working Group Recommendations

Below is a summary list of the Working Group's recommendations. A more complete discussion of each recommendation is presented in subsequent sections of this report.

Recommendations for State Action

1. The Board seek funding in the amount of \$2.8 - 3.3 million to support a three-year project enabling institutions to develop, scale, and implement research-based recommendations and best practices. (See page 10-11.)
2. The Kansas Board of Regents/Kansas Department of Education Coordinating Council consider:
 - Development by joint groups of college and high school faculty of refresher courses for students identified by the 11th grade year assessment test or college placement test as deficient in mathematics and/or English language arts.
 - Development of a common understanding of college readiness around which to align high school exit and readiness for two-year colleges.
 - State-funded administration of college-ready assessments (e.g., ACT, Compass, SAT) to all high school students in 11th and 12th grade years. (See page 12.)
3. A study group composed of members of the Developmental Education Working Group, two-year college administrators, and Kansas Board of Regents Data, Research, and Planning staff be convened to develop and recommend state and institutional level performance goals and measures for developmental education. (See page 12.)
4. A group composed of members of the Developmental Education Working Group, administrators of local Adult Education programs, and Kansas Board of Regents Adult Education staff conduct a study and hold discussions in order to recommend components of an effective relationship between developmental education and Adult Education in Kansas. (See page 12-13.)
5. Developmental education courses and outcomes be articulated following pilot-testing and implementation of course and curriculum redesign. The articulation should use a process similar to the Kansas Core Outcomes Group Project. (See page 14.)

Recommendations for State Policy

6. Placement test cut-off scores and developmental education course content be aligned with the content of a gateway course (first credit-bearing college-level course) which is aligned with a student's chosen pathway of study. (See page 14.)
7. Placement assessment test options and cut-off scores be standardized statewide. (See page 15.)

Recommendations for Local Implementation and Policy

8. Colleges review and appropriately revise their policies with regard to assessment, placement, and course design to provide students the most effective and efficient transitions from developmental to regular coursework. (See page 16-17.)
9. Institutions consider implementing some or all of the strategies identified by the Working Group to accelerate the developmental course sequence and enhance student support services. (See page 17.)

TRANSFORMING DEVELOPMENTAL EDUCATION

National Initiatives and Strategies

There is substantial evidence that current models of remedial instruction are ineffective. Too many students place in developmental education and too few students who enroll in developmental education complete gateway courses or even remedial course sequences. Since 2009, research about the lack of success in remedial programs and potential solutions has proliferated. National and state initiatives, including Achieving the Dream and Complete College America, have supported states and institutions in exploring potential solutions. State legislatures have mandated actions ranging from severely limiting funding for remediation to prescribing solutions.

Two major solutions have emerged: reduce the number of students who enroll in remedial coursework and make remedial coursework more efficient.

Reduce the number of students who enroll in remedial coursework

Prepare students to be college-ready in high school

Given the high number of recent high school graduates who need remedial courses, some colleges and states have begun to focus on aligning high school exit-level standards to two-year college-ready expectations. Others are helping students better prepare for college-level work before they enter postsecondary education by identifying students who are academically underprepared for college work and providing them with extra instruction or supports so they place directly in college-level, credit-bearing courses.

Place fewer students in remedial courses

Recent research has provided evidence that widely used placement assessments are weak predictors of student performance in gateway courses, particularly for students who score near the cut-off for remediation (Hughes & Scott-Clayton 2011; Belfield & Crosta 2012; Scott-Clayton 2012). One reason for this weakness might be the failure to recognize that placement assessments are high-stakes tests that can create unnecessary barriers to completion.

Another concern with placement tests is that they do not give necessary information about students' strengths and weaknesses because they focus on a very narrow set of skills in reading, writing, and math that often have little relationship to the content students need for their preferred programs of study (Clayton & Rodriguez, 2012). Of particular concern is growing evidence of the lack of alignment between tests' math content with the math skills that students need, a critical issue because of the relatively high proportion of students requiring math remediation and the relatively low rates of success in these courses. For example, a Community College Research Center (CCRC) study using the Achieving the Dream database found that 59% of students were assigned to developmental math courses. Of those students, only 33% completed the sequence. By contrast, only one-third of the students were referred to remediation in reading, and of those students, 46% completed the sequence (Bailey, Jeong, & Cho 2010).

A final overall problem is that standards of college readiness are not consistent within states. Different placement standards for two-year colleges are an issue especially for students who are comparing programs at different colleges and finding different expectations. A survey of placement scores for two-

year colleges in Kansas revealed wide differences in requirements for entry into college-level courses either because colleges are using different exams to measure those standards or because they use different cut-offs for the same exam.

To address issues with tests, states have adopted several strategies:

- Using multiple measures, including high school transcripts, in addition to placement tests to more effectively provide information about academic readiness and non-cognitive factors including motivation and confidence.
- Allowing students to re-take placement tests. Some states are providing review/preparation for placement tests.
- Creating consistent placement standards at two-year colleges across the state.

Make developmental education more efficient

Shorten developmental education sequences

There is evidence that multi-course sequences “riddled with potential exit points” (Edgecombe, 2011) are a significant obstacle to completion. Two categories of strategies that limit or eliminate opportunities for exit are recommended: acceleration and curricular redesign. Supplemental supports are also recommended to promote student persistence.

Acceleration

Compressed courses include the same number of hours, but within a shortened period of time. For example, the content of a traditional semester-length course is taught in seven to eight weeks and followed immediately in the same semester by the next course.

Co-requisite models include learning communities and paired courses. Paired courses allow students to take college-level classes paired with developmental education in order to begin to accrue college-credits earlier and eliminate potential exit points between developmental education and college-level course work. Paired courses are offered as a unit with integrated syllabi and the students are in each class. In developmental education learning communities, small cohorts of students are placed together in two or more thematically linked courses, including a developmental course, usually for one semester. Learning community instructors are expected to communicate with each other to align their syllabi, write integrated curricula, and prepare common assignments. Learning communities often include enhanced support such as tutoring and consistent, targeted advising.

Curricular Redesign

Reducing the time needed to complete developmental education sequences can generally be accomplished by decreasing the number of courses students have to take. Courses are reduced by eliminating redundant content and tailoring the remaining content to the objectives of a particular program or academic pathway. Some experts view the Emporium Model which replaces class meetings with required attendance in computer labs and the availability of individualized assistance as a form of modularization. (Others define them separately, identifying Emporium as a delivery model and modularization as a way of structuring content.) Modularization often uses post-testing to identify course completion which allows students to work at their own pace.

Mainstreaming of students who score at remedial level into introductory college-level courses is another way to accelerate their progress. In models of mainstreaming with supplemental supports, students obtain additional instruction access through mandatory companion classes, tutoring, or lab sessions. In integrated mainstreaming models, remedial content is incorporated into college-level courses.

As a means of integrating instruction, contextualized instruction offers basic skills courses co-taught by disciplinary and developmental education faculty. A widely known model of contextualized instruction that integrates basic skills with career and technical education is the Integrated Basic Education and Skills Training (I-BEST) program developed by Washington State to accelerate completion of credentials in high-demand career pathways. Accelerating Opportunity, which is based on the I-BEST model, is currently being used in fourteen community and technical colleges in Kansas.

Supplemental Supports

Developmental education best practice studies encourage the integration of multiple student supports into a comprehensive model to foster academic achievement. Traditional supplemental supports have included academic and career advising, tutoring, opportunities for students to access instructional technology, and workshops or courses designed to teach study strategies. Generally, recommendations for comprehensive student support services tend to state that the academic instruction and student support service divisions should work together.

Texas is emphasizing non-course competency based options that use innovative learning approaches designed to prepare students for college-level work. These interventions must be overseen by an instructor of record and may include tutoring, supplemental instruction, or labs.

WORKING GROUP RECOMMENDATIONS

Working Group Recommendations for State Action

Implementation of Reform Strategies

Two major national initiatives aimed at implementing reform in developmental education have offered fulsome advice about implementing strategies designed to limit the number of students who enter or accelerate student progress through remedial courses. The Developmental Education Initiative (DEI), funded by the Bill and Melinda Gates and Lumina Foundations, included fifteen Achieving the Dream colleges in six states. The initiative aimed to establish and scale-up or just scale-up promising strategies in four categories: avoidance, acceleration, curricular relevance (e.g., contextualization, integrated instruction), and student supports (e.g. supplemental instruction, case management). The second national initiative is the Scaling Innovation project, funded by the William and Flora Hewlett Foundation and coordinated by the Community College Research Center (CCRC) at Teachers College, Columbia University. The project is designed to advance instructional reform by providing information about opportunities and challenges related to implementing developmental education instructional reforms.

A study of the DEI (Quint, 2013) and one from the Scaling Innovation project (Edgecombe, 2013), identified factors that constrain the success of implementation efforts.

- Resource limitations
- Reluctance to impose mandates on faculty and students
- Lack of mechanisms for reflecting on and counteracting reform shortcomings
- Perceived need to scale back if strategies appear to be ineffective

The study of the Scaling Innovation project also described factors that limit the overall impact of innovative approaches. The first is adoption of minimally disruptive, small scale approaches which cannot substantially improve college-wide student outcomes. The second is the focus of new approaches solely on the beginning of students' college careers when they are likely to be enrolled in remedial coursework (Edgecombe, 2013).

Together, these two studies also suggested factors that promote successful implementation:

- A systematic approach to the process of innovation that prioritizes reforms to address issues students are confronting and methodically considers how reforms can be modified by institutions
- Adequate resources (e.g., funding, staff, space, technology)
- Strong communication about the initiative, especially from the college president
- Engagement of staff in planning and oversight and professional development, Scaling Innovation particularly recommended putting faculty in the lead at all stages of implementation (development/adoption, execution and refinement)
- Commitment to uniform instructional practices for faculty implementing innovative strategies
- Infrastructure that enables connections among practitioners within and across institutions (Community College Research Center, 2012)

Piloting and adopting innovative developmental education strategies is not without cost. The colleges in the DEI each received a three-year grant of \$743,000 during implementation. Colleges used these funds to support policy changes and other programmatic reforms as well as both offsite conference attendance and on-campus professional development on a broad range of topics related to developmental education.

DEI colleges also received leadership and support, at local and state levels, from the Community College Leadership Program at the University of Texas at Austin, Jobs for the Future, Public Agenda, and MDC. These organizations provided technical assistance to college and state policy teams, supported learning networks and events, developed tools and resources for scaling and sustaining innovations, and disseminated lessons emerging from the participating states and colleges.

Another model for supporting the implementation of innovation in developmental education is offered by the Carnegie Foundation for the Advancement of Teaching which brought together the model of networked communities with Statway™ and Quantway™. Networked communities are structured to promote professional learning through improvement research in order to ensure that educational initiatives are reliably effective at scale. Currently institutions in 14 states participate in networked communities which promote continuous improvement strategies in mathematics teaching and learning at the college-level (Byrk, 2013).

Several states which do not have centralized two-year college governance are using statewide Student Success Centers to support change efforts, including developmental education reform, aimed at increasing student achievement rates. With funding from the Kresge Foundation, these centers have their own budgets, dedicated staff, and advisory boards composed state and college representatives. Their functions reflect several of the factors identified as necessary for successful implementation of developmental education reform.

- Bringing colleges together around reform issues, enabling all colleges to be engaged in the conversation about student success
- Improving use of data for decision-making
- Disseminating information about research, college initiatives, and other states' initiatives
- Coordinating and informing campuses about professional development opportunities (Kresge Foundation, 2013)

The Working Group recommends that the Board seek funding to provide the necessary time, resources, and opportunity for institutions to develop, scale, and implement research-based recommendations and best practices. This could include, but not be limited to:

- A formal innovation network coordinated at the state level
- Professional development including consultants and peer mentors
- Supported travel to national and state meetings and conferences
- Grants to institutions for piloting and scaling developmental education reform strategies

Based on an estimate of costs for developmental math redesign in Virginia (Edgecombe, 2014) and the structure of the existing Student Success Centers (Kresge Foundation, 2013), the Working Group proposes a three-year cost of approximately \$2.8 - 3.3 million.

College Readiness for High School Students

The Working Group recommends that the Kansas Board of Regents/Kansas Department of Education Coordinating Council consider:

- Development by joint groups of college and high school faculty of refresher courses for students identified by the 11th grade year assessment test or college placement test as deficient in mathematics and/or English language arts. (See specific examples in American Association of Community Colleges, 2014, p. 16.)
- Development of a common understanding of college readiness around which to align high school exit and readiness for two-year colleges. These standards should reflect the unique vantage point of two-year colleges which serve most of the students who enter college unprepared for college-level work.
- State-funded administration of college-ready assessments (e.g., ACT, Compass, SAT) to all high school students in 11th and 12th grade years.

Performance Goals and Measures

The Working Group recommends that a group composed of members of the Developmental Education Working Group, two-year college administrators, and Kansas Board of Regents Data, Research, and Planning staff conduct a study and hold discussions in order to recommend state and institutional level performance goals and measures for developmental education. The Working Group recommends the following indicators as starting points for the study group:

- Persistence (first to second term, second to third term)
- Rate of attempted credit hours completed
- Achievement of two year milestones (e.g. 24 credits)
- Developmental education course completion
- Gateway course completion (Compare students who took remedial courses to those who did not.)
- Completion of specified reading intensive courses to measure success of Reading

In setting goals and measures, the study group should consider the subject and level of courses, the types and characteristics of institutions in which they are offered, and specific student groups by demographics and enrollment status. (See Perry, 2010 for a model of data and analyses.)

The Working Group further recommends that the study group consider measures that will include assessment and placement and student support services. Baseline performance for all measures should be established.

Adult Education

The Working Group recommends that a group composed of members of the Developmental Education Working Group, administrators of local Adult Education programs, and Kansas Board of Regents Adult Education staff conduct a study and hold discussions in order to recommend components of an effective relationship between developmental education and Adult Education in Kansas. The group should consider the issues outlined below.

While innovations in developmental education curriculum and delivery show promise in improving success rates for students in the higher remedial levels, similar attention should be given to practices aimed at serving less-prepared students. Developmental education completion rates are negatively related to the number of levels to which a student is referred. Looking at a sample of over 250,000 students from 57 Achieving the Dream colleges, Bailey et al found that, of students who were referred to remediation just one course below college-level, 45% and 50% completed developmental math and reading, respectively. The corresponding figures for students who are referred to instruction three or more levels below college-level are 17% (math) and 29% (reading) (Bailey, 2008).

Two approaches for addressing the most-in-need students that are being tried in other states are non-credit options within the college and referral of students who need more than two semesters of remedial instruction to adult basic education (ABE).

ABE, which has traditionally served low-skilled adults, seems a logical alternative, especially in Kansas where about 60% of students make significant learning gains. Some colleges in the state already refer students who score below a certain cut-off, particularly in math, to ABE. However, there is no research evidence about the success of this approach and there are some immediately apparent drawbacks:

- There are no ABE programs at several community and technical colleges, and programs at some others are located off-campus.
- In order to receive financial aid, students would still need to carry significant loads in other courses, possibly creating unrealistic schedules.
- Some of the policies which have made ABE effective, e.g., flexibility in scheduling and attendance, do not fit well with college schedules and expectations, especially for student athletes.
- High school graduates' likelihood of engagement is diminished by a view of ABE as less than college. This view is reinforced when institutions do not give ABE students and faculty the same voice and access as those in the "regular" college.
- Some severely underprepared students, although high school graduates, have underlying conditions (e.g., intellectual disabilities) that cannot be remedied in traditional Adult Education programs.
- Most Adult Education programs in Kansas are already at capacity and cannot absorb a new target population.

The Developmental Education Working Group recommends research about this approach, including the circumstances at institutions currently referring the most underprepared students to adult education.

Research should:

- Identify how many students, in which subjects, might be referred to ABE.
- Assess effectiveness in terms of student transition and success in regular developmental and college-level courses.
- Examine possible conflicts with open-door admissions statutes and institutional missions.
- Describe best practices in assessment, advising, curriculum, instruction, and delivery.
- Investigate other options, including non-credit approaches within traditional college structures.
- Address issues for student athletes.
- Address issues of funding.

Statewide Articulation of Developmental Education Courses

The Working Group advocates future articulation of developmental education course outcomes, titles, and numbers. Articulation of developmental education courses would facilitate smoother transition for students who transfer to other colleges, ensuring they have adequate preparation to succeed in college-level courses while avoiding repetition of equivalent coursework (Completion by Design, 2013).

Furthermore, standard course outcomes, names, and numbers would provide a foundation for statewide placement assessment criteria, cross-college implementation of innovative models, and systematic tracking of student success data for developmental education. The articulation process should follow implementation of new course and curriculum models designed to accelerate student progress through remedial courses or more closely align developmental education course content with students' academic pathways. The Working Group recommends that articulation of developmental education be accomplished in a process similar to that used by the Kansas Core Outcome Group Project.

Working Group Recommendations for State Policy

The Developmental Education Working Group recommends that policies regarding developmental education in two-year colleges should be developed at two levels: Core state policies and local policies. Core state policies are presented here as a coherent set of policies that should be considered together and that should provide the basis for local policies. Core policies are designed to provide a necessary foundation that will prevent unintended negative consequences from the other state or local policies. The Working Group recommends that the institutions should be required to follow core policies, while instituting local policies which are congruent with core policies and explicitly address the identified issues.

Core Policy: Alignment of Gateway Courses

Developmental education courses should align with the content of the gateway course (first credit-bearing college-level course), which in turn should align with the student's chosen pathway of study.

Background

In her study of California community colleges, *Changing Equations: How Community Colleges Are Re-thinking College Readiness in Math*, Pamela Burdman also calls for new placement tests that are designed to "align better with college math curricula." As does *Core Principles for Transforming Remedial Education*, Burdman asserts the standard math sequence fails to align with the career aspirations of most students. While none doubt the requirement that STEM majors need two years of algebra followed by calculus, the same cannot be said of non-STEM majors.

Burdman reports "at least a quarter of [California's] community colleges are now experimenting with new remedial math curricula that place less emphasis on the second year of algebra and more on preparing students for statistics and quantitative reasoning." She cites University of Texas mathematician Uri Treisman, who comments that the traditional gateway college-level math courses (intermediate algebra, college algebra) are "primarily stepping stones toward calculus," and some 80% or more of students never take calculus since they are not pursuing STEM degrees. Rather, as Burdman puts it, "the new pathways for non-STEM students are course sequences that encompass both remedial-level courses as well as the credit-

bearing gatekeeper courses that students must pass to earn an associate degree or transfer. Many of these new sequences stress skills in statistics or quantitative reasoning rather than algebra and calculus.”

The difficulty is that algebra has been viewed as the single best indicator of potential college and job success. Even Anthony Carnevale, who first made this connection, urges us “not to confuse the correlation with causation,” saying the evidence for causation is very weak. The question is whether algebra is used to weed out weaker students, regardless of career choice, or whether both remedial and credit-bearing math options might be expanded to align with different career paths.

Policy

Academic administrators and faculty should reevaluate what students in developmental education are asked to learn and why, then work toward designing remedial instruction that prepares students for gateway courses specifically aligned with the student’s particular curricular pathway, be that transfer to a university or pursuit of a technical certificate. This would mean requiring statistics or quantitative literacy rather than college algebra for many programs of study.

When experts have identified the content of remedial and gateway courses that align with students’ curricular pathways, review and subsequent revision of Kansas Board of Regents policies that may impact developmental education is appropriate.

Core Policy: Placement Assessment

Placement assessment test options and cut-off scores should be standardized statewide.

Background

In Kansas, individual institutions choose the placement tests and cut-off scores used to determine if and what level of developmental education is required or recommended for students. Such flexibility may allow institutions to tailor a developmental system that they believe works effectively for their student population. However, Jaggars (2011) indicates that such lack of standardization is frequently criticized for creating confusion or even inequity through inconsistent standards, pointing to a study of placement assessment in Ohio which found that a single student’s probability of enrolling in developmental education varied quite widely across potential community colleges. As an illustration, “while an individual might have a 20% chance of remediation at one community college, they may have a 90% chance at another” (Bettinger, 2003). Differing standards create confusion for students choosing colleges and, perhaps more importantly, for high schools in terms of how to prepare students to be college-ready (Jaggars, 2011).

Proponents of statewide assessment consistency emphasize that common requirements make it more feasible for systems to track developmental education outcomes (Collins, 2011). A report from the National Center for Public Policy and Higher Education (NCPPE) and the Southern Regional Education Board (SREB) asserts that the use of so many tests and scores hinders attempts to improve developmental education by blurring the definition of college readiness. Allowing postsecondary institutions to individually select placement assessments and cut-off scores, in effect, allows them to set their own readiness standards (National Center for Public Policy and Higher Education & Southern Regional Education Board, 2010). In addition to standard assessment instruments, research recommends that multiple measures in addition to placements tests, e.g., high school records, be used to more accurately predict student performance (McTiernan, 2013).

Policy

The Board of Regents should consider a policy that addresses which test or tests can be used for placement assessment and how scores are tied to prerequisite requirements. The policy, which should be developed in collaboration with the Kansas Council of Instructional Administrators (KCIA), should also identify additional appropriate measures to be used in conjunction with test scores to promote accurate and appropriate placement of students in gateway courses and courses immediately preceding gateway courses.

Working Group Recommendations for Local Implementation and Policy

Assessment

College policies should explicitly address:

- Student access to information about the assessment and placement process, including the possible implications the outcomes may have on students' degree completion prospects in online information, the course catalogue, or as part of student orientation (Fulton, 2012).
- Assessment for all new students enrolling certificate or degree programs for initial, appropriate placement in courses.
- Exemptions from initial placement assessment for students who meet college-level placement criteria through ACT, SAT, or other Kansas-recognized tests.
- Adoption of research-supported multiple measures in addition to tests to be used for placement.
- Test preparation and refresher options for students preparing to take placement tests for the first time or re-taking placement tests.
- Placement test re-take options that allow students to advance in or beyond developmental coursework when they are appropriately prepared.

For students to effectively transition into postsecondary programs and ultimately earn credentials, they must be fully aware of assessment and placement processes, have opportunities to adequately prepare for required exams, and receive proper advising on their postsecondary options based on the results. Examples of policies that institutions or systems could employ to meet these objectives include the following:

- Ask students to complete a disclosure statement indicating that they fully understand the assessment and placement process and its consequences.
- Communicate the availability of resources for students to prepare for the assessment process, including tutoring, test prep programs offered by the institution or outside providers, practice exams, and other self-instructive tools.
- Require all students to attend short "refresher courses" before taking the placement exam.
- Advise all students on their options based on the assessment results, including required developmental coursework that is aligned to their desired program of study. Students also should be provided data on the success rates of students in various academic programs based on their assessment results.
- Track data on the impact of various intake practices on the placement process and overall student success, especially for those referred to remediation.
- Articulate the intake process in policy, regularly evaluate institutional practices, and build institutional accountability systems around the effective implementation of these policies and practices.

Placement

College policies should address:

- Course placement criteria for students who score below college-level in writing, reading, and/or mathematics. These criteria should be reviewed regularly.
- Requirements for enrollment of students who score below college-level in remedial or gateway courses with co-requisite support their first semester and continue in subsequent semesters until they have passed appropriate gateway courses for their programs of study.
- Appropriate reading, writing, and math prerequisites for technical and general education courses and/or concurrent enrollment in linked or integrated remedial and college-level courses.

Course Design

Colleges should implement policies to support their choices of research-supported course design strategies in their developmental programs to better prepare their students for college-level work and reduce exit points that can become barriers to timely progress and completion. Decisions about election of approaches for course design and all other developmental education improvement strategies should be based on national research about best practices and local data about student characteristics including age, gender, and ethnicity (Nora, 2014).

REPORTS FROM THE DEVELOPMENTAL EDUCATION WORKING GROUP SUBGROUPS

The Working Group as a whole identified three measures for evaluating approaches that are currently being used to reform remedial instruction and developmental education:

- Term-to-term persistence
- Developmental education course completion
- Gateway course completion

Advising, and Mathematics, and Reading/Writing, Subgroups then investigated specific strategies in their areas of expertise before reporting on recommendations for implementation in Kansas.

There is no shortage of information about innovative practices being tried throughout the nation, but rigorous research that establishes causation between strategies and outcomes is limited. In order to move forward with increasing success for students, however, a balance had to be found between waiting for definitive results and acting upon what is already known. The Subgroups considered both gold-standard, experimental research and reports about best practices in choosing the strategies to recommend for implementation by institutions. They selected strategies which offered some evidence of success in the measures identified by the Working Group and which could be sustained beyond a pilot phase.

Advising

Advising Subgroup Members: Cheryl Johnson, Chair
Heather Eckstein
Randy Kettler
Cindy Lopez
Diane Stiles

Intrusive Advising Practices and Student Education Plan (SEP)

Description

As part of an intrusive (proactive) advising model, every student who needs remedial coursework creates, in conjunction with his/her academic advisor, an educational plan during the first month of the first term of enrollment. This plan clearly identifies the path through developmental education to gateway courses for the areas(s) to be developed, as well as the path of the student's intended credential. It includes milestones that are necessary to assist the student in remaining motivated to achieve the identified goal. Intrusive advising practices should continue and include tracking student progress and multiple advisor-student interactions throughout each term developmental education courses are being taken.

Value-added

Students understand the path and process by which they will achieve their goal. Providing this explicit progression allows the student to see beyond the remediation and make connections between the developmental education courses and the coursework required for the credential.

Population Targeted/Served

All students who are placed into any developmental education course.

Evidence of Effectiveness

- The National Academic Advising Association (NACADA) supports, as a best practice, intrusive (proactive) advising in the academic advisors “Pocket Guide” called “Cultivating the Potential in At-Risk Students.”¹
- Authors Harding and Miller point out that intrusive advising builds “structures that incorporate intervention strategies that mandate advising contact for students who otherwise might not seek out advising.”
- “Core Principles for Transforming Remedial Education: A Joint Statement” from the Charles A. Dana Center, Complete College America, Inc., the Education Commission of the States, and Jobs for the Future, noted that “research indicates that students, particularly those who are unprepared for college, benefit from ‘non-academic’ supports that help them explore and clarify goals for college and careers...”²
- The California Community Colleges Student Success Task Force specifically identified the need for an educational plan in their report “Advancing Student Success in the California Community Colleges.”³ The task force concluded that every student “needs a Student Education Plan that represents the sequence of courses that can get them from their starting point to attainment of their educational goal.”
- Zane State University’s intrusive advising model for students resulted in a retention rate increase: “Subsequently, retention rates rose — 77 to 82 percent from 2006 to 2009 among at-risk students — and students in developmental education began to complete their English and math courses at higher rates as well.”⁴

No Late Enrollment Policy

Description

Studies show that students who attend class on the first day are more likely to be successful and stay in college than students who enroll late. This is critical for students who test into developmental education courses, whether their scores reflect academic shortcomings or the number of years since they attended school.

Value-added

Students who enroll early and attend class when it starts are more successful than those who do not. Early enrollment energizes students with a plan and helps them be successful and allows advisors to be more engaged in the process.

¹ “Cultivating the Potential in At-Risk Students” NACADA Pocket Guide by Blane Harding and Marsha A. Miller

² “A Matter of Degrees”

http://www.ccsse.org/docs/Matter_of_Degrees.pdf

³ “Advancing Student Success in the California Community Colleges”

http://www.californiacommunitycolleges.cccco.edu/portals/0/executive/studentssuccesstaskforce/sstf_final_report_1-17-12_print.pdf

⁴ “Report: ‘Intrusive Advising’ Among Best Practices for Community College Student Success”

<http://diverseeducation.com/article/16812/>

To ensure effectiveness of this policy, colleges need to consider adding developmental education courses that start after the beginning of the semester in order to accommodate students who need to be made college-ready once the semester has started.

Proactive advising is necessary to retain students who want to start college late because they have made last-minute decisions, haven't yet gotten financial aid, or for many other often personal reasons. Having options to retain these students is critical because about one-third of students who test into remedial courses never enroll or never start class. If advisors do not have options for students who decide late to come to college and test into developmental courses, these students may never come back again. Adult Education may also be an option to help students become college-ready throughout the regular college semester.

Population Targeted/Served

All college students, but specifically those whose test scores and/or other placement tools indicate need for remedial coursework.

Evidence of Effectiveness

In 2012, *Inside Higher Ed* reported the results of the Community College Survey of Student Engagement, in which 13 "high impact practices" were listed. "Registration before classes begin" was on the list.⁵ Although some colleges that have adopted this practice have noticed a drop in enrollment, experts in the field believe that this policy will pay off in time to graduation and retention rates. Students who register late typically are not the students who stick with college.

Some believe that this policy discriminates against under-served students, those who need the most help. However, according to Rhonda Glover, national director of data coaching and data strategy for Achieving the Dream, "colleges typically see a 2-3 percentage point retention gain from eliminating [late enrollment]."⁶

⁵ <http://www.insidehighered.com/news/2013/10/17/community-college-completion-strategies-lack-scale-report-finds>

⁶ <http://www.insidehighered.com/news/2014/03/05/college-southern-nevada-seeks-boost-retention-ending-late-registration>

Mathematics

Mathematics Subgroup Members: Ryan Willis, Chair
Michele Bach
Janice Blansit
Ingrid Peterson
Shawn Westmoreland

Accelerated Learning Program (ALP) in Mathematics

Description

In Accelerated Learning Programs, or ALPs, students placed into upper-level developmental courses are “mainstreamed” into college-level courses in that subject. Students are simultaneously enrolled in a companion ALP course (taught by the same instructor) that meets in the class period immediately following the college-level class. The aim of the ALP course, which has a small number of students, is to maximize the likelihood of students’ success in their first college-level course and to speed their progress through the developmental sequence.

In some other acceleration models, colleges combine developmental courses at different levels, thus reducing the total number of such courses students must take.

For purposes of this discussion, ALP includes the option of an alternative math sequence which encourages students not interested in STEM or business administration to take a different developmental program of study that still accentuates quantitative literacy. Statway™ and Quantway™ (Carnegie Foundation for the Advancement of Teaching) and *Path2Stats* are other widely used curricular and instructional revisions.

Value-added

ALP accelerates progress for those students who are most ready to take their first college-level course by allowing them to bypass the highest level of developmental education. Students needing remediation are thus “mainstreamed” directly into college-level coursework that incorporates supplemental instruction, tutoring, or other supports.

Population targeted/served

ALP serves students at the upper end of the developmental range, that is, those students who are assigned to remediation but score near the developmental cut-off point on assessments.

Evidence of effectiveness

Patrick Henry Community College (PHCC) has had the ALP since the 2005-08 academic years. PHCC’s strategies intentionally overlap. The College’s online tool — based on statistical models — has helped improve advisors’ decisions about placing students in accelerated developmental math courses. Cooperative learning techniques help facilitate students’ progress in accelerated math courses. Each innovation’s effect on overall student outcomes is uncertain; however, trends are positive. Two-year completion rates increased from 10% for the 2005 first-time-in college cohort to 13% for the 2008 cohort. Fall-to-fall persistence rates increased from 54% for the 2005 cohort to 68% for the 2008 cohort.

The ALP model not only emphasizes acceleration but also contextualized learning in that it uses a pre-stats course to prepare students for their terminal course in statistics.¹

- Developmental overall success rate for *Path2Stats*: 60%
- Overall success rate traditional path: 21%³

Evidence of effectiveness for Statway™ and Quantway™ is highly encouraging. Fifty-two percent of Statway™ community college students successfully completed the full Pathway (had a grade of C or higher in the final term) and earned college-credit in 2012-2013. This is a promising reproduction of Year 1 outcomes, in which 51% of all Statway™ students and 49% of Statway™ community college students successfully completed the final term. Statway™ students experienced over triple the success rate of students in traditional courses (52% versus 15.1%) in half the time (one versus two years).

In 2012-2013 Quantway™ 1 students experienced more than double the success rate (52% versus 21%) in half the time (one versus two semesters). In spring 2013, 95% of the students enrolled in Quantway™ 2 completed the course, and 68% successfully completed the course with a grade of C or higher.³

Curricular and Instructional Revisions

Description

There are many options for student-centered developmental education interventions that lead to successful college completion. Some redesign models for developmental mathematics programs incorporate interactive software that students work through with instructors' guidance. Newer developments in adaptive learning platforms define individual student strengths and weaknesses and provide personal mathematics learning paths. Two examples are *Knewton* and *ALeKS* which can be stand-alone or combined with publisher software.

Modularization, another curricular redesign, is used to offer shorter, more tailored math segments that address specific deficiencies. This approach blurs distinctions between traditional course sequences and streamlines content to avoid curricular redundancy. Redesigned programs for developmental mathematics in Virginia, Ohio, and North Carolina are incorporating a modular focus.

Another example of innovation, *Path2Stats* (also called *StatPath*)⁷ encourages students not interested in STEM or business administration to take a different developmental program of study that still accentuates quantitative literacy.

Statway™ and Quantway™ (Carnegie Foundation for the Advancement of Teaching) aim to accelerate students' progress through their developmental mathematics sequence and a college-level course for credit.

Statway™ is a two-semester pathway that replaces the traditional algebra sequence and allows developmental math students to earn college-level credit for statistics in a single academic year.

⁷ California Community Colleges Chancellor's Office. *Basic Skills Completion: The Key to Student Success in California Community Colleges: Effective Practices for Faculty, Staff and Administrators*. (2013) http://cccao.org/files/udp/files/Conf2014_SPRING/Presentations/1B%20-%20BasicSkillsEResource.pdf (see pages 5, 37-38)

Statway™ integrates developmental mathematics skills and college-level statistics into a collaborative, problem-focused class.

Quantway™ is designed as two separate semester-long courses. The first semester, Quantway™ 1, fulfills the requirements for students' entire developmental mathematics sequence. The next semester, Quantway™ 2, is a college-credit-bearing quantitative reasoning course. Each semester of Quantway™ is designed to promote success in community college mathematics and cultivate quantitatively literate citizens.

Value-added

Substantial course redesign for the initial mathematics courses can bring about significant improvement in success rates accompanied by decreases in withdrawal rates for students in developmental mathematics.⁸ Use of specific technology allows students to access course materials anywhere, anytime, and to review them to ensure mastery. Modularization allows students to focus on those content areas where testing showed deficiencies and also enables students to save time and money by enrolling in modules that address their specific certificate, career, or degree goals.

Population targeted/served

Modular design with interactive software has the potential to meet students at their own levels and facilitate successful progression through their developmental math sequence.

Evidence of effectiveness for technology

Early efficacy reports on *Knewton* reflect the success of the program after two semesters of use with over 2,000 developmental math students at Arizona State University. Withdrawal rates dropped by 56%, pass rates went from 64% to 75%, and 45% of the class finished four weeks early.

Evidence of effectiveness for modular design

Students making progress in developmental mathematics utilizing a modular approach in the Virginia Community College system increased from 50% in fall 2011 to 65% in fall 2012. Success data for implementation of modular curriculum designs in other states (Ohio, Virginia, Tennessee, and North Carolina) is limited. Most programs are in process of implementation.

Cleveland State Community College (Tennessee) undertook a redesign of developmental mathematics utilizing the National Center for Academic Transformation (NCAT) approach to delivering instruction with the Emporium design. The completion rate for elementary algebra increased from 50% before redesign to 68% after the redesign. Completion rates for Intermediate Algebra increased from 57% to 74%. In addition the number of students enrolling in college-level mathematics increased by 42% in 2009.⁹

⁸ (*Higher Education Practice Guide: Learning From High-Performing and Fast-Gaining Institutions*, Education Trust, January 16, 2014)

⁹ <http://www.successnc.org/initiatives/developmental-education-initiative>
<http://www.vccs.edu/statewide-innovations/developmental-education/>
http://www.vccs.edu/wp-content/uploads/2013/07/The_Critical_Point-DMRT_Report_082010_pdf.pdf
<http://www.ohiocommunitycolleges.org/assets/images/public-pages/2498a07ea52e0907b8669cd436be0e2f.pdf>
NCAT site

<http://www.thencat.org/Mathematics/CTE/CTE.htm>

<http://www.highereducation.org/crosstalk/ct0510/news0510-tenn.shtml>

Academic and Support Services

Description

Applying a comprehensive, student-focused case-management approach to student support services and integrating those support services with academic instruction and supplemental academic resources (e.g., learning communities, “drop in” study centers, tutors, on-line resources, etc.) can improve outcomes for students who need developmental education (Quint, 2013). Students at similar ability levels are assigned to a team of support service providers representing each support and academic function. The professional team collaborates to assess and address the specific needs of the cohort they serve. Professionals serving students with the greatest developmental or remedial needs serve a smaller number of students than those working with students nearing readiness for credit courses.

Value-added

A student-focused, case-management approach to supporting students in developmental education enables service providers to address student needs holistically. At the same time, the approach also recognizes that resources are limited. Students with the most significant needs receive the most intense support, while those nearing readiness for credit courses receive less individual attention, preparing them to operate independently as they transition into credit coursework.

Population targeted/served

Comprehensive student support services focus most intensely on students with the greatest developmental needs. As students progress, they move into larger groups with lower levels of support until they have fully transitioned into independence. Students who do not demonstrate progress are assessed to determine the root cause of the impediment and referred to disability services, if appropriate, or counseled to consider pursuit of technical certificates or alternate career options.

Evidence of effectiveness

Valencia Community College, Florida, provides a variety of academic and non-academic resources to support students seeking to improve their math skills, including learning communities, study group rooms, access to a Math Lab with interactive software, calculators for checkout, instructional videos, tutoring and easy access to instructors. Graduation and workforce results show improved outcomes. This is particularly noteworthy as Valencia’s student body is about half Hispanic or African American, and a significant number of their students come from lower-income households. Low-income and minority students often need additional guidance to overcome barriers such as inadequate academic preparation, financial limitations and a need to spend more hours at work, more complex family circumstances and other personal challenges.

The Community College of Denver implemented *FastStart@CCD* in which students taking compressed courses are supported with case-management, career exploration and educational planning services. Performance data show higher rates of enrollment and higher passing rates for college-level math courses, including more rapid completion of the developmental math sequence and the required gatekeeper math courses. While *FastStart* participants did not show increased persistence or increased accumulation of college-level credits as compared with other students, additional experience with a similar, refined design may enable these indicators also to show improvement.

At Patrick Henry Community College, students benefit from case-management advising and “intentionally overlapping” strategies designed to provide a network of academic and personal support. Two-year completion rates increased from 10% in 2005 to 13% in 2008, and fall-to-fall persistence for

the same time period increased from 10% to 13% for students in college for the first time. Again, this progress is important in light of that fact that 27% of PHCC's student body is comprised of minority students, and 48% of PHCC students received Pell Grants.

While there is a shortage of performance data documenting the long-term success of a comprehensive student-focused, case-management approach to supporting students who need developmental education, anecdotal evidence suggests promise. Community and technical colleges rarely place high importance on publishing research data, and it is conceivable that innovations undertaken several years ago have continued to be refined and applied with success. On the other hand, further implementation without measurable success may also have led to abandonment of these innovations. Continued pursuit and refinement of the concept is recommended.

Reading and Writing

Reading and Writing Subgroup Members: Julie Kratt, Chair
Cheryl Duffy
Devin Graves
Rosemary Lischka
Kathy McCoskey
Carol Murphy
Charis Sawyer
Judy Waters
Sherry Watkins

Accelerating Opportunity: Kansas (AO-K) Model

Description

AO-K is a model that integrates and contextualizes remedial instruction. Critical elements of AO-K are CTE classes team-taught by basic skills and CTE instructors, wrap-around student support services, and career pathways that lead to high-wage, high-demand jobs.

Value-added

There are over 230,000 adults without a GED or high school diploma and over 900,000 working age adults with no meaningful postsecondary credentials in Kansas. AO-K allows adults to work concurrently on CTE credentials and preparation for the GED exam. Each of the fourteen participating community or technical colleges in Kansas offer two-three career pathways.

Population targeted/served

The AO-K model targets all students who are pursuing a GED or skills at Adult Education levels 4-6 in reading, writing, or math, regardless of whether or not they are high school graduates.

Evidence of effectiveness

In two and one half years of the Kansas AO initiative, 2,071 students have enrolled in AO-K programs. They have earned 2,742 industry recognized credentials and 786 college certificates. About 48% of participants have earned 12 or more credits. Accelerating Opportunity has been in the implementation

stage, so data is not available for specific academic success rates. Flint Hills Technical College showed an increase in the Power Plant Physics and Math final grade average from a 58% in 2011 to an 84% in 2013, and the class grade average improved from a 68% to an 89% during the same time. The number of students who dropped or failed decreased from six in 2011 to one person each in 2012 and 2013.

Accelerated Learning Program (ALP)

Description

In Accelerated Learning Programs, or ALPs, students placed into upper-level developmental courses are “mainstreamed” into college-level courses in that subject and are simultaneously enrolled in a companion ALP course (taught by the same instructor) that meets in the class period immediately following the college-level class. The aim of the ALP course, which has a small number of students, is to maximize students’ success in their first college-level course and to speed up their progress through the developmental sequence. ALP is both a structural innovation and an instructional one.

Value-added

ALP accelerates those students who are most ready to take their first college-level course by allowing them to bypass the highest level of developmental education. Students needing remediation are thus “mainstreamed” directly into college-level coursework that incorporates supplemental instruction, tutoring, or other supports. In some other acceleration models, colleges combine developmental courses at different levels, thus reducing the total number of such courses students must take.

ALP was also found to be a significantly more cost-effective pathway through the required college-level English courses than the traditional developmental sequence, as measured by cost per successful student. Because of the promising preliminary findings on the program, Community College of Baltimore County (CCBC) is in the process of scaling up ALP so that the majority of students who are referred to the highest level developmental English course will be enrolled in English 101 with the concurrent ALP support course.

Population targeted/served

While some colleges enroll ALP students from the upper end of the developmental range (students who are assigned to remediation but score near the developmental cut-off point on assessments), policies vary. At Butler County Community College, for instance, any student who places into developmental English can elect to enroll in an ALP section.

Evidence of effectiveness

The Community College of Baltimore County (CCBC) has used ALP since the 2007-08 academic year. Using a multivariate analysis, one study found that among CCBC students who were referred to the highest level of developmental English, those who enrolled directly into the college-level course and the concurrent ALP companion course were significantly more likely to take and pass the college-level course and the course immediately after it (English 101 and 102) than those who enrolled in the highest level of developmental education.

Butler County Community College, the first school to adopt the ALP model in Kansas, offered spring and fall 2013 pilots in which ALP students were nearly twice as successful as students who took conventional English courses in sequence during a baseline year. Currently, Butler is offering fifteen class sets taught

by twelve instructors with plans to expand. The second school in the state to offer the model, Cowley College, is piloting in spring 2014 with plans to scale-up to full face-to-face implementation in fall 2014.

Contextualized Teaching and Learning

Description

Students complete work on remedial skills in an environment that directly connects with the requirements of a gateway course or vocational competencies. Contextualized learning frameworks include problem-solving with realistic situations, learning in multiple contexts, content driven diverse work, and authentic assessment. Contextualized learning can be carried out in either stand-alone classrooms or through linked courses and learning communities. Learning communities, paired courses, and integrated instruction can be examples of contextualized instruction.

Value-added

Students taking remedial courses are often bogged down with the basic skill coursework that is simply “skill and drill,” where they often see no link to their intended goals. Because the instruction is tied to real situations, students can more readily see the importance in learning the skills being presented. The immediate tie-in to the transferability of skills encourages students to continue with their studies. The goal is ever present – whether successful completion of a gateway course or workforce readiness. Retention from semester to semester is increased.

Population targeted/served

Contextualized instruction can be used with all levels of students and in all disciplines.

Evidence of effectiveness

Although there are multiple examples of contextualized learning, many have not had the research to provide long-term data as to effectiveness. However, the following programs are noteworthy and have some data to show that the interventions were successful.

- At Cabrillo College in California, social justice curriculum is delivered in a learning community format. A National Science Foundation evaluation of the program indicated that the students who participated in the experience demonstrated higher rates of course completion, accumulation of credits, and completion than students who did not take the course.
- The I-BEST program (Integrated Basic Education and Skills Training) in Washington State is an example of infused occupational instruction. An analysis of outcomes found that participants were “substantially more likely than similar basic skills students to advance to college-level work and to reach the tipping point of at least one year of credits and a credential.” In addition, average wage earnings for various groups increased substantially (i.e. wage gain of \$7,000 per year for ESL students, \$8,500 for ABE students). These wage gains, in turn, affected the community as well.
- The Learning Strategies Program at Johnson County Community College (JCCC) has demonstrated effectiveness over the years with both college and high school students. The TIPS program (Transition into Postsecondary) works with students with IEPs in three local school districts to prepare them for college work before enrolling. Forty to fifty percent of these students actually enroll at JCCC the following semester. Data collected on the Learning Strategies for Psychology course shows that students who participated in the course received

grades one full letter higher than students not enrolled in the Strategies section. In addition, students who took a Strategies course earned GPAs one full point higher than average.

Curricular Redesign Models

Description

In Curricular Redesign models, acceleration of students' developmental coursework is accomplished by decreasing the redundant content in sequential developmental education courses, often resulting in the consolidation of these courses into a one-semester course. Curricular Redesign can take many forms and may also involve elimination of developmental courses along with the modification of college-level courses. Modularization is another form of this model.

Value-added

The Curricular Redesign model addresses misalignment between developmental and college-level (gateway) courses by "Backward Design" of the developmental course from the content of college-level course. Reading material and writing assignments are often inter-related and are set at a higher critical thinking level than those of average remedial courses; instructors provide "scaffolding" activities, many of which are active and collaborative, to help students develop their abilities to read, write, and think more critically. As with the ALP model, intentional support is given to students' affective (non-cognitive) needs to help them develop problem solving skills and support systems, as these issues are often what interrupt progress through college for students in developmental education. Just-in-time remediation is used for more technical areas of learning such as grammar.

Population targeted/served

The Curricular Redesign model targets all students who are in the developmental reading and writing range. Chabot College results show that students who scored higher on placement tests were more successful in college-level English compared to students who had proceeded through the traditional sequence.

Evidence of effectiveness

In 2010, data from two colleges in the California Acceleration Project (CAP) showed that 45% of students from the accelerated (redesigned) course completed college-level English in comparison to 23% from the traditional sequence.

Emporium Model

Description

In Emporium models, lectures are replaced by interactive software and individualized instruction. Some schools use an Emporium design that eliminates class meetings and replaces them with required attendance at a learning resource center while other schools design the class time as a lab with computer software and individualized instruction. Competencies/course content is divided into sequential modules that include pre-tests and post-tests. Students work through the modules at their own pace allowing them to work on skills they are lacking with help as needed.

Value-added

The Emporium model is customized to students' skill needs. Students may test out of a module which covers a competency they have previously mastered, allowing them time and individualized instruction on skills they have not mastered. The inclusion of diagnostic testing also allows students to work on practice selections at their reading level. Using a computer program such as *MyReadingLab* provides practice in both skills and reading-level improvement. The web-based learning material increases students' opportunities for hands-on, active learning, and since a variety of reading selections from several subject areas is provided, students may choose topics of personal interest. The one-on-one assistance targets specific learning needs, so students who are lost in a traditional class format receive the personalized help they need.

Population targeted/served

The Emporium model targets all students who are in the developmental reading range.

Evidence of effectiveness

Northeast State Technical Community College in Tennessee (NSTCC) started using the Emporium model in 2007. In NSTCC's final report in 2009, data showed improved learning and improved retention. Analysis of pre-test and post-test Nelson-Denny Reading Test scores revealed that students in the redesigned Emporium course obtained a greater gain in their reading skills. In the traditional course the average gain was 11 points while students in the redesigned course (after full implementation) had an average gain of 21 points. The student success rate (C or higher) in the traditional course was 58% while in the redesigned course the overall average was 60%. Students with a grade of "A" increased from 14% (traditional) to 30% (redesigned delivery).

Barton Community College in Kansas began a modified Emporium design for developmental reading in 2012. After fully implementing the redesign, success rates have increased from 50% to 73% in the lower level course and from 67% to 84% in the upper level course. Reading levels have shown a significant increase in the redesigned courses compared to the traditional courses.

SOURCES

- American Association of Community Colleges. (2014). *Empowering community colleges to build the nation's future: An implementation guide*. Washington, D.C. : American Association of Community Colleges.
- Bailey T., Jeong, D., & Cho, S-W. (2009). *Referral, enrollment, and completion in developmental education sequences in community colleges (CCRC Working Paper No. 15)*. New York, NY: Community College Research Center.
- Belfield, C. R. (2012). *Predicting success in college: The importance of placement tests and high school transcripts (CCRC Working Paper No. 42)*. New York, NY: Community College Research Center.
- Bettinger, E. & Long, B. (2003). *The effect of remediation on student outcomes: The plight of underprepared students in higher education*. Cleveland, OH: Case Western University.
- Burdman, P. (2013). *Changing equations: How community colleges are re-thinking college readiness in math*. Oakland, CA: LearningWorks.
- Byrk, A., Yeager, D., Hausman, H., Muhich, J., Dolle, J., Grunow, A., LeMahieu, & Gomes, P. (2013). *Improvement research carried out through networked communities: Accelerating learning about practices that support more productive student mindsets*. Stanford, CA: Carnegie Foundation for the Advancement of Teaching.
- Charles A. Dana Center. (2012). *Developmental education structures designed for the readiness continuum: Clarifying the co-requisite model. Higher Ed Issue Brief, No. 1*. Austin, TX: The Charles A. Dana Center.
- Charles A. Dana Center, Complete College America, Inc., Education Commission of the States, & Jobs for the Future. (2013, October 28). *Core Principles for transforming remedial education: A joint statement*. Retrieved from <http://www.jff.org/publications/education/core-principles-transforming-remedial-education-joint-statement>
- Collins, M. L. (2011). *Driving innovation: How six states are organizing to improve developmental education*. Boston, MA: Jobs for the Future.
- Collins, M. L. (2013, September 14). *Overview of the National Landscape for Developmental Education Improvement: Testimony Before the Texas Senate Higher Education Committee*. Retrieved from Jobs for the Future: <http://www.jff.org/publications/overview-national-landscape-developmental-education-improvement-testimony-texas-senate>
- Community College Research Center. (2012). *Doing developmental education differently*. New York, NY: Community College Research Center.
- Complete College America. (2012). *Remediation: Higher education's bridge to nowhere*. Washington, D.C.: Complete College America.

- Completion by Design. (2013, October 11). *Completion by Design*. Retrieved 4 17, 14, from Completion by Design: http://completionbydesign.org/sites/default/files/site-uploads/main-site/pdf/cbd_mid-initiative-report-10_11_13.pdf
- Edgecombe, N. & Bickerstaff, S. (2014, April 17). *Community College Research Center*. Retrieved from Community College Research Center: <http://ccrc.tc.columbia.edu/publications/resources-and-reform-developmental-math-redesign.html>
- Edgecombe, N. (2011). *Accelerating the academic achievement of students referred to developmental education*. New York, NY: Community College Research Center.
- Edgecombe, N. (2013). *Strengthening developmental education reforms: Evidence from the Scaling Innovation project. (Community College Research Center Working Paper No. 61)*. New York, NY: Community College Research Center.
- Fulton, M. (2012). *Using state policies to ensure effective assessment and placement in remedial education*. Denver, CO: Education Commission of the States.
- Hodora, M., Jaggars, S. & Karp, M. (2012). *Improving developmental education assessment and placement: Lessons from community colleges across the country*. New York, NY: Community College Research Center.
- Hughes, K. & Clayton, J. (2011). *Assessing developmental assessment in community colleges (CCRC Working Paper No. 19, Assessment of Evidence Series)*. New York, NY: Community College Research Center.
- Jaggars, S. & Hodara, M. (2011). *The opposing forces that shape developmental education: Assessment, placement, and progression at CUNY community colleges. (Community College Research Center Working Paper No. 36)*. New York, NY: Community College Research Center.
- Kresge Foundation. (2013). *Joining forces: How student success centers are accelerating community college improvement efforts*. Troy, MI: Kresge Foundation.
- McTiernan, L. & Fulton, M. (2013). *NextDev challenge: Assessment and placement*. Denver, CO: Education Commission of the States.
- Mill, J. S. (1867) Inaugural address: University of St. Andrews. London, UK: Longmans, Green, Reader, and Dyers.
- NADE (n.d.). *National Association for Developmental Education*. Retrieved March 21, 2014, from www.nade.net/aboutnade.html
- National Center for Public Policy and Higher Education & Southern Regional Education Board. (2010). *Beyond the rhetoric: Improving college readiness through coherent state policy*. San Jose, CA and Atlanta, GA: NCPHHE and SREB.

- Nora, A. & Crisp, G. (2014, May 5). *Hispanic student participation and success in developmental education: White paper prepared for the Hispanic Association of Colleges and Universities*. Retrieved from http://www.hacu.net/images/hacu/OPAI/H3ERC/2012_papers/Nora%20crisp%20-%20developmental%20education%20-%202012.pdf
- Perry, M., Bahr, P. R, Rosin, M., & Woodward, K. M. (2010). Course-taking patterns, policies, and practices in developmental education in the California community colleges: A report to the California Community Colleges Chancellor's Office. Mountain View, CA: EdSource. Retrieved from <http://files.eric.ed.gov/fulltext/ED512364.pdf>
- Quint, J. (2013). *Bringing developmental education to scale: lessons from the Developmental Education Initiative*. New York, NY and Oakland, CA: MDRC.
- Rose, M. (1989). *Lives on the boundary*. New York, NY: Penguin Books.
- Rutschow, E. & Schneider, E. (2011). *Unlocking the gate: What we know about improving developmental education*. New York, NY: MDRC.
- Scott-Clayton, J. (2012). *Do high stakes exams predict college success? (CCRC Working Paper No. 41)*. New York, NY: Community College Research Center.
- Scott-Clayton, J., & Rodriguez, O. (2012). *Development, discouragement, or diversion? New evidence of the effects of college remediation*. Cambridge, MA: National Bureau of Economic Research.
- Visher, M. G. (2012). *The effects of learning communities for students in developmental education: A synthesis of the findings from six community colleges*. New York, NY: National Center for Postsecondary Research.

APPENDIX A

INNOVATIVE STRATEGIES FOR DEVELOPMENTAL EDUCATION CURRENTLY USED IN KANSAS: RESULTS OF A SURVEY

Advising, Student Support, Assessment, and Placement

Study Skills Requirement for First-time Students Who Place in Developmental Math (Math Study Skills) English (Introduction to Study Skills)

Butler Community College

Retention Measures (Student success plans, early alert, retention specialists, etc.)

Butler Community College

Tutoring (Face-to-face, Net Tutor, Online Writing Lab)

Butler Community College

Academic Advising (Intrusive advising for students on probation or suspension, mandatory scheduled advising, visits by academic advisors to ALP classes.)

Butler Community College

Supplemental Instruction

Hutchinson Community College

Tutoring and Support Services

Hutchinson Community College

Prescriptive Academic Advising for Student Support Services (SSS) participants enrolled in one or more developmental education courses

Labette Community College

Transforming and Re-Defining Developmental Education (Mandatory fall semester class for all students who place in developmental education)

Wichita Area Technical College

Implementation of Best Practices in Assessment and Placement (Using high school transcripts to supplement COMPASS and ASSET scores in determining course placement)

Butler Community College

Developmental Reading Test Out (Using the Nelson Denny Standardized Reading Test to supplement COMPASS and ASSET scores in determining course placement)

Butler Community College

Assess and Place Students Effectively (Mandatory assessment and placement for English courses; includes writing sample)

Dodge City Community College

Developmental English Advancement Diagnostic (For reading and writing)

Hutchinson Community College

Meeting Students Where They Are (Using ACT scores and locally designed diagnostic assessments as well as COMPASS and ASSET in determining course placement)

Hutchinson Community College

Transforming and Re-Defining Developmental Education (Mandatory course placement)
Wichita Area Technical College

Mathematics

Developmental Redesign for Math and Reading - Academic Center for Enrichment (ACE) (Modified Emporium format using modularization and mastery learning Barton Community College)
Barton Community College

Hawkes Learning System Implementation (Mastery learning)
Butler Community College

Standard Syllabus, Grading Scale and Departmental Final Exam Score Implementation
Butler Community College

Accelerated Math Program (AMP)
Butler Community College

Hybrid Delivery of Developmental Mathematics
Highland Community College

Diagnostic Testing in MA097 Essential Principles of Math
Hutchinson Community College

Attendance Policy for Math Courses
Hutchinson Community College

C or Better Proficiency in Math Courses Prior to Gateway Course
Hutchinson Community College

Common Assignments and Final Exams
Hutchinson Community College

Flipped Classrooms in Developmental Math
Hutchinson Community College

Limited Class Size for Developmental Math
Hutchinson Community College

Redesign of Math Essentials, Elementary Algebra, and Intermediate Algebra using MyLabsPlus
Kansas City Kansas Community College

Reading

Developmental Redesign for Math and Reading - Academic Center for Enrichment (ACE) (Modified Emporium format using modularization and mastery learning)
Barton Community College

Online Individualized Reading – Reading Plus

Butler Community College

Reading Horizons (Explicit and systematic reading instruction which provides opportunities to transfer the skills gained in Reading Horizons to build fluency and apply to other texts.)

Dodge City Community College

Increase Reading (Uses first week of class for intensive instruction and possible progress through several levels)

Garden City Community College

Early Exit from Reading Comprehension Course

Hutchinson Community College

Multiple Exits from Reading Readiness Placement

Johnson County Community College

Redesigned Course Structure: Reading (Streamlined structure for a shortened pipeline)

Johnson County Community College

Reading and Writing Course Redesign

Program Improvement through Implementation of Best Practices: Developmental English

Fort Scott Community College

Limited Developmental English Class Size

Hutchinson Community College

Writing Course Redesign

Accelerated Learning Program (ALP)

Butler Community College

Cowley County Community College

English Proficiency for Sequenced Courses

Hutchinson Community College

Co-requisite English Courses (Composition 1 and Sentence Structures; for students placing just below college proficiency)

Dodge City Community College

Multiple Course Redesign

Accelerating Opportunity: Kansas (AO-K)

Barton, Dodge, Garden City, Highland, Hutchinson, Independence, Kansas City Kansas Labette, Neosho, and Seward Community Colleges, Wichita Area and Flint Hills Technical Colleges, Washburn Institute of Technology

Tier Project (Aligning equivalent levels across disciplines)

Butler Community College

Transforming and Re-Defining Developmental Education (Alignment with adult education content, math course redevelopment, mandatory first semester course for all students who place in developmental education)

Wichita Area Technical College

Learning Communities

Learning Communities

Hutchinson Community College

Alignment with K-12

TIPS Program (Transition into Postsecondary)

Johnson County Community College

Professional Development

Developmental Education (DE) Institute

Butler Community College

Academic Advisor Training

Hutchinson Community College

Institutional Policy and Change

Developmental Education Task Force Formation and Action

Butler Community College

AVID (Advancement via Individual Determination) (AVID is a college readiness system for elementary through higher education that is designed to increase school wide learning and performance.)

Butler Community College

Transforming and Re-Defining Developmental Education

Wichita Area Technical College

APPENDIX B

KANSAS DEVELOPMENTAL EDUCATION DATA



DEVELOPMENTAL EDUCATION

	Overall Totals									
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	18,921	40.0%	55.8%	16.0%	31.9%	57.5%	13.6%	23.0%	66.1%	32.7%
2009	19,250	37.2%	59.6%	18.1%	28.1%	61.9%	13.8%	22.2%	67.9%	36.7%
2010	25,729	33.9%	63.6%	18.4%	26.1%	67.6%	15.8%	19.5%	69.7%	35.1%
2011	24,835	37.4%	63.0%	18.5%	29.0%	66.4%	15.9%	21.8%	69.1%	34.7%
2012	23,863	37.2%	64.2%	18.0%	28.0%	67.5%	14.7%	22.2%	70.0%	33.4%
2013	19,908	41.9%			31.8%			25.0%		
State Universities										
2008	12,715	17.6%	67.9%	34.6%	16.0%	69.8%	35.3%	3.6%	63.8%	43.5%
2009	13,066	17.1%	66.1%	35.2%	15.7%	66.8%	34.5%	3.8%	71.5%	52.6%
2010	12,182	17.3%	68.5%	36.9%	15.6%	68.8%	35.6%	4.0%	76.1%	57.7%
2011	12,028	16.8%	62.2%	34.1%	15.3%	63.1%	33.2%	3.9%	66.8%	49.9%
2012	12,104	16.8%	67.8%	37.3%	14.9%	68.0%	36.5%	4.1%	71.3%	52.6%
2013	12,560	16.0%			14.1%			4.1%		



DEVELOPMENTAL EDUCATION

Age 17-19										
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	10,646	43.7%	54.2%	18.0%	34.6%	55.8%	15.5%	24.8%	65.2%	37.0%
2009	11,345	40.4%	58.3%	19.7%	30.1%	60.1%	15.1%	24.7%	67.3%	38.6%
2010	12,194	41.6%	62.8%	21.8%	31.1%	66.1%	19.0%	24.4%	69.2%	39.1%
2011	12,411	43.8%	62.7%	21.4%	33.5%	65.1%	18.7%	26.1%	69.4%	37.3%
2012	11,926	43.0%	63.0%	21.0%	31.7%	65.2%	17.6%	26.2%	69.9%	36.3%
2013	11,690	43.3%			32.2%			26.6%		
State Universities										
2008	11,209	16.7%	70.5%	37.1%	15.4%	71.9%	37.3%	3.1%	67.5%	48.8%
2009	11,694	16.3%	68.3%	37.4%	15.0%	68.8%	36.5%	3.3%	75.7%	59.2%
2010	10,830	16.0%	71.4%	39.7%	14.5%	71.4%	38.1%	3.5%	79.7%	63.3%
2011	10,673	15.4%	65.6%	36.6%	14.1%	66.4%	35.3%	3.4%	71.7%	55.6%
2012	10,787	15.5%	70.2%	39.4%	13.8%	70.2%	38.3%	3.6%	77.3%	57.6%
2013	11,273	14.6%			12.8%			3.5%		



DEVELOPMENTAL EDUCATION

Age 20-24										
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	4,229	40.8%	49.9%	12.3%	32.2%	50.1%	9.9%	24.6%	60.5%	28.0%
2009	3,857	40.9%	54.9%	15.4%	30.8%	56.6%	11.2%	25.2%	65.9%	32.9%
2010	5,943	34.1%	52.6%	12.9%	26.6%	56.1%	10.6%	20.5%	60.9%	27.5%
2011	5,768	37.0%	55.8%	13.8%	28.2%	59.6%	10.7%	23.2%	64.3%	30.6%
2012	5,479	36.5%	60.9%	13.6%	27.5%	65.2%	10.2%	23.0%	66.9%	30.2%
2013	3,894	46.8%			35.2%			28.5%		
State Universities										
2008	984	26.5%	53.6%	21.1%	22.9%	56.0%	23.1%	8.9%	53.4%	31.8%
2009	1,021	22.3%	49.1%	24.1%	19.8%	47.5%	22.8%	7.4%	59.2%	38.2%
2010	963	25.9%	45.8%	19.7%	22.4%	44.9%	18.1%	7.1%	54.4%	35.3%
2011	920	25.3%	45.9%	21.9%	22.1%	47.3%	22.2%	7.5%	47.8%	30.4%
2012	847	24.1%	58.3%	30.4%	21.0%	56.7%	28.1%	7.9%	59.7%	43.3%
2013	848	28.4%			25.5%			7.8%		



DEVELOPMENTAL EDUCATION

Age 25+										
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	4,000	29.6%	70.9%	13.1%	24.4%	74.4%	11.5%	16.6%	78.9%	23.0%
2009	3,981	24.9%	73.6%	15.5%	20.2%	78.1%	12.5%	12.2%	75.4%	33.9%
2010	7,490	21.5%	79.5%	14.8%	17.7%	85.2%	12.9%	10.9%	84.4%	31.9%
2011	6,590	26.1%	72.9%	15.4%	21.4%	77.9%	13.7%	12.6%	75.6%	31.5%
2012	6,338	27.3%	71.7%	14.0%	21.9%	76.5%	11.8%	14.4%	75.1%	27.8%
2013	4,287	34.1%			27.9%			17.6%		
State Universities										
2008	518	20.3%	57.1%	22.9%	16.6%	64.0%	27.9%	6.4%	54.5%	21.2%
2009	347	28.5%	61.6%	19.2%	24.5%	70.6%	20.0%	10.1%	51.4%	11.4%
2010	384	34.1%	74.0%	32.1%	30.5%	76.9%	34.2%	9.1%	80.0%	40.0%
2011	432	35.2%	50.7%	25.7%	30.8%	50.4%	25.6%	10.2%	56.8%	34.1%
2012	467	33.2%	54.2%	24.5%	29.3%	59.1%	27.7%	9.4%	36.4%	22.7%
2013	435	29.9%			25.7%			11.0%		

Age Unknown Too Small to Examine



DEVELOPMENTAL EDUCATION

Hispanic										
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	1,577	46.7%	55.3%	17.5%	33.9%	57.9%	16.3%	30.7%	65.1%	31.4%
2009	1,584	47.0%	61.7%	20.8%	31.9%	63.4%	15.8%	33.1%	71.2%	38.9%
2010	2,275	39.6%	63.6%	20.7%	26.0%	71.5%	15.5%	27.3%	72.8%	39.1%
2011	2,809	44.7%	63.8%	17.1%	35.0%	69.1%	16.5%	28.6%	69.2%	33.7%
2012	2,611	45.0%	64.3%	17.7%	32.7%	69.1%	13.5%	30.0%	72.0%	35.6%
2013	2,448	48.2%			34.2%			31.1%		
State Universities										
2008	483	29.6%	59.4%	32.2%	25.3%	59.8%	32.0%	7.9%	65.8%	47.4%
2009	561	29.1%	66.9%	36.2%	25.5%	69.2%	34.3%	10.7%	68.3%	58.3%
2010	582	32.1%	66.8%	36.9%	29.2%	65.9%	35.3%	8.9%	88.5%	69.2%
2011	705	25.2%	59.6%	28.7%	23.1%	61.3%	28.2%	7.1%	70.0%	48.0%
2012	799	25.4%	66.0%	39.9%	21.5%	64.5%	36.0%	8.4%	67.2%	50.7%
2013	901	26.2%			22.5%			8.9%		



DEVELOPMENTAL EDUCATION

African American, non-Hispanic										
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	2,123	62.9%	47.9%	11.6%	49.3%	49.0%	9.6%	46.9%	63.3%	29.2%
2009	2,192	59.6%	49.8%	15.1%	44.0%	51.7%	10.7%	44.5%	63.1%	34.1%
2010	3,043	46.0%	51.4%	12.8%	34.5%	56.8%	10.6%	33.8%	61.6%	29.6%
2011	3,063	51.3%	52.2%	11.8%	38.6%	57.2%	9.7%	37.3%	61.5%	27.5%
2012	3,303	50.7%	54.9%	12.2%	36.0%	59.6%	10.4%	38.1%	64.2%	26.7%
2013	2,637	58.8%			43.8%			42.9%		
State Universities										
2008	536	42.5%	55.3%	29.8%	37.7%	61.4%	31.7%	15.1%	58.0%	42.0%
2009	575	40.2%	52.4%	26.8%	36.7%	52.6%	25.1%	15.0%	74.4%	51.2%
2010	664	44.0%	59.6%	34.2%	37.8%	59.0%	29.5%	17.9%	77.3%	65.5%
2011	617	45.9%	49.5%	26.5%	41.0%	49.4%	24.5%	16.9%	63.5%	47.1%
2012	665	43.5%	55.7%	26.0%	37.6%	58.0%	26.4%	14.6%	64.9%	43.3%
2013	730	39.2%			32.2%			15.1%		



DEVELOPMENTAL EDUCATION

	White, non-Hispanic									
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	13,417	35.1%	57.0%	16.1%	29.1%	58.9%	14.0%	17.6%	66.8%	33.9%
2009	13,517	32.4%	61.1%	17.6%	25.4%	63.6%	14.1%	17.0%	67.5%	35.8%
2010	16,936	30.2%	66.9%	19.2%	24.2%	70.0%	17.4%	15.4%	71.8%	35.5%
2011	15,827	32.9%	65.2%	18.9%	26.7%	68.2%	17.0%	16.5%	70.2%	36.3%
2012	15,386	32.1%	65.8%	18.4%	25.3%	68.9%	15.8%	16.8%	70.1%	33.2%
2013	12,270	36.9%			28.9%			19.7%		
State Universities										
2008	10,329	15.8%	70.6%	36.0%	14.8%	72.1%	36.5%	2.6%	65.2%	46.2%
2009	10,246	15.7%	67.4%	36.4%	14.6%	68.0%	36.1%	2.7%	71.5%	53.8%
2010	9,395	15.0%	69.8%	37.7%	13.9%	70.3%	36.7%	2.5%	72.5%	53.8%
2011	9,157	14.8%	64.9%	36.1%	13.7%	65.9%	35.5%	2.7%	65.9%	51.0%
2012	9,163	14.4%	70.8%	39.2%	13.1%	70.6%	38.8%	2.8%	74.6%	54.6%
2013	9,342	13.3%			12.1%			2.7%		



DEVELOPMENTAL EDUCATION

	Other									
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	1,804	43.7%	62.7%	21.3%	30.1%	63.7%	15.7%	28.3%	69.3%	34.8%
2009	1,957	37.4%	66.4%	24.2%	26.3%	68.2%	15.9%	23.7%	75.8%	44.3%
2010	3,475	37.2%	63.6%	19.9%	27.8%	66.7%	15.1%	21.9%	70.7%	38.1%
2011	3,136	40.0%	66.7%	26.5%	25.8%	66.8%	18.7%	27.5%	75.5%	40.5%
2012	2,563	42.1%	70.8%	25.5%	29.2%	70.7%	17.5%	26.6%	78.6%	43.9%
2013	2,553	42.7%			31.3%			26.4%		
State Universities										
2008	1,367	16.8%	66.1%	30.4%	13.5%	67.0%	31.9%	5.3%	63.9%	33.3%
2009	1,684	13.7%	69.7%	34.6%	11.6%	70.8%	32.3%	4.5%	70.7%	45.3%
2010	1,541	14.2%	74.0%	35.6%	11.4%	73.9%	35.8%	4.9%	77.3%	49.3%
2011	1,549	13.5%	64.6%	35.9%	10.8%	64.3%	33.3%	4.5%	72.9%	51.4%
2012	1,477	14.9%	67.3%	38.6%	11.8%	68.4%	35.6%	5.0%	71.6%	59.5%
2013	1,587	15.6%			12.9%			4.6%		



DEVELOPMENTAL EDUCATION

Total first-time entry students receiving Pell grants										
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	5,185	54.6%	52.2%	14.3%	43.7%	54.3%	12.4%	33.4%	64.3%	34.3%
2009	5,412	51.1%	57.7%	16.7%	39.1%	59.5%	12.1%	31.5%	66.9%	36.2%
2010	8,111	49.4%	60.2%	16.8%	37.5%	65.5%	14.3%	30.2%	66.5%	35.0%
2011	9,117	52.8%	59.8%	17.0%	40.7%	63.9%	14.5%	32.4%	66.6%	34.6%
2012	9,233	52.1%	59.6%	16.5%	38.7%	62.6%	13.1%	33.1%	67.2%	33.3%
2013	8,627	51.5%			38.6%			33.2%		
State Universities										
2008	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
2009	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
2010	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
2011	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
2012	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
2013	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP



DEVELOPMENTAL EDUCATION

	Female									
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	9,832	38.5%	59.2%	18.0%	31.7%	60.8%	16.2%	19.7%	69.1%	37.1%
2009	10,075	35.4%	64.0%	20.6%	27.5%	66.0%	16.2%	19.3%	71.7%	42.5%
2010	11,924	35.9%	69.4%	21.2%	28.0%	73.1%	18.6%	18.9%	73.9%	41.3%
2011	11,578	39.8%	67.8%	20.2%	31.3%	71.5%	18.1%	21.6%	73.2%	39.7%
2012	11,091	39.8%	68.6%	20.8%	30.3%	72.1%	17.5%	22.1%	73.5%	39.7%
2013	10,132	41.2%			31.9%			22.9%		
State Universities										
2008	6,582	19.6%	70.7%	37.5%	18.1%	72.7%	38.1%	3.8%	68.0%	49.4%
2009	6,688	18.9%	72.0%	39.0%	17.7%	72.6%	38.3%	3.6%	78.3%	58.6%
2010	6,146	18.9%	73.8%	42.5%	17.2%	74.4%	41.3%	3.9%	80.1%	61.4%
2011	6,111	18.2%	65.8%	37.4%	16.5%	66.8%	36.0%	4.5%	69.1%	55.5%
2012	6,279	18.6%	72.2%	41.1%	16.8%	72.6%	40.8%	4.1%	73.6%	56.2%
2013	6,466	17.1%			15.4%			3.8%		



DEVELOPMENTAL EDUCATION

Male										
	# in cohort, first time, degree-seeking, academic year	% enrolling in remedial courses during first academic year.	% remedial enrollers completing remedial courses during two academic years.	% remedial enrollers completing remedial and College Algebra/English Comp I during two academic years.	% enrolling in math remedial courses during first academic year.	% math remedial enrollers completing math remedial courses during two academic years.	% remedial math enrollers completing remedial math and College Algebra during two academic years.	% enrolling in English or reading remedial courses during first academic year.	% English or reading remedial enrollers completing English or reading remedial courses during two academic years.	% remedial English/Reading enrollers completing remedial English/Reading and English Comp I during two academic years.
Community Colleges										
2008	9,059	41.7%	52.4%	14.0%	32.2%	54.1%	10.8%	26.6%	63.7%	29.2%
2009	9,145	39.3%	55.3%	15.7%	28.9%	57.6%	11.3%	25.4%	64.7%	31.9%
2010	13,641	32.3%	58.0%	15.8%	24.5%	62.1%	13.0%	20.1%	66.2%	29.9%
2011	13,233	35.4%	58.3%	16.9%	27.0%	61.2%	13.8%	22.0%	65.5%	30.4%
2012	12,761	34.9%	59.8%	15.2%	26.0%	62.9%	11.9%	22.4%	67.0%	28.0%
2013	9,755	42.7%			31.8%			27.2%		
State Universities										
2008	6,129	15.4%	64.1%	30.7%	13.7%	65.9%	31.5%	3.4%	59.0%	36.7%
2009	6,373	15.2%	58.3%	30.3%	13.5%	58.9%	29.3%	4.0%	65.0%	46.9%
2010	6,036	15.7%	62.1%	30.0%	13.9%	61.6%	28.4%	4.0%	72.2%	53.9%
2011	5,917	15.4%	57.9%	30.0%	14.0%	58.6%	29.6%	3.4%	63.7%	42.3%
2012	5,825	14.9%	62.0%	32.3%	12.8%	61.6%	30.5%	4.1%	68.8%	48.8%
2013	6,094	14.9%			12.8%			4.4%		

Unknown Gender Too Few To Examine