

*The Path to
College
Completion*

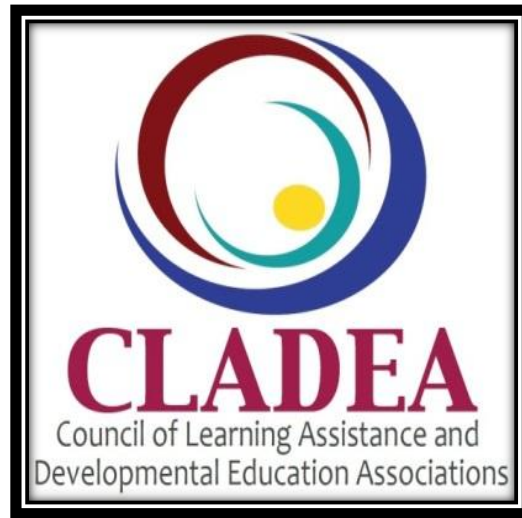
August 2013

MEANINGFUL ACCESS AND SUPPORT

This paper is a call to action for U.S. colleges and universities and higher education policymakers to provide meaningful access and academic support for all students. Meaningful access and academic support are imperative to increase graduation rates, develop an educated workforce, strengthen the economy, and compete globally.

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This white paper was written by Martha E. Casazza, Ed.D., with Sharon L. Silverman, Ed.D., on behalf of the Council of Learning Assistance and Developmental Associations (CLADEA). The Council consists of the following organizations, each committed to facilitating the success of all students enrolled in higher education through programs of learning assistance and developmental education:

Association of Colleges for Tutoring and Learning Assistance (ACTLA)

Association for the Tutoring Profession (ATP)

College Reading and Learning Association (CRLA)

National Association for Developmental Education (NADE)

National Center for Developmental Education (NCDE)

National College Learning Center Association (NCLCA)



A Call to Action: Five Imperatives

This paper is a call to action for United States colleges and universities and higher education policymakers to provide meaningful access and academic support for all students. Meaningful access and academic support are imperative to strengthen the economy, compete globally, and reach President Barack Obama’s (2009) goal of educating the highest rate of college graduates in the world by 2020.

A democracy depends on an informed citizenry and opportunity for all to advance economically. Meaningful access to postsecondary education and the academic support that follows is essential; therefore, educational institutions bear a significant responsibility to students and society. Colleges and universities must continue to adapt to the varied needs of the increasingly diverse students coming to postsecondary education. No longer can working adults, returning veterans, students of color, and first-generation students be considered “nontraditional.” Nor can misunderstood studies of “remedial” student programs shape policy. Indeed, today’s postsecondary students in all their diversity deserve meaningful access and robust and comprehensive systems of academic support.

This paper lays out five imperatives to forge a path toward increased college completion, explores policies that restrict or inhibit access and academic support, describes features of successful academic support programs, and responds to recent developmental education research. The five imperatives affirm a commitment to ensuring meaningful access and academic support for all students:

The Five Imperatives

1. Expand evidence-based, comprehensive support systems
2. Develop innovative funding models
3. Promote an ecosystem of education
4. Recognize developmental education as a field of practice with professional standards
5. Fund research to measure long-term impact



1. Expand evidence-based, comprehensive support systems

No one path to college completion exists, nor is one type of academic support sufficient for every student. Varied systems must be in place that provide different levels of support and are embedded into the overall fabric of all institutions. These systems must, in fact, start before college as high schools and middle schools begin to align their curricula and exit criteria to the entry requirements of postsecondary institutions. At the postsecondary level, support systems cannot be limited to one type of institution, just as they cannot be limited to one type of student. All colleges and universities must have in place a comprehensive support system that fits their students and institutional mission.

Once a student enrolls in a college or university, an evidence-based process of individual assessment, diagnosis, and placement must be ensured. The assessment measure must specifically align with a comprehensive support program. A specific plan can then be created and monitored continuously to facilitate the student’s progress toward his or her goals.

2. Develop innovative funding models

Current funding models for higher education and academic support programs are not working. States provide less support for public institutions, and students cannot afford ever-rising tuition. Administrators worried about finances abandon academic support programs, which are often perceived as supplemental or peripheral to their mission. This is a shortsighted approach because, when institutions underfund academic support programs, they must shift expenditures from retention to recruitment to replace tuition revenues of students forced to drop out.

Funding models must consider what it costs **not** to provide academic support for students. What is the cost to an institution to lose a student who has been recruited and enrolled? What does it cost taxpayers when a student on federal aid does not complete a needed credential and cannot find employment? What does it cost federal and state governments to provide social services for those who are unemployed due to lack of educational opportunity?

It is imperative to think anew about academic support and its significance. Among other options, there are cost-effective ways to use technology to provide academic support, accelerate learning, and achieve higher completion rates. New partners and external stakeholders (e.g., business, industry, and communities) must be found. States must also re-examine allocation across different levels of public education. Should the costs of academic support be shared between secondary and postsecondary systems?



3. Promote an ecosystem of education

Education in the United States is segmented generally by student age into preschool, elementary school, middle school, high school, 2-year postsecondary, 4-year postsecondary, and graduate and professional study. Each level is fairly discrete and defined by its own entry and exit criteria. Teachers are trained for a particular level, and curricula are developed within levels. It is easy for faculty and administrators at each level to blame their challenges on deficiencies of earlier levels.

By contrast, the Council of Learning Assistance and Developmental Education Associations envisions a collaborative, partnership model: entry and exit standards coordinated between levels, curricula aligned with each other, and instructors reaching across segments to ensure student achievement at each successive level. Such an ecosystem streamlines education for students by clarifying expectations, strengthening preparation, and responding to needs at every level.

4. Recognize developmental education as a field of practice with trained practitioners and professional standards

Developmental education as a field of professional practice can no longer be marginalized. Developmental education demonstrates the hallmarks of a profession:

- a core of knowledge
- a body of research
- graduate programs to train practitioners
- ongoing professional development
- program certification
- professional organizations
- peer-reviewed journals

Trained professionals working in the field must be recognized as the experts if the quality and effectiveness of academic support programs are under question. These are the individuals who must be invited to the table to engage in conversations about developmental education and specifically academic support for underprepared students.

Any local, statewide, and national innovations in developmental education under consideration should follow the research-based set of principles developed by professionals in the field (NCDE & NADE, 2013):

- 1) Identify baseline performance before implementing mandates.
- 2) Identify what is already working well.
- 3) Pilot innovations before mandating them.
- 4) Allow for local flexibility in implementation.
- 5) Provide for professional development.
- 6) Recognize that there are no simple solutions.



- 7) Involve those who will be implementing innovation in planning.
- 8) Identify the impact of innovation on minorities and the poor.
- 9) Include an evaluation plan.

Policymakers must respect and utilize these professional principles to guide change. They must not ignore the field's well-established body of professional expertise.

5. Fund research to measure long-term impact

Developmental education programs are working. Successful programs have student assessment and program evaluation data as evidence of their value. For example, academic support professionals know what it takes to create high-quality tutoring programs and coursework. Best practices are shared through professional conferences and journals and embedded in the program certification process. This ensures that practitioners have access to relevant data when developing new programs or enhancing existing programs.

At the state level, policy should be informed by research. States need to develop aggregated data systems to track students who have accessed academic support. Analysis of data by type of institution and completion rates would inform legislative decision-making with regard to appropriations. At the federal level, aggregated data are needed to allocate funding to local initiatives and also to make decisions related to student financial packages.

Equally important is for states to measure the impact of augmenting, reducing, or eliminating academic support programs. For example, now that Connecticut has decided to reduce drastically the academic support provided at the postsecondary level, student success and completion data as well as other measures of system failure must be analyzed. A plan must be in place for collecting and sharing student success data so that such legislative actions can be re-assessed.

The National Context

President Obama (2009) has called for the United States of America to have the highest proportion of college graduates in the world by 2020. What will it take to meet this challenge?

According to data from the Organization for Economic Cooperation and Development (2011), only 42% of the United States population aged 25-34 holds an associate's degree or higher, placing the U.S. 14th among 37 countries. The Department of Education projects that the country will need 10 million additional college graduates from community colleges and 4-year colleges and universities to meet the President's goal. At current graduation rates, the U.S. will be 8 million graduates short of the goal (Office of Postsecondary Education, 2012). The challenge is so great because by 2018 63% of jobs will require some postsecondary education (Carnevale, Smith, & Strohl, 2010).



The country strives to meet this college completion goal at a time when states are slashing fiscal appropriations to their public institutions and tuitions are rising. In 2011, state and local support was \$1.3 billion lower than it had been in 2007-2008, but enrollments grew by 12.5%. To bridge the gap, net revenues from tuition and fees grew from \$42.2 billion in 2008 to \$56.3 billion in 2011 (State Higher Education Executive Officers Association, SHEEO, 2012).

Colleges and universities must find ways to provide meaningful access to increasing numbers of students while reducing their expenses and accelerating students' time to completion. Data show that 37 million Americans have some college experience but no degree, and the national completion rate for attaining a degree or certificate is only 54% (Shapiro et al., 2012). Having access to postsecondary education has put many U.S. students on the path to upward mobility and increased employment opportunities. SHEEO (2012) reports that the median income is \$29,423 for a high school graduate and \$50,360 for the holder of a bachelor's degree. Inaction is not an option

The United States has made great strides since its earliest period when, for the most part, only a small segment of the population attended colleges and universities. Other qualified candidates for higher education were locked out of that system, which widened gaps among economic classes. In the 19th and 20th centuries, Congress responded by developing community colleges, passing the Morrill Acts (1862 and 1890) to broaden participation in education, and passing the Servicemen's Readjustment Act (GI Bill) following WWII (1944).

These initiatives were created to open the doors of the academy to more high school graduates. Congress made it possible for individuals from a wide spectrum of economic and educational backgrounds to become more highly educated, prepare to contribute meaningfully to a democratic society, and compete for increasingly knowledge-based jobs. Among the significant outcomes of this access was the development of a strong economic middle class, narrowing the gap between rich and poor.

Increased access to higher education in the 20th century has been critical to the health of local communities and to the global competitiveness of the United States, and it must continue. Educational institutions must continue to adapt to the increasingly diverse needs of incoming students. It became clear in the 1970's that access without appropriate academic support systems was not meaningful, and the "open door" often became a "revolving door." Students were admitted who did not have the appropriate preparation for college success, and they did not persist to completion.

Revolving-door college enrollment is not a viable option for the U.S. economy. It costs students far too much to invest their dollars, time, and energy and not complete their programs of study. It also costs taxpayers too much at a time when unemployment is high and the economy stressed.



Principles Underlying Academic Support

Increasingly diverse students will continue to enter postsecondary education. Working adults, returning veterans, students of color, and first-generation students can no longer be labeled “nontraditional.” They have become the new “traditional,” and they deserve robust systems of academic support. *Systems* is a key word in this context. There is no one type of academic scaffolding that works for all. Support systems must align with particular student populations and institutional missions. Ignoring meaningful access is not an option.

While research demonstrates that one size does not fit all, there are underlying principles for developing academic support systems that facilitate increased student persistence and college completion. The following is an expression of these principles as a formula:

$$\text{High Expectations (HE) + Comprehensive Support (CS) = Student Persistence (SP)}$$

This equation states that persistence of students to degree completion depends in part on articulating high expectations across the institution and setting a rigorous set of standards that *all* students strive to meet. Some students will need more support than others to meet expectations and succeed. That is why a system of academic support must be embedded into the overall culture of the institution. Particular elements of academic support systems may be different depending on the institutional mission and student population, but each institution’s system must be comprehensive, including both *academic* support (coursework, tutoring, learning assistance) and *nonacademic* support (advising, counseling, support groups).

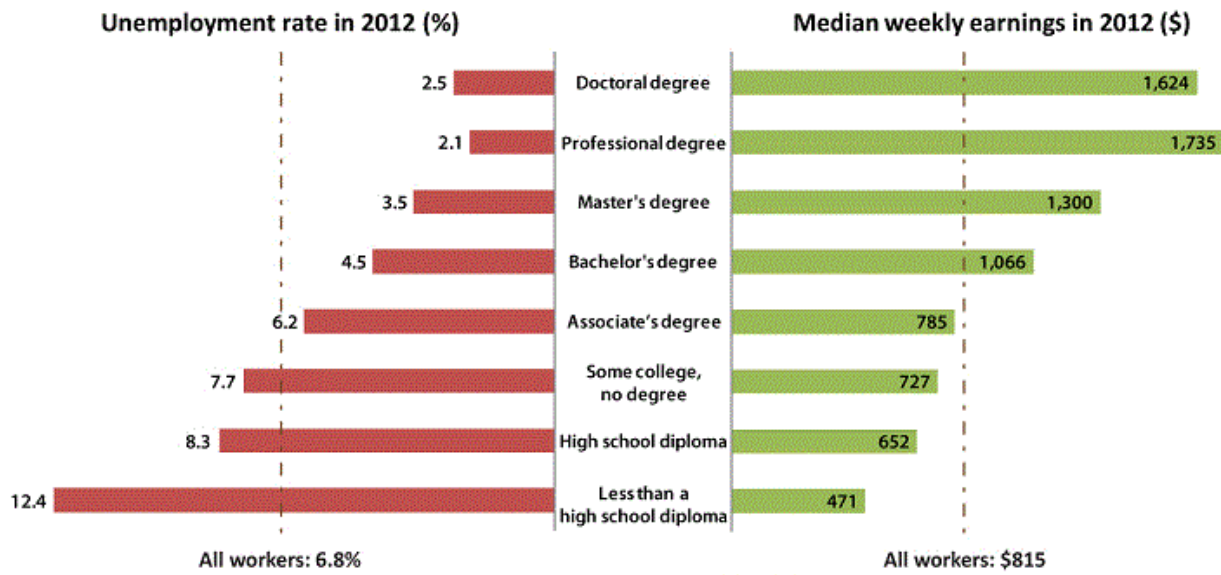
Economic Effects of Higher Education Policy

Under-serving the nation’s undergraduates has calamitous effects on the economy. According to Carnevale, Smith, and Strohl (2010), “by 2018, the postsecondary system will have produced 3 million fewer college graduates than demanded by the labor market” (p. 16).

There are economic effects on millions of citizens, too. A college credential paves the way to increased earnings and higher rates of employment. According to the Bureau of Labor Statistics (2013), the rate of unemployment in 2012 increased as the level of education decreased. Accordingly, median weekly earnings increased as the level of educational credential went up: in 2012 as in years past, those with no college degree were unemployed at rates higher than the national average and had weekly earnings below the national average (Figure 1).



Figure 1. Earnings and Unemployment Rates by Educational Attainment



Source: Bureau of Labor Statistics, Current Population Survey

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers.

To strengthen the overall economy and enhance the nation’s ability to compete and innovate as well as to build a vigorous middle class, it is imperative for students to have access to the highest credential to which they aspire. For some, this access requires a robust support system. Can those who need support be denied the opportunity to increase their educational credentials? What is the impact on a democratic society when access to education is limited? What are the costs of high unemployment?

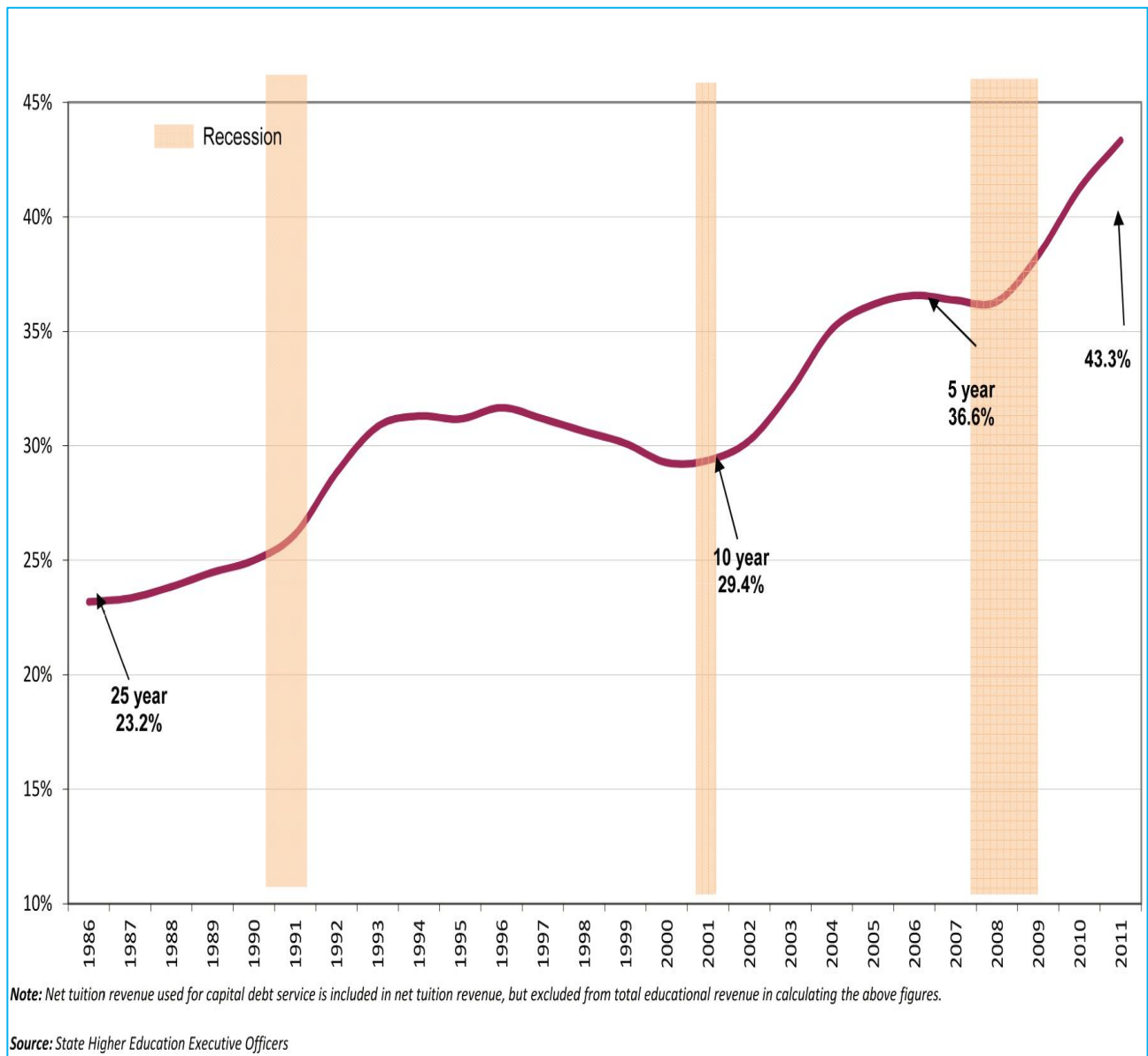
Reduced Appropriations Threaten College Completion

Another way to consider how economic policies operate on higher education is to examine educational appropriations for public institutions. According to the National Center for Education Statistics (2012), 76% of undergraduate students attend public institutions, which makes this group of colleges and universities a good reference point. Based on recent data from the State Higher Education Executive Officers (SHEEO, 2012), full-time equivalent (FTE) appropriations from states to postsecondary institutions decreased by 22% from 1986 to 2011 while net tuition revenue per FTE increased by 49%. Students are paying more than ever to receive the credentials they need; they also see that public support for education has diminished.

This drop in state support has significant effects on students’ ability to complete a college credential in a timely fashion. Institutions close programs due to lack of funding, and the number of class sections is often reduced in order to cut back on institutional expenses. SHEEO (2012, p. 24, shown in Figure 2) has graphed the data from multiple measures, showing clearly the increase over time in institutional dependence on tuition as revenue.



Figure 2. Net Tuition as a Percent of Public Higher Education Total Educational Revenue, U.S., Fiscal 1986-2011



Until states commit to more appropriate funding models, postsecondary tuition will continue to increase for the foreseeable future. State appropriations show no signs of increasing in the short term. More students will be forced to find employment at a time when unemployment for less-skilled workers is high. Time spent at work may have adverse effects on students' ability to succeed in school. Students will likely need additional academic support to catch up, and they may need to stop out or reduce the number of courses in which they enroll. Of course, any of these decisions—intended to keep students enrolled—in fact lengthens



students' time to completion, which also in turn delays and reduces these graduates' meaningful contributions to the nation and to its economy.

Institutional investment in a meaningful academic support program provides the assistance needed when economic factors threaten chances to complete college. It is good to note that community college students who successfully complete a sequence of developmental courses will graduate or transfer to 4-year institutions at rates comparable to those of students who were not required to take developmental coursework (Bahr, 2010).

Benefits of Academic Support Programs Outweigh Costs

Lately developmental programs in general have been under attack for their cost. Some state systems have phased out remedial education from their 4-year institutions (as at CUNY) or legislated significant reductions (as in Connecticut, where community colleges can provide only one term of remedial programming) to reduce costs. Twenty-two states have reduced or eliminated developmental coursework from their public colleges and universities (Parker, 2007).

What is the cost of an academic support system? Unfortunately, data that reflect the actual costs of remediation are limited. When states and institutions do report on the status of remedial programs, they often apply different definitions, making valid across-state comparisons difficult.

In 1998 Breneman and Haarlow reported, based on 1993/1994 data, that the cost of remedial education was \$1 billion, out of a public higher education budget of \$115 billion—less than 1% of college revenues. Costs varied across states, with Maryland spending 1.2% of its budget for public institutions of higher education on remediation and Washington appropriating 7% of its budget to remediation in FY 1995 (Breneman & Haarlow, 1998). Abraham (1998) considered both costs and benefits by projecting that if 30% of remedial students earned bachelor's degrees, they could contribute \$87 billion in taxes over a lifetime of work. This tax boon would more than cover the estimated costs of remedial education.

In 2011, Pretlow and Wathington provided an updated estimate of national costs using Breneman and Haarlow's methodology. They found that the cost of developmental education, as a percentage of higher education budgets, had decreased over the intervening decade. Using data from 2004/2005, they estimated the national cost to be \$1.13 billion, or only 0.48% of total higher education revenues. Another recent report, from the Board of Regents in Ohio, showed that even though 38% of incoming freshmen were taking remedial coursework, costs for those courses amounted to only about 3.6% of undergraduate instructional costs (Wellman & Vandal, 2011).

“Being placed in remedial courses really hurt me. My pride was hurt; it made me devastated. I felt like giving up. I wanted to quit; I didn't believe in myself.

“I came to see that the remedial classes weren't really a punishment. It was really there to enhance me.”

-- Algernon T. Kelley, an African-American male who now has a Ph.D. in chemistry (TRPP Associates, 2013)



When allocating limited resources, states and institutions must conduct analyses of costs and benefits to determine where their dollars will have the greatest impact. Decision makers need to ask probing questions:

- How much does it cost the institution when students drop out compared to the benefits of academic support systems that increase student persistence?
- What exactly are the costs to replace students who leave early without credentials?

The most important question remains to be answered: What is the cost to our country of losing those students who need support systems to complete their postsecondary education? The nation risks losing a more educated citizenry, crucial to a democratic society. Also at risk for loss are productive workers who will be qualified for jobs requiring high-level skills. Saxon and Boylan (2001) weighed the benefits this way: by providing support, institutions decrease the very real possibility that these “lost” students will come to depend on expensive state and federal programs such as incarceration and welfare. Depriving students of academic support programs that provide benefits to state and national economies is not a reasonable option.

Changing Demographics Require Investment in Academic Support Systems

In addition to allocation funding and economic changes to higher education, demographic changes are also affecting outcomes. Data provided by the National Center for Educational Statistics (Digest, 2011; Fast Facts, 2011) demonstrate that in 1976 postsecondary enrollment was much more homogeneous than it is today. A little more than 83% of the student population was reported as White in 1976, while that percentage had decreased to 61.5% in 2010. The student population has become substantially more diverse, with the percentage of minority and disadvantaged populations increasing from 17% in 1976 to 40% in 2010.

Another demographic factor is the increasing gap in bachelor degree completion for students aged 25-29. In 2012, the gap between Whites and Blacks in this age range was 17 percentage points, and between Whites and Hispanics was 25 percentage points (Aud et al., 2013; see Table 1).

These data imply that the needs of college and university students are changing. Students seem to be coming from a wider range of secondary schools with varying amounts of academic preparation. They will need comprehensive systems of support in order to complete their educational credentials successfully. According to Wellman and Vandal (2011), 40% of students coming to college lack the skills they need to succeed.



Table 1.
Postsecondary Enrollment by Race/Ethnicity, 1976-2010

Race/ethnicity	Enrollment (in thousands)					Percentage distribution of students				
	1976	1980	1990	2000	2010	1976	1980	1990	2000	2010
Total	9,276	10,259	11,740	12,867	17,678	100.0	100.0	100.0	100.0	100.0
White	7,740	8,481	9,273	8,983	10,898	83.4	82.7	79.0	69.8	61.6
Black	943	1,019	1,147	1,549	2,677	10.2	9.9	9.8	12.0	15.1
Hispanic	353	433	725	1,351	2,544	3.8	4.2	6.2	10.5	14.4
Asian/Pacific Islander	169	249	500	846	1,088	1.8	2.4	4.3	6.6	6.2
Asian	—	—	—	—	1,030	—	—	—	—	5.8
Pacific Islander	—	—	—	—	58	—	—	—	—	0.3
American Indian/Alaska Native	70	78	95	139	179	0.8	0.8	0.8	1.1	1.0
Two or more races	—	—	—	—	294	—	—	—	—	1.7

NOTE: Race categories exclude persons of Hispanic ethnicity. Because of underreporting and nonreporting of racial/ethnic data and nonresident aliens, some estimates are slightly lower than corresponding data in other published tables. Adapted from *Digest of education statistics, table 237. Total fall enrollment in degree-granting institutions, by level of student, sex, attendance status, and race/ethnicity: Selected years, 1976 through 2010.* National Center for Education Statistics. Alexandria, VA: U.S. Department of Education. Published in 2011 without copyright.

Meeting the Needs

Boylan and Goudas (2012) reported that postsecondary students who are placed into remediation are “disproportionately characterized by known risk factors such as being minority, low income, first generation and underprepared” (para.10). Of course, not all students transition directly from high school to college; Merisotis and Phipps (2000) reported that many remedial students are 20 years old or older, either returnees to college or delayed entrants. NCES (Fast Facts, 2011) has projected that the enrollment of students 25 and over will increase 20% between 2010 and 2020. According to the Western Interstate Commission for Higher Education (WICHE) report (February 2013), the number of White students graduating from high school will decline by 13% between 2008/2009 and 2024/2025. This will increase the need for colleges and universities to recruit from populations less traditionally served, including older and minority students.

Many of these students need additional support to be successful. Some will have been out of school for many years and will need to brush up on once-learned skills. Others will come from high schools where their basic skills were not developed. Still others will not have the particular skill set to achieve their academic goals (e.g., mathematics skills sufficient for a non-STEM program but underdeveloped for a major in engineering). When students are admitted through the doors of higher education, institutions have a responsibility to assess students’ strengths and challenges and provide appropriate support systems. Students admitted to an institution’s programs must have the opportunity to earn the credentials they seek. The new demographics are the present and future of higher education: ignoring these students is not an option.



Recognizing Standards of Practice

In a recent report, the U.S. Department of Education’s Office of Postsecondary Education (2012) recommended that “student success can only be attained through integrated and sustained

“My journey as a math professor began at Palm Beach Community College . . . when I reluctantly enrolled in an evening Basic Algebra course. . . I had failed algebra in high school and firmly believed I did not possess the ability to do math. To my surprise, not only did I pass the class with a 99% average, I knew when the term ended that one day I would teach Basic Algebra at the College. I graduated from the College with presidential honors in May of 1994, and in April of 1997, I graduated magna cum laude from Palm Beach Atlantic College with a Bachelors of Science Degree in Mathematics.”

--Eileen C. Doran, Palm Beach State College (Florida College System, n.d., p. 7)

strategies and programs that are part of a systematic plan and, ultimately, are supported by an institutional culture” (p. 25).

Academic support professionals have been calling for decades for coordinated systems of support. Keimig (1983) observed that effective programs—that is, programs that produced increased grade point averages and retention statistics—were both comprehensive and institutionalized into the academic mainstream of the institution.

Recommendations by Keimig, scholars at the Office of Postsecondary Education, and others underscore the standards for learning assistance programs articulated by the Council for the Advancement of Standards in Higher Education (CAS, 2012). CAS is a consortium of professional associations including the College Reading and Learning Association (CRLA) and the National Association for Developmental Education (NADE). Association representatives collaborate to develop standards and guidelines that ensure excellence in higher education programming focused on student learning and developmental outcomes. The CAS standards require that all institutional programs document student learning and development resulting from their programs and services.

The CAS Standards provided a framework for the guidelines developed by CRLA in the 1980’s and 1990’s to ensure minimum standards for tutor and mentor training programs. On the foundation of CAS standards, NADE, too, created a Certification Council that developed self-evaluation guides (Clark-Thayer & Putnam-Cole, 2009). These guides provide research-based standards of practice leading to program certification.

NADE has certified 69 programs across 54 institutions. These programs are exemplars of evidence-based best practice. Demonstrating the comprehensive nature of successful support services, the certified programs include developmental coursework, tutoring services, and course-based learning assistance. Two distinctive categories are applied to the certification awards, general and advanced. Both require extensive evaluation data in addition to a theoretical framework. The process is rigorous. Applicants must attend a certification training session, conduct a self-study of their program, and undergo peer review of their programs and services.



What Do Effective Programs Look Like?

One example of an effective, certified program comes from The University of North Carolina (UNC) at Greensboro (Bailey, 2009). Its tutoring program, located in the Learning Assistance Center (LAC), reported data from its 2008 cohort of entering students (Table 2). Data are based on degree-seeking freshmen as of the 10th day of class. LAC refers to students who received support from the Learning Assistance Center; Table 2 distinguishes groups of LAC students by the number of times they received support. In the non-LAC column are students who did not access support.

Table 2
Grade Point Averages and Next-Semester Retention of LAC and non-LAC Freshman Students

	All freshmen	Non-LAC	LAC-all	LAC 1-4 visits	LAC 5-14 visits	LAC 15+ visits
GPA after 1 semester	2.75	2.74	2.80	2.62	2.78	3.09
GPA after 1 year	2.68	2.67	2.74	2.55	2.73	3.01
% enrolled following Spring	92%	92%	94%	91%	95%	96%
% enrolled following Fall	77%	77%	78%	73%	77%	88%

The data demonstrate a clear trend: the more support that students received overall, the higher their grade point average (GPA) and the more likely they were to stay in school. The average SAT score for all fulltime freshmen in the 2008 cohort at UNC at Greensboro was 1039 while the average SAT score for those who were receiving support from the LAC was only 967. Despite projections that would have categorized the latter students as “at risk” on the basis of low SAT scores, these students are persisting and demonstrating more academic success than those who had higher scores at admission and did not receive support.

A second example of a NADE-certified and highly successful program comes from Lone Star College-CyFair in Texas (Albarelli, 2010). At this institution, developmental courses are offered by the Transitional Studies Program, which supports an integrated services model. All students entering the College meet with an academic advisor to articulate their goals and assess their strengths. Based on this intake process, students may be required to take transitional coursework in English and/or mathematics. These courses are designed with learning outcomes aligned with the expectations of subsequent, core courses. The curriculum for each transitional course is allocated into 64 contact hours, including instructional time in the computer lab.



Tables 3 and 4 indicate the numbers of Lone Star-CyFair students who complete the developmental courses in reading, writing, and math and within one year also successfully complete the first-level core course. Table 5 presents data on students in transitional (DS) courses who also persist from the fall to spring semester; first-semester retention is a predictor of ultimate college completion.

Table 3
Retention of Transitional (DS) Course Students, Fall 2007-2009

TERM	DS COURSE	DS STUDENTS IN FALL TERM	DS STUDENTS RETAINED TO SPRING TERM	RETENTION PERCENTAGE
Fall 2007	Math	2,686	1,992	74%
	Reading	553	411	74%
	Writing	827	612	74%
Fall 2008	Math	2,514	1,849	74%
	Reading	604	439	73%
	Writing	841	601	71%
Fall 2009	Math	2,824	2,233	79%
	Reading	707	537	71%
	Writing	999	764	71%

Table 4
Successful Completion of College-Level ENGL1301 Within 1 Year of Successful Completion of Fall ENGL0305 and ENGL0307

	Fall 02		Fall 03		Fall 04		Fall 05		Fall 06	
	#	%	#	%	#	%	#	%	#	%
LSCS Total	834	80%	950	76%	1,135	75%	1,102	74%	1,075	73%
LSC-CyFair Total	115	84%	264	82%	305	79%	299	75%	332	83%



Table 5
Successful Completion of Math1314 Within 1 Year of Successful Completion of Fall Math0310

	Fall 02		Fall 03		Fall 04		Fall 05		Fall 06	
	#	%	#	%	#	%	#	%	#	%
LSCS Total	731	81%	873	83%	739	80%	695	78%	796	80%
LSC-CyFair Total	62	83%	180	81%	174	80%	182	78%	213	72%

The Mathematics Department at Vernon College (Patin, 2011) provides another example of an effective program. Its developmental math course sequence is coordinated by a faculty member with specialized training in developmental education. The three courses in the sequence have been divided into modules each 8 weeks long; modular curriculum allows students the option of repeating a section immediately or moving ahead. The courses were designed by a top-down process that began by asking College Algebra instructors to identify prerequisites needed for that college-level course. Those prerequisite components were then integrated into the developmental sequence, together with a study skills component and open lab hours. Open labs afford unlimited practice with software that is integrated with textbooks. Adjunct faculty and tutors are paid to staff the labs and provide supplemental assistance.

The data in Table 6 indicate that students who complete the developmental math courses (DM) are successful in Contemporary Math and College Algebra, both college-level courses. Frequently these students surpass those who did not take developmental coursework.

Table 6
Success of Students in College-Level Math With and Without Prior Developmental Coursework

Term Completed		Grades	Contemporary Math		College Algebra	
DM	College		With DM	Without DM	With DM	Without DM
FA 08	SP 09	A, B, C	74%	75%	65%	49%
		D, F	21%	15%	26%	23%
		W or WF	5%	10%	9%	28%
SP 09/SU 09	FA 09	A, B, C	66%	72%	58%	60%
		D, F	17%	17%	13%	23%
		W or WF	17%	11%	29%	18%
FA 09	SP10	A, B, C	70%	65%	53%	46%
		D, F	20%	23%	25%	21%
		W or WF	10%	12%	22%	33%
SP 10/SU 10	FA 10	A, B, C	71%	74%	72%	81%
		D, F	24%	19%	22%	8%
		W or WF	5%	8%	6%	10%

Note: Percentages based on total number of students registered for course



The data from these three NADE-certified programs indicate that there is a correlation between academic support and college success and persistence. These programs demonstrate several components of effective support programs:

- time on task
- alignment with core college curriculum
- supplemental assistance
- continuous collection of evidence to track impact and make informed decisions about effectiveness

The need for robust support systems is well demonstrated. Standards for program excellence are available across the overall system of developmental education. What works and what does not work has been identified and will continue to be explored in the field. Best practices need to be disseminated through professional forums and professional development opportunities. Professional practice must be monitored and long term outcomes assessed to ensure that student needs are being met. Effective systems of academic support can be replicated on campuses where needs are still unmet.

Responding to Recent Research and Critics

Currently there is considerable national discussion about a “broken” system of remediation. Critics of developmental education tend to focus on two components of the larger system of support: inaccurate placement testing and ineffective developmental coursework. Based on data from students who test near the cutoff score on either side, critics argue that the coursework should lead to better outcomes than those of college-ready students. When the data do not confirm these outcomes, disparagers conclude that remediation is not working. This is an overgeneralization based on a limited, narrow sampling of students. Such a conclusion is also based on a narrow understanding of student learning and the system of developmental education, of which remediation is but one component.

Coursework alone is not a support system. Institutions must offer a comprehensive system of integrated services. Students should be able to access services across units, and the concept of support must be embedded in the institutional culture.

There is no evidence that developmental coursework lowers graduation rates. In some studies, correlation has been found between enrollment in remedial courses and lower graduation rates, but direct causality has not been demonstrated. In many cases, there are numerous differences between students who need academic support and students who do not. Other (primarily socioeconomic) factors are likely to cause both the need for remediation and low college completion rates. According to Jenkins, Jagers, and Roska (2009), only 30% of students completing their remedial courses enroll in college-level coursework within two years. More descriptive data are needed to explain these numbers.



What is going on during those two years? Is it accurate to blame development coursework for non-enrollment? It is more productive to examine additional factors that correlate with non-completion rates. Students have complicated lives, especially those who need additional support: they tend to work part-time or full-time jobs and support families. They also tend to lack an external support system. To offset these factors, comprehensive academic support systems available on some campuses provide an integrated approach and include components outside the classroom, such as counseling, tutoring, career services, and financial aid assistance. To determine what is working and what is broken requires comprehensive analysis of whole systems, beyond developmental coursework.

Conclusions cannot be drawn from studies of narrow student samples. Some critics have argued that developmental education is not working on the basis of a narrow sampling of students who test near the cutoff scores on placement tests and show no differences in academic success and graduation rates as a result of taking developmental courses. This conclusion is based on students who appear to have similar skill sets at one point in time, the time of the test. However, because the sampling is biased, the comparison is not valid. More sophisticated studies are needed to examine the results of the broader set of students who require support and complete it successfully.

Use of accurate terminology can avoid erroneous conclusions. Critics addressing the issue of academic support tend to misuse terminology, which can lead to significant misunderstandings. *Remedial* is often used as the generic descriptor for all academic support. This is inaccurate. One recent report defined remediation as “sequences of semester-long courses that students must complete before gaining access to college-level gateway courses” (Core Principles, 2012, p. 1). In fact, remediation is but one element under the broad umbrella of developmental education, which has been defined by Boylan (1999) as “the integration of academic courses and support services guided by the principles of adult learning and development” (p. 1). As a subcomponent of developmental education, remedial courses address pre-college material and constitute part of a system that includes the provision of an array of support services. Conclusions about developmental education and academic support should not be drawn from studies of one element of the larger system.

Academic support must be integrated and comprehensive. It is not simply a set of placement tests followed by a sequence of courses. Academic support is an intentional, systematic approach to support for a wide range of students that includes coursework plus much more. For decades, developmental educators and learning assistance professionals have provided programs necessary for meaningful access. These professionals have worked collaboratively in their institutions from academic departments, learning centers, and advising offices. According to Arendale (2010), learning assistance operates at the crossroads of academic affairs, student affairs, and enrollment management.

Overall systems of support are not broken. Academic support professionals deliver coursework, supplemental instruction, tutoring services, bridge programs, advising, and



academic coaching. They work across units to ensure close integration of services. Their coursework and tutoring programs strive to meet evidence- and consensus-based standards and undergo rigorous national certification processes. Professionals in the field continuously evaluate their programs and student outcomes to inform their practice and ensure continuous quality improvement.

Call to Action

In this paper, policy issues related to meaningful access and support in higher education have been presented. It is imperative that institutions move forward with enthusiasm and commitment to ensure opportunity for all. Education is at the core of healthy communities, the economy, and global competition. The five imperatives are essential to success:

1. Expand evidence-based, comprehensive support systems
2. Develop innovative funding models
3. Promote an ecosystem of education
4. Recognize developmental education as a field of practice with professional standards
5. Fund research to measure long-term impact

The time for action is now. Delay is not an option.

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