



Remedial and Developmental Education Policy at a Crossroads

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Remedial and Developmental Education Policy at a Crossroads

The education of the “remedial” student is the most important educational problem in America today, more important than educational funding, affirmative action, vouchers, merit pay, teacher education, financial aid, curriculum reform, and the rest. Providing effective “remedial” education would do more to alleviate our most social and economic problems than almost any other action we could take.

~ Alexander Astin, 1998, p. 12

The history of remedial education can be envisioned as a system running on two parallel, yet seemingly divergent tracks. One track recognizes the critical function of higher education as the keeper of traditional norms and values of a scholarly endeavor whereas the other promotes democratic ideals of fairness and equality. Along the traditional track, remedial education programs are a necessary, but often unwelcome enterprise given the scores of underprepared students entering institutions of higher learning (Tierney & Garcia, 2008). The track characterized by democratic ideals views these programs as an opportunity to expand access and serve community workforce and economic needs (Casazza & Silverman, 1996). That higher education can embody these ostensibly opposing ideological stances is evident in the wide-ranging systems of tertiary learning dotting the national landscape. However, there are points in time when these tracks converge at critical junctures, eliciting a tension-filled debate over the merits of remedial education, its role in higher education, and its ability to facilitate equitable educational outcomes.

Kozeracki (2002) posits three questions informing this debate:

Does developmental education belong in higher education at all, and, if so, should it only be taught at the community colleges? Should developmental education be privatized? Is it in the public’s best interest to support developmental courses financially? (p. 88)

Long (2005) proffers additional questions that should similarly be considered in the policy debate asking, “Do the courses help remedial students perform better and remain in higher education longer? Is the investment in remedial programs worthwhile?” (p. 3).

Arguments in favor and against remedial and developmental education can be traced throughout the nearly 400-year history of American higher education. Because the founding and expansion of the colonial colleges predated public systems of primary and secondary education, many students admitted to institutions such as Harvard, the College of New Jersey, King’s College and others were inadequately prepared. Yet because the pool of students available for admission was so small, colleges accommodated their learning “deficiencies” and provided tutoring and other forms of remedial instruction (Casazza & Silverman, 1996). Two hundred years later, President Henry Phillip Tappan of the University of Michigan railed against these “rudimentary courses...[that]...were lowering educational standards by admitting poorly prepared students” (Brubacher & Rudy, 1976, p. 109) and called for their removal.

Today's debate raises similar ideological questions of purpose (Long, 2005) and legitimacy (Clowes, 1980) to include the economic return on investment of remedial education (Alliance for Excellent Education, 2008). Whereas some would argue that the public should not have to pay for the same instruction a second time, others defend the essential benefits of remedial courses as a means of preparing tomorrow's workforce. As Astin (2000) observes, "Educating everyone is a whole lot less expensive, both monetarily as well as socially and emotionally, than to carry along in society large numbers of people with minimal educational development" (p. 2). Indeed, it is this argument that speaks to President Obama's goal for the United States to have the "highest proportion of college graduates by 2020" (Hebel & Selingo, 2009). Other organizations have offered their support for similar goals, including The Bill and Melinda Gates Foundation who have pledged millions of dollars in support of doubling the number of low-income students earning degrees by 2025 and Lumina Foundation for Education, which aims to increase the percentage of individuals with high-quality degrees, also by 2025.

The policy debate surrounding remedial and developmental education has reached another crossroads, revealing the paradox of needing remedial education to serve academically underprepared students while simultaneously arguing over its appropriateness in higher education. This literature review therefore serves multiple purposes. First, it identifies reoccurring themes found throughout the history of remedial and developmental education¹ in American higher education that speak to these ongoing policy debates. Second, the review examines the ways remedial and developmental education programs have been conceived and understood as a policy issue. Finally, the review looks to how individuals, systems, and states have responded to the remedial education policy debate. In doing so we highlight important policies and programs in both historical and current day contexts and trace the long-standing debate over the causes of, responsibilities for, and effectiveness of remedial education. What we find is the debate surrounding remedial and developmental education has changed little over time and the same conversations we are having today are similar to those of earlier eras in education. This literature review furthers our understanding of remedial and developmental policies and, as a result, provides insight on how states and postsecondary systems can develop more effective policies that retain higher education quality, maintain access, and improve student outcomes in postsecondary education.

Defining the Preparation of the Underprepared Student

In *Terms of Endearment: Words that Define and Guide Developmental Education* (2005), David Arendale speaks to the interchangeability of terms and its consequence. He notes how certain terms are used to fuel the agendas of some while others politicize vocabulary such that specific words assume "a different meaning or value because a small group within society has affixed a positive or negative status with the word" (p. 67). In regard to remedial and developmental education, the negative connotation associated with the term "remedial" has led to the increased usage of the term "developmental." For the purposes

¹ For the purposes of this paper, we use the terms remedial and developmental education interchangeably.

of this paper, and similar to Arendale's intent with *Terms of Endearment*, we offer definitions for "remedial" and "developmental," which are used throughout this literature review, to offer some understanding into why and how these terms are used in higher education and within policy circles.

As previously noted, "remedial" and "developmental" are terms that are often used interchangeably (Ross, 1970) in the literature to describe a program of study designed for students considered ill-prepared for college-level coursework. *Remedial* is derived from the Latin *remedialis* (1651) meaning "healing, curing, relieving." When applied in relation to a student, the term implies the need to remedy or correct "specific skill deficits" (Casazza & Silverman, 1996, p. 31). In contrast, *developmental*, derived from the French *développement* (1754-55), suggests a "process of development, growth, progress." These two distinct definitions, when applied to either student or coursework, clearly delineate an orientation or belief system that is either grounded in a student-deficit framework or one that recognizes potential for growth. "Remedial" suggests students have not yet acquired the necessary skills for success at the postsecondary levels, and, as such, their skill deficiencies demand a need for "treatment" (Clowes, 1980) that is repeated until such a time the treatment works. "Developmental" implies an unfinished process of learning; that is, the development of students as learners has not yet been fully realized and growth can be promoted via assistance.

In the last 150 years, "remedial" is a term that was and continues to be used throughout higher education, from policies to the naming of course sequences. In the 1970s, however, the term "developmental" gained favor among practitioners because it was viewed "as a more comprehensive model regarding the student because it focuses on [the] development of the person in both the academic and affective domains" (Arendale, 2005, p. 72). In between the application of these two terms was "compensatory" education, which harkened back to national legislation enacted in the 1960s. Whereas remediation aims to "remediate" skill deficiencies, and "developmental" is geared towards developing "the diverse talents of students" (Cross, 1976, p. 31), compensatory education intended to address issues of past discrimination (Clowes, 1980). The federal TRIO programs, Upward Bound, Talent Search and Student Support Services, which emerged from the Economic Opportunity Act of 1964 and the Higher Education Act of 1965, are examples of "compensatory" education because of their intent to support students from economically disadvantaged backgrounds (OPE, 2010).

Given the definitions supplied above, we recognize the merit of arguments presented by advocates who believe these programs are developmental in name only. Though Roueche and Snow (1977) took note of the change in terminology from *remedial* to *developmental* in the 1970s, they pessimistically concluded this change has "rarely reflect[ed] a change in philosophy" (p. 13). Developmental education aims to provide a comprehensive array of services, of which the remediation of skill deficiencies is just one of many. However, the history of coursework assigned to students identified as ill-prepared, as well as the lack of additional resources to supplement instruction is firmly rooted under the *remedial* definition supplied above. This is especially true in programs that identify content skill

mastery as the goal of instruction rather than the acquisition of critical thinking and analytical skills (Callahan & Chumney, 2009).

Despite attempts to change the image of remedial education, this pessimism of yesteryear continues to be borne out today in policies by state legislatures and higher education administrators that view these courses of study as a threat to excellence by lowering postsecondary standards, and thereby question the efficacy of providing remedial and developmental education. It is curious, as Arendale (2005) points out, that while some in higher education have moved towards supplanting “remedial” with “developmental,” and have initiated programs that adhere to a more developmental approach, many state departments of education and federal legislation continue to use the term “remedial.” This suggests that many policymakers may have a limited understanding of the nature of developmental education and its potential role in increasing college attainment rates in their states.

Looking to the Past for Answers Today

The sections that follow discuss the ways policymakers have focused on developmental education as a symptom of larger education system failures, and how empirical research addresses the issues raised by policymakers and the extent to which these factors are shaping the current developmental education debate. Our final section reviews the ways states and institutions are responding to the remedial “problem,” by developing what we term “traditional” or “innovative approaches” that either reinforce past views of the role of developmental education or provide a new vision for how developmental education can help states improve their college attainment rates. We conclude with a discussion on how this analysis can inform the national dialogue on how to meet the challenges of serving students identified as underprepared for postsecondary education.

The history of higher education is replete with anecdote and drama describing the collision of forces surrounding the scope and purpose of postsecondary instruction. The founding of America’s first colleges was driven by a vision to nurture and train the leaders of society who would “spell the difference between civilization and barbarism” (Rudolph, 1990, p. 6). These colleges aimed to preserve cultural norms imported by Cambridge- and Oxford-educated men, develop a learned clergy to uphold the Christian faith, and create an elite ruling class who would bring order to the colonies (Brubacher & Rudy, 1976; Rudolph, 1990). For these reasons, courses in rhetoric, classical scholarship, and biblical studies formed the curriculum of early colonial higher education. According to Brubacher and Rudy, the concentration of elite young men in the colonial colleges was intended for “preserving, not reconstructing” (p. 10) the established order. Failure to do so would mean,

[T]he ruling class would have been subjected to mechanics, cobblers, and tailors, the gentry would have been overwhelmed by lewd fellows of the baser sort, the sewage of Rome, the dregs of an illiterate plebs which judgeth much from emotion, little from truth. (Brubacher and Rudy, p. 10)

In time, this vision was challenged by an alternate vision, one that was firmly grounded in revolutionary rumblings and a growth in religious diversity. The onset of the Revolutionary War and the colonies' break from England hastened a trend toward a more secular curriculum that included subjects in the sciences, including social science, and the arts. Consequently, the role of education shifted from the training of an elite populace to one that resonated greatly with the spirit of democracy. The new optimism that characterized the nation after the Revolutionary War catapulted the development of a distinct American educational system that was funded by taxpayers and welcomed a broader segment of society (Jeynes, 2007). No longer would the colonies rely on England for goods and other needed services; instead they would rely on their own ingenuity and skill to make the fledgling nation much more self-reliant and prosperous.

The spirit of democracy and self-reliance is one that still characterizes America today. In a time of global competition, advanced technology and scarce resources, America is looking to harness the strengths of its citizens to retain its global prominence. The need to improve the educational skill level of U.S. citizens cannot be understated given the dire economic conditions currently crippling the nation. As such, our country's leaders are looking to colleges and universities, from the smallest community colleges to the most elite universities, to provide the education and training that will develop the necessary workforce of the 21st century. In these times of tremendous challenges, the country's postsecondary institutions are being asked to once again assume the mantle of opportunity, open its doors, and ensure that a broad spectrum of the population will receive the education needed for the economic and social survival of the nation.

Yet, the widespread opening of postsecondary doors alone is an insufficient condition for ensuring economic stability and global competitiveness. It would be more accurate to say that public postsecondary settings are being challenged to provide evidence of return on investment. The demand for greater public accountability of postsecondary institutions for improved educational outcomes for all students has become *de rigueur* from policymakers. It is, however, these very demands to improve student outcomes that underscore the tension-filled debate surrounding remedial education. The remediation debate is cast with individuals offering their distinct perspectives on the following questions: *What is the purpose of higher education? Who will benefit? What role do postsecondary institutions assume in preparing the academically underprepared?*

Historical responses to these questions provide a foundation for understanding policy and institutional responses today. One of the primary purposes of higher education is to foster economic development by training a skilled workforce. Whether it was the Morrill Acts' expansion of higher education to include applied studies, the GI Bill's extension of higher education to returning veterans after World War II, or court rulings that opened college and university doors to those who were previously denied entry; increasing college access has been a primary means for growing the nation's economy and increasing the social mobility of its citizens. Most recently, President Obama reiterated the significance of higher education, urging every American to be prepared to take at least one year of postsecondary education to help increase global competitiveness and cooperation

(Obama, 2009). To meet these goals, graduation and educational attainment rates have grown in significance not just as indicators of student success, but of economic success.

Throughout the history of higher education there are many instances where policymakers and higher education leaders have identified remedial and developmental education as a basis for contention (Clowes, 1980) and very often a threat to academic excellence (Brubacher & Rudy, 1976). Despite its presence on American college campuses since the opening of Harvard in 1636, questions concerning the appropriateness of these courses have been asked repeatedly, yielding a debate that often pits student access and postsecondary quality against one another as if they are two mutually exclusive considerations. Consequently, this intricate balancing act between access and excellence is too often construed as a policy “problem” that threatens postsecondary opportunity. Given the current national focus on college completion, it may be time for proponents for and against remedial and developmental education to shift the policy discussion away from the access vs. excellence debate and instead critically examine the costs and benefits of investing in remedial and developmental education programs (Long, 2005).

College Access and the Role of Remedial and Developmental Education

The enrollment needs of the colonial colleges following the Revolutionary War, the growing number of colleges that were established before the Civil War, and the broadening mission of postsecondary education due to the Morrill Acts resulted in an increase in the number of students with varying levels of preparation being accepted into postsecondary education. The practical reality of expanding access to fill the growing number of seats available in postsecondary institutions was also combined with a moral purpose to expand access to knowledge. Lyman Beecher, a Presbyterian clergyman, expressed this sentiment well by observing that the moral purpose of colleges and schools was to:

...break up and diffuse among the people that monopoly of knowledge and mental power which despotic governments accumulate for purposes of arbitrary rule, and bring to the children of the humblest families of the nation a full and fair opportunity...giving thus the nation the select talents and powers of her entire population. (Rudolph, 1990, p. 63)

The broadening access to higher education led to a range of strategies employed by postsecondary education that laid the foundation for our present day model for providing remedial and developmental education on college campuses.

The Conditional Student and Preparatory Programs

The diffusion of knowledge to individuals from humble and prosperous origins, whose academic abilities and preparation varied greatly, often necessitated the inclusion of “preparatory programs” that would bring students to the requisite skill level to succeed in postsecondary settings. These programs were the result of a lack of standardization among secondary schools and private tutoring practices (Cohen, 1998; Rudolph, 1990).

Though compulsory education laws had been in effect in Massachusetts since 1642, most learning took place in the home. Only those with sufficient capital could afford to send their children to the Latin grammar schools and hire private tutors or receive instruction from a local minister (Brubacher & Rudy, 1976; Rudolph, 1990). Consequently, as Casazza and Silverman (1996) indicate, only 36 and 123 students were enrolled in Yale and Harvard, respectively, in 1710. Less than 500 students in total graduated from Harvard in the 17th century.

Moreover, the colleges themselves had little consensus as to what constituted adequate preparation for college or the subject matter students should master prior to admission. At one point Columbia required both physics and chemistry while Princeton required none. Though Latin was a common entrance requirement, there was little agreement as to which texts, verses, or authors the students should have been exposed (Brubacher & Rudy, 1976). Consequently, as Brubacher and Rudy conclude, “[I]n part the failure was due to excessive variety of requirements. Further, the colleges themselves were often at fault because of the discrepancy between the requirements they announced and the ones they actually enforced” (p. 244). The lax enforcement of entrance requirements was in many cases directly tied to a college’s survival. In a time when nearly 700 colleges were founded and failed before the Civil War (Rudolph, 1990), colleges were dependent on students seeking a collegiate education – irrespective of preparation (Cohen, 1998).

Inconsistent actions and practices by the colleges and existing K-12 systems yielded the admission of “conditional” students who were very often the norm on college campus, requiring some form of “preparatory” or “remedial” instruction. For example, Harvard found more than half of its freshmen students needed tutoring in Latin to improve their verbal fluency and written competency (Boylan & White, 1987) to succeed at the postsecondary level. By the late 19th century, Harvard continued to admit half of its incoming students as conditional admits (Casazza, 1999). Vassar’s president lamented a student body whose “range of student achievement extends to a point lower than any scale could measure” (Brier, 1984 in Casazza & Silverman, 1996, p. 8).

To “bridge the gap” between “conditional” students and postsecondary expectations, “preparatory programs” or “preparatory departments” were institutionalized on many college campuses (Casazza & Silverman, 1996, p. 10). Preparatory departments, viewed as secondary schools within postsecondary settings, provided some level of “preparation” to entering college students who lacked basic competence in the subject areas, including reading, writing, and arithmetic (Boylan & White, 1987). Students enrolled in preparatory departments often took six years to complete their studies. Whereas in some cases these programs were housed directly on the college campus, other institutions developed relationships between feeder schools to provide the preparatory work, thus freeing the university from directly providing this level of instruction (Arendale, n.d.b; Boyer, 1987).

The University of Wisconsin (UW) is credited with forming the first formal preparatory program in postsecondary education. Established in 1849, the Department of Preparatory Studies instructed students in study skills and provided remedial courses in reading,

writing, and math (Arendale, n.d.a). In 1865, of the 331 students admitted to the University of Wisconsin, only 41 students were enrolled in credit granting courses (Shedd as cited in Casazza & Silverman, 1996). The UW program served as a model for other programs across the country and by the end of the 19th century, nearly 40% of all first-year students in the nation were enrolled in remedial courses (Ignash, 1997) and approximately 80% of postsecondary institutions had preparatory departments. These numbers do not differ greatly from today, where approximately 30% of first-year students enroll in remedial courses in 76% of postsecondary institutions (NCES, 2003).

Postsecondary expansion into the western states further necessitated the inclusion of preparatory programs. Between 1862 and 1890, the federally supported Morrill Acts expanded the reach of higher education, ensuring the teaching of agriculture and mechanical arts as well as barring the funding for states where racial discrimination persisted (Casazza & Silverman, 1996). The less-selective requirements for admissions led to a student population ill equipped to meet the rigors of higher education. As such, 80% of postsecondary institutions had preparatory programs on their campuses in 1889 (Canfield as cited in Arendale, n.d.b). Early into the 20th century, 315 campuses were reported to still have preparatory departments on their campuses (Brubacher & Rudy, 1976).

Arendale (n.d.b) proposes that preparatory schools served other functions in addition to their primary purpose of “preparing” students for college-level work. First, they enrolled students who could afford to pay the tuition and therefore could supplement the financial support provided by federal and state governments. Second, preparatory programs served as “surrogates” to the secondary schools that were slowly developing, providing a model for instruction for this growing sector in education. Third, the changing requirements for college admissions and graduation made it too hard for the developing secondary schools to keep pace with the new demands. Finally, exposure to and greater reliance on print resources, contrary to the almost-exclusive use of lecture and recitation of the past, heightened the need for these departments.

Post Civil War America and Access for “New Americans”

Urbanization, industrialization, increased immigration and the emancipation of African Americans from slavery characterized post-Civil War America (Jeynes, 2007). The greater concentration of families in urban areas facilitated the growth of schools and the realization that college attendance was possible. Industrialization changed the apprenticeship of the past, introducing new occupations requiring more complex training and skill development, which “fostered a greater exigency for education” (p. 184). The infusion of 25 million immigrants between 1881 and 1925 underscored the importance of education to address language differences, poor schooling backgrounds, and the assimilation of the numerous cultures into one unified “American culture.” Finally, the emancipation of slaves forced the country to face the effects of involuntary servitude and deliberate illiteracy imposed on three million people.

Greater federal involvement in higher education in the 19th century foreshadows present

federal action. The Morrill Acts of 1862 and 1890 not only served to broaden access to postsecondary instruction, but they served to introduce a more vocational orientation to the purpose of higher education (Urban & Wagoner, Jr. 2009). That is, students were able to take courses in agriculture, home economics, engineering, and other scientific fields. Moreover, business leaders further challenged the traditional scope of higher education, demanding a curriculum that emphasized practical knowledge over a “classical and literary emphasis” (Butts and Cremin, 1953 in Casazza & Silverman, 1996, p. 14). Similarly today, business leaders look to higher education to provide the skilled workforce of tomorrow but are often left to wonder at the worth of a college education that does not adequately prepare students. The Alliance for Excellent Education (2006), in delineating the costs associated with remedial and developmental education, state, “There are additional costs, such as the cost for employers who either provide training programs to teach basic skills to employees or must purchase technology which substitutes for the lack of basic skills among employees...” (p. 4).

These challenges, combined with the pre-existing challenges noted in the previous sections, were addressed through the use of remedial instruction. In regards to the freed slaves, missionaries from the Baptist Home Missionary Society of New York and the American Missionary Society of New York founded colleges devoted to the higher education of Blacks beginning in 1864. Realizing that students had little to no knowledge of letters and numbers, primary departments within these colleges were put in place to introduce reading, writing, and arithmetic. Gradually, additional subjects were introduced such as agricultural and industrial training. Over time, a formal academic course of study modeled after the traditional New England colleges was introduced and offered to students sufficiently versed in the secondary materials. “The dominant policy of the time,” as Brubacher and Rudy (1976) remarked, “seems to have been one of groping [sic], testing, and experimenting, rather than stubbornly seeking to impose an artificial stereotype on unprepared students” (p. 75). In the 30 years after the conclusion of the Civil War, more than 1,100 Blacks had graduated from Historically Black Colleges and Universities (HBCUs), which were largely established after the passage of the Second Morrill Act in 1890 (Boylan & White, 1987; Brubacher & Rudy, 1976).

Access in the 20th Century

At the start of the 20th century, courses in remedial reading and study skills were fairly common as 350 colleges offered courses entitled “How to Study” (Casazza & Silverman, 1996). A 1929 survey identified nearly 25% of postsecondary institutions who offered remedial instruction (Parr, 1930 in Casazza & Silverman, 1996) and others who mandated enrollment in such courses (e.g., Ohio State University). The University of Buffalo initiated a pre-college program in 1926 where students who performed poorly in high school but planned to enroll at the university were asked to take part in a three-week summer study course. Some of these students were either “debarred” from admission as a result of their performance in the study course, while others identified as “doubtful” were given a reduced course load during the academic school year (Eckert & Jones, 1935 in Casazza & Silverman, 1996).

Addressing the gap between secondary preparation and postsecondary expectations continued to remain a concern despite the presence of remedial programs on four-year college campuses. The demarcation of higher education was widely discussed at the conclusion of the 19th century and early into the 20th, with prominent educators such as college presidents Charles Eliot of Harvard and Nicholas Butler of Columbia making recommendations to reduce the number of years spent in college from four to three and move algebra from the college to the high school classroom (Brubacher & Rudy, 1976). It is during this period in time that the development and “mushrooming” (Casazza & Silverman, 1996) of the junior college came about. In its quest to become “true research and professional development centers” (Cohen, 1998, p. 110), university administrators sought to drop the first two years of instruction, which often consisted of remedial instruction, and place it within another setting.

A further push for the development of junior colleges came from William Rainey Harper, president of the University of Chicago, who believed that the “weaker” colleges should become “junior colleges” and offer courses that were “collegiate (preparatory)” in scope. This idea had been proposed earlier by other educational leaders who worried that the first two years of college were secondary in nature, leading such institutions as the University of Illinois, the University of Michigan and Stanford to consider dropping the first two years of college on the “theory that the university should not be engaged in secondary instruction” (Brubacher & Rudy, 1976, p. 254). The junior college would thus attract more students to postsecondary education, to include those students who had not previously considered a college education. The short time span of the college may likewise make it easier for students to “respectfully terminate” their college attendance after only two years of study. And finally, as President Harper rationalized, graduate and professional schools would be supportive of these “terminal facilities” for they would be the recipients of a more selective student body prepared for advanced work.

Though these aims are given a positive connotation, Casazza and Silverman (1996) observe that junior colleges often provided a “sorting” function in education, counseling students away from further education after two years. Nonetheless, these colleges thrived, providing opportunity to students previously denied access to higher education. The exponential growth of this innovation was such that by 1930, over 70,000 students were enrolled in 450 junior colleges instituted in all but five states across the country (Cohen, 1998).

The first World War, the GI Bill, the launch of Sputnik and the Civil Rights Act of 1964 all served to promote the notion that education is a national imperative to ensure national security, economic stability, and global competitiveness. But even more importantly, these events and subsequent state and federal actions ushered in a belief system that all individuals, regardless of background, age, or station in life could access postsecondary education. The GI Bill provided educational and vocational opportunities to returning servicemen, of which nearly eight million participated in some form of postsecondary education or training program. The impact of the GI Bill can be seen in the numbers of enrolled students immediately before and after the war. Prior to the war, 1.5 million students were enrolled in postsecondary studies; in 1947, 1.1 million returning

servicemen alone were enrolled (Geiger, 2005). Of those that took advantage of the GI Bill, as many as two-thirds did not have the requisite study skills to succeed in a postsecondary environment (Maxwell, 1979 in Clowes, 1992). As a result of the influx of these new students, guidance centers, reading and study-skill programs, as well as tutoring services were instituted and made available on college campuses (Maxwell, 1979 in Casazza & Silverman, 1996).

The historical record shows the extent to which remedial and developmental education programs were a necessity on college campuses. Whether it was due to inconsistent pre-college requirements in the 18th century, the need to enroll as many students as possible to guarantee the survival of emerging institutions in the 19th century, or fear over national security and global competitiveness in the 20th century, developmental education has been employed to attain those goals. However, as the next section illustrates, the inclusion of remedial education programs on college campuses seemingly cast a darkening shadow over postsecondary settings that obscured its function as an institution of “higher learning.”

Remedial Education and the Debate over the Purpose of Higher Education

Testimony from an angry and embarrassed constituency over the need for remedial instruction can be found throughout the annals of higher education. From the late 1800s to the present day, remedial/developmental education has been described as an “embarrassment” (Brier, 1984, p. 3) to colleges and universities that offer such courses. The *Yale Report of 1828*, a document intended to reaffirm the role of postsecondary institutions to provide a classical and not a practical education, intimated that not all individuals would have the intellectual acumen to engage in this kind of training. Indeed, the future president of the University of Michigan stated, “We have cheapened education so as to place it within the reach of everyone” (Rudolph, 1990, p. 63). In 1830, Ezra Cornell, founder of Cornell University, inquired as to why faculty did not teach students “what they didn’t know,” to which the faculty responded, “If Cornell wanted the faculty to teach spelling, he should have founded a primary school and not a university” (Brier 1984, p. 3).

The rise of both the common schools and public high schools, however, led to greater numbers of students with aspirations for college attendance. The first public high school opened in Boston in 1821 and the *Kalamazoo* decision by the Supreme Court in 1874 upheld the use of taxes to support public education (Jeynes, 2007). By 1890, over 2,500 high schools could be found across the United States. Despite their proliferation, public secondary schools were still not specifically organized to prepare students for college; rather, as Cohen (1998) records, “Their net effect was to elevate the desire for more schooling and to hold the younger students away from college so that the median age of entrants increased” (p. 65). Thus, postsecondary systems eager to rid themselves of their preparatory programs could not do so until matters at the secondary level could be resolved.

The Committee of Ten led by Charles Eliot, president of Harvard, convened in 1892 to standardize the high school curriculum and bring an end to questions concerning the role of secondary education within American education at large. Their recommendations made clear the divide between secondary and postsecondary instruction, lending a more college-preparatory orientation to the high school curriculum. The recommendations called for higher expectations of all students, who should be required to take four years of Latin, history, English literature and composition, and German or French. In addition, three years of Greek, Algebra and geometry, and one year of physics, chemistry, botany, geography, astronomy and meteorology, and anatomy and physiology were recommended requirements.

While these recommendations should have brought an end to questions of preparation, a great deal of criticism was levied against the Committee (comprised primarily of university presidents) for ignoring the more comprehensive responsibility of high schools to educate the majority of students who would not necessarily continue on to a postsecondary education (Brubacher & Rudy, 1976). Postsecondary institutions, many of which had begun to eliminate their preparatory programs, were thus forced to reinstate these programs as few secondary school students actually took the college preparatory curriculum recommended by the Committee of Ten. Moreover, postsecondary institutions were still faced with the dilemma of maintaining their enrollments, and as such, continued to enroll students who were not well prepared for college-level work. To some extent, colleges in the northeast curbed this need by admitting only those students who attended private secondary schools with college preparatory curricula. Still, some of the country's most illustrious institutions such as Columbia, Princeton, and Yale were forced to include remedial and developmental education courses in their curriculum as more than half of its incoming first-year classes did not meet entrance requirements (Casazza & Silverman, 1996).

The junior colleges therefore provided the opportunity for greater numbers of students to pursue postsecondary studies, which allowed many colleges and universities to accomplish their aim to serve a select student body capable of doing advanced work (Brubacher & Rudy, 1976; Geiger, 2005). Yet, the junior colleges, from their inception, did not see themselves as "less-than" institutions, but rather saw themselves to be on a corollary tract with four-year colleges and universities, where their primary function was transfer (McGrath & Spear, 1991). In fact, in a study by Knoell and Medsker (1965 in McGrath & Spear, 1991), the researchers found that college graduation rates of junior college transfers were equal to those of their four-year counterparts. Their research suggests, as McGrath and Spear point out, "the community college's mission of access could be realized without danger of eroding academic standards" (p. 38).

Over time, the function of the junior college evolved to include a multi-prong mission to deliver a number of new programs such as vocational education and other terminal credentials in order to serve an increasingly diverse student population (Cohen & Brawer, 2003; Urban & Wagoner, Jr., 2009). The expanded mission of the community colleges led them to work through challenges they were initially unequipped to address. This is especially true with the advent of "underprepared" students arriving on campuses across

the country after passage of open door policies of the 1960s. According to Cohen and Brawer (2003):

The community colleges reached out to attract those who were not being served by traditional higher education: those who could not afford tuition; who could not take the time to attend a college full time; whose ethnic background had constrained them from participating; who had inadequate preparation in the lower schools; whose educational progress had been interrupted by some temporary condition; who had become obsolete in their jobs or had never been trained to work at any job; who were confined in prisons, physically disabled, or otherwise unable to attend classes on campus; or who were faced with a need to fill increased leisure time meaningfully. (pp. 28-29)

Moreover, the urging by the Carnegie Commission on Higher Education for junior colleges to open its doors to all graduating high school students and other qualified individuals meant that their mission and offerings changed substantially (Brubacher & Rudy, 1976). Consequently, the junior colleges “bore the brunt” (Cohen & Brawer, 2003, p. 260) of inadequate preparation as the residual effect of “open door” and “open admissions” policies of the 1960s led the more prestigious universities to enroll a larger share of academically prepared students (Geiger, 2005). In trying to “be all things to all students” (Lynes, 1966, p. 59-60), the evolving community colleges were confronted with harsh criticism as to their capacity to deliver effective programs (Berg & Axtell, 1963; Blocker et al, 1965; Kendrick & Thomas, 1970; Ludwig & Gold, 1969; Roueche, 1968; Schenz, 1963; Snyder & Blocker, 1970) and their ability to deliver on its mission (Jennings, 1970).

An example of how community colleges were unprepared to serve the influx of students needing remedial instruction was revealed in early studies of remedial programs in community colleges that found them to be housed in traditional departments that offered little more than “watered down” curricula by faculty who had no training, experience, or commitment to remedial instruction (Roueche, 1968; 1973). Roueche’s (1968) review of the research concerning open-door policies and underprepared students revealed that 55 percent of remedial instructors in California had less than two years experience (see Bossone, 1966) which confirmed other research indicating that the least experienced instructors were likely to be found in remedial settings (see Kipp, 1966). Instructors teaching in remedial courses interviewed by the American Association of Junior Colleges (1967) felt that graduate school courses must be offered to help potential instructors learn effective teaching methods in open-door institutions. Though changes over time to remedial instruction could be seen, such as a more developmental approach to learning that “views the current education process as transformational, taking the student from one state and developing his or her abilities into those of a more capable, self-confident, and resourceful learner” (Center for Student Success, 2007, p. 9), there remains a lack of research evidence documenting the effectiveness of the community college to adequately serve the needs of the underprepared student (Callahan and Chumney, 2009).

Undoubtedly, the perceptions of remedial education, from the student to the deliverer of programs, hold implications for the ways the general public and elected or appointed officials view the effectiveness and efficiency of developmental education. Recent policy debates raise concerns about increasing numbers of underprepared students. The Alliance for Excellent Education (2009) questions the high costs associated with “paying double” for students to learn content that should have been learned in high school, saying,

Individual states, and the nation as a whole, are not only paying to academically remediate thousands of young adults, but they are also facing future financial loss because students who need remediation are more likely to leave college without a degree. (p. 3)

Strong American Schools (2008) likewise questions the high cost of remediation and extends their analysis to the “hidden costs” of remediation placement to students, notably their efficacy toward their academic preparation. Of the students polled for the report, 37% indicated feelings of frustration after discovering they were deemed unprepared for college-level work.

Still others argue that the current percentage of students enrolled in remedial courses is far too high. It is estimated that 40% of traditional college students enroll in remedial courses (Attewell, Lavin, Domina & Levey, 2006) in 76% of postsecondary institutions (NCES, 2003). Phipps (1998) and Merisotis and Phipps (2000) argue these figures may be higher as some institutions, fearing the negative stigma of remedial education, would not report offering such courses. Although studies in recent years (i.e., Bettinger & Long, 2008; Callahan & Chumney, 2009) have made greater strides to measure the scope and impact of remedial and developmental education, Kozeracki (2002) concludes, “Advocates of developmental education have not yet done enough to generate reliable regional or national data about the value of offering developmental education” (p. 95). Without such reliable data, reforms enacted will have widespread, potentially negative effects on systems and students without fully understanding the depth of the problem.

Conceptualizing the Policy Problem

As can be seen in the historical record, remedial and developmental education is wedged between two ideological stances. On the one hand is the adherence to democratic principles of access and opportunity, while on the other is the loyalty to high academic standards as a measure of quality. Accordingly, remedial and developmental education has been viewed as a policy problem for policymakers whose concerns have significantly impacted public perception and its role in higher education. The “problem” as it was defined in yesteryears does not differ much from the “problem” of today.

In the past, remedial education played a central role in the early development of American postsecondary education. Beginning with Harvard’s founding, remedial education filled gaps the emerging country’s system of education had not yet addressed, or even encountered. The lack of standardization across primary and secondary settings,

the lack of articulation between secondary and postsecondary institutions, and enrollment concerns are just some of the issues that America's postsecondary settings had to address before it could fully respond to the question of remedial education.

Though there is evidence of unease and a desire to limit remedial education in postsecondary settings, the record ultimately shows that institutions *needed* these programs to provide access and maintain enrollments (Brubacher & Rudy, 1976). Today, state policymakers continue to deliberate over common core standards, college readiness and alignment, and the need to improve educational outcomes to maintain economic competitiveness. Because these issues have not yet been resolved, remedial education remains important to the success of higher education as well as that of students. With postsecondary systems more fully developed and an increased need for an educated workforce, other policy questions have emerged while attempting to resolve these long-term dilemmas. Critical policy questions include: How do we pay for remedial and developmental services? In what type of institutions should remedial and developmental education be offered? How can we measure its effectiveness (Kozeracki, 2002; Long, 2005)? The way today's higher education systems respond to these policy questions are likely to help determine whether we will reach President Obama's goal for our nation to regain the lead in educational attainment.

How much does remedial education cost?

In the last 20-30 years, a number of policy debates have questioned whether developmental education is a drain on resources, or a “best buy” in higher education. National estimates about the cost for these programs range from one to nearly three billion dollars (Breneman & Haarlow, 1998; Strong American Schools, 2008). Existing research on the cost of developmental education has inadequately responded to this debate, due in part to studies that primarily focus on remedial and developmental education in individual states (i.e., Greene, 2000), disagreements about how to measure cost, and data that are no longer current. Although scholars such as Breneman and Haarlow conducted a survey of the states, and Strong American Schools relied on institutional data originally collected from the Integrated Postsecondary Education Data Survey (IPEDS) to assess costs associated with developmental programming, the data gathered are unreliable as states and institutions measure costs differently. In the Breneman and Haarlow study, for example, some states included funding allocated for remedial instruction, but failed to include actual expenditures. Further, some states included the “true” costs of offering developmental services (including overhead) while others only included the cost of instruction.

The Strong American Schools (2008) analysis used higher education expenditures reported in IPEDS to determine the cost per student in public two- and four-year institutions. They estimated that two-year colleges spent between \$1,600 and \$2,000 and four-year institutions spent between \$2,000 and \$2,500 on remedial education. Cost estimates included direct and indirect instructional costs. Assuming students took at least two remedial courses, the report concluded that \$2.89 billion were spent in total educational costs for remedial courses.

The Alliance for Excellent Education (2006) took a somewhat different approach to estimating the cost of remediation by focusing on savings, rather than expenses. The analysis was based on combined estimates of direct and indirect costs for remedial instruction and additional earnings that would be realized if remediation was reduced. The analysis suggests the U.S. would save more than \$1.4 billion a year if fewer students enrolled in remedial education courses. Additionally, it was estimated that the nation would benefit from increased revenue of approximately \$2.3 billion annually, earned from wages of college graduates whose contributions would otherwise be delayed by taking remedial courses specifically in reading. The Alliance thus found that reducing remedial education in public community colleges alone could save more than \$3.7 billion a year.

Dowd and Ventimiglia (2008), however, argued aggregated cost estimates are problematic because they do not account for various levels of required remediation. Their study focused on one program specifically designed to improve students’ chances of passing a required proficiency exam. Specifically, this institutional study estimated the cost of a community college developmental education program and related it to student success as a measure of cost-effectiveness. The researchers found that the cost to successfully provide services to students with the most academic needs (in this case those

who repeatedly failed the placement exam) is over two-and-a-half times as expensive as non-remedial community college courses and approximately the same as the cost of four-year college courses. However, the real contribution of this study extends beyond cost estimates as it highlights the importance of disaggregating data to understand costs associated with different types and levels of remedial and developmental education.

Phipps (1998) argues that costs for remedial and developmental education may indeed be more than two billion dollars but may be a “modest” price to pay when the option is between educating students or simply allowing them to drop out (or never enroll). In his case study of the state of Arkansas, he found that the cost was “comparable to or lower than many other academic programs” (p. vii). Merisotis and Phipps (2000) thus suggest that policymakers should consider the financial gains that institutions may obtain when students successfully complete remedial programs and continue their education. They argue that such successes are “beneficial for the institutional bottom line since it enhances revenue that can partially offset costs associated with providing remediation” (p. 78). Few studies, however, make this connection, leaving policymakers with little to reflect upon when making decisions around cost-effectiveness.

Despite the lack of conclusive data on costs, many policymakers and higher education leaders nonetheless contend that because of the perceived high cost of remediation, students would be well served to take remedial courses at two-year institutions. In addition to lower tuition costs to the student, educational costs of public community colleges are lower than public and private four-year colleges. In 2005-06, for example, educational costs were approximately \$8,500 per full-time equivalent student at public two-year colleges, compared to more than \$10,000 at public four-year colleges (College Board, 2008). A simple comparison of tuition prices and instructional costs, however, does not tell the whole story. Selecting a college due to its perceived lower cost may not be the most effective strategy in terms of student success (Dowd & Ventimiglia, 2008). Moreover, beginning postsecondary education with remedial courses at two-year colleges may harbor some hidden costs for the student. A recent study of remedial education students in California’s community colleges who transferred to a four-year college demonstrates why this is the case.

Melguizo, Hagedorn and Cypers (2008) suggest students who take remedial and developmental education courses at the community college and transfer to a four-year college ultimately pay more than non-remedial students in terms of tuition and time to degree. Part of the reason is that remedial students at the community college spend more time and money taking non-transferable credits. So while students in the study had been enrolled in the community college for nearly five years, those who transferred to a four-year college did so with only a year’s worth of college credit. Consequently, because students with limited financial resources are often encouraged by parents, high school guidance counselors, and others to attend a community college to save money, Melguizo et al. argue that transfer costs in California may be too high for students required to take remedial or developmental courses due to the substantial amount of time they devote to these often nontransferable courses. Furthermore, students needing the lowest levels of remediation paid nearly 44% more in tuition and fees than students who directly enrolled

in college-level courses. While this study was limited to California, recent research by the Education Trust (2010) and the Delta Project (Wellman, et al., 2009) show that despite low tuition, community colleges may ultimately cost students and taxpayers more than public four-year institutions due to low degree (and certificate) completion rates for students who begin at a two-year college. These findings raise important questions about effectiveness, efficiency, and equity.

Still, critics of college remediation contend that remedial and developmental education courses do not belong in postsecondary institutions, no matter the cost. The concern by some is that college remediation in public colleges and universities ostensibly requires taxpayers to pay double for academic skills that should have been learned in high school (Alliance for Excellent Education, 2006). Concerns about costs have led some states to consider limiting remedial education to community colleges and/or outsourcing it to private companies. Community colleges are often targeted, as the cost of instruction is lower than at four-year colleges. Future research needs to further examine costs to improve understanding of the relationship between cost and effectiveness at both two- and four-year colleges as well as how outsourcing impacts students in terms of cost and degree completion.

Who is responsible for educating the underprepared?

A major focus of President Obama's goals for higher education includes a reliance on community colleges to boost the U.S. economy. At the same time, states and higher education systems have looked to the community colleges to provide remedial instruction as a way to cut costs while improving graduation rates. The City University of New York (CUNY), for example, ended remedial education courses in all four-year institutions and designated its two-year community colleges as the sole provider of such courses (CUNY Board of Trustees, 1998). More recently, Tennessee legislators, like other states before them, passed a state law restricting remedial and developmental education to community colleges. While these are only two examples of states and postsecondary systems that have reconsidered the placement of remedial education, the Education Commission of the States (2010) has developed a policy database that show similar trends across the country.

Implicit in this "redirection" is the belief that community colleges are best equipped to deliver this mode of instruction to underprepared students and that remediation simply does not belong in four-year colleges. Because students who begin at a community college are less likely than those who start at a four-year college to earn a baccalaureate degree (Alfonso, 2006; Bernstein & Eaton, 1994; Dougherty, 1992;), there is some danger in relying on the community college as the sole provider for remedial and developmental education. While completing degrees, baccalaureate or otherwise, is not always a goal to which community college students aspire, many states and institutions continue to use degree completion as a measure of success. A recent policy brief by the American Association of State Colleges and Universities (AASCU) suggests restricting developmental education to the community colleges alone is a potentially ineffective strategy as community colleges are already overburdened with increasing enrollments and limited funding. With remedial education equating to small percentages of higher

education institutional budgets (1-5%), the AASCU argued that states should “weigh the savings attained by [limiting remediation to community colleges] against the costs of ‘decreased tax revenue’ and ‘reduced productivity,’ if students do not complete baccalaureate degrees” (Russell, 2008, p. 5).

Given the community colleges broad mission, open admissions policies, and relatively low cost, many underprepared students begin their college careers at these institutions. Attewell et al. (2006), however, show that two-year colleges are more likely to require remedial or developmental courses than four-year institutions, even after controlling for academic preparation. In other words, students with the same levels of preparedness are more likely to enroll in remediation if they start at a community college than if they begin their academic careers in a four-year institution. This finding has implications for academic progress and degree completion.

Melguizo, et al. (2008) demonstrate why this is an important issue of concern in their study of California community college students who transferred to a four-year college. As mentioned previously, remedial students who transfer from a community college to a four-year college pay more than non-remedial students in time and money. The researchers conclude that while many factors contribute to the reasons students take longer to complete courses, colleges should “reexamine the procedures by which they currently encourage students to complete the [remedial/developmental education] process in a timely fashion” (p. 425) or review policies and methods of instruction to improve understanding of why students are not succeeding in a shorter timeframe. This type of evaluation could be conducted at two- and four-year institutions.

Instructional practices and resources are indeed a concern when considering where remedial education should be located. A recent study by Callahan and Chumney (2009) found the lack of resources in most community colleges might limit remedial students’ success. In their qualitative study of two remedial writing courses — one at a four-year research university and one at a community college — Callahan and Chumney contend that access to resources related to course content, instruction, and out-of-classroom tutoring allowed the four-year college to be more successful in terms of course completion. The researchers attribute the success of the four-year college to the instructor’s emphasis on analytic skill development, instead of grammar; one-to-one tutoring; and an experienced, full-time faculty member. While Callahan and Chumney argue that some community colleges have the resources needed to be effective, most are under resourced leaving the efficacy of remedial education “compromised” (p. 1661).

Given the history of higher education’s efforts to shed itself of remedial programs (Brubacher & Rudy, 1976), there is reason to examine whether the trend to shift remedial education exclusively to community colleges may effectively inoculate four-year colleges and universities from serving the underprepared. In other words, if remedial education is deemed to be specific only to the two-year college, the four-year institutions are taken “off the hook” for educating students who may knock at their doors in need of academic support. Clarifying the responsibility that four-year institutions have toward

underprepared students should be a policy consideration when policymakers deliberate whether to limit developmental education to two-year institutions.

McGrath and Spear (1991), calling on research from the 1960s and 1970s, suggest the growth of community colleges helped to “isolate traditional colleges and universities from the growing numbers of nontraditional students” (p. 46) as broad access did not equate to broad opportunities for students due to the fact that many community college students did not continue pursuit of a four-year degree. McGrath and Spear continue this argument as they quote Jencks and Riesman (1968) who described community colleges as “a safety valve releasing pressures that might otherwise disrupt the dominant system. They contain these pressures and allow the universities to go their own way without having the full consequences of excluding the dull-witted or uninterested majority” (p. 491-492).

More recently, the Education Trust (2010) argued community colleges play an important role in increasing educational attainment; however, all colleges, in particular four-year colleges, must work towards reversing educational disparities that continue to face the U.S. Thus, with more high school graduates aspiring to a college education, it seems that if the nation is to meet its educational attainment goals, both two- and four-year institutions must shoulder the responsibility of educating the underprepared.

How effective is remedial education?

As more states push remediation exclusively into community colleges (Tierney & Garcia, 2008), other states have recognized that regardless of where remedial education is delivered, the bigger issue is its overall effectiveness in increasing college success. Policy debates centered on educational outcomes of remedial and developmental education have generally defined effectiveness as degree completion and educational attainment. Critics of remedial and developmental education often cite low graduation rates of those who took remediation to make the case that enrollment in remedial courses prevents students from earning a college degree. Recent studies, however, clearly show that simply looking at the completion rate of those who require remedial education is too simplistic of a view to a complex issue. Bettinger and Long (2009) for example found differences in educational outcomes of those who take remediation and those who do not often disappear when academic and social backgrounds are taken into account. Research on the impact that remedial and developmental education has on educational outcomes thus requires a closer examination to better understand its effectiveness.

Some researchers suggest, for example, that enrollment in developmental education delays time to degree completion (Attewell, et al., 2006; McCormick & Horn, 1996) and that these students are less likely to graduate than non-remedial students (Adelman, 1999/2006). Adelman (2006) found that 49% of students who took at least one remedial course graduated within eight years, compared to nearly 70% of students who did not take any remedial courses. As previously stated, policy debates on the effectiveness of remedial education often end there. Adelman (1999), however, extended the argument

further and showed that the low graduation rates are more likely to be a function of inadequate high school preparation rather than remedial coursework itself.

In a longitudinal study of remediation in community colleges, Bettinger and Long (2005a) found that community college freshman in Ohio earned fewer credits and were less likely to transfer to a four-year college or earn a degree. Once they controlled for academic background, however, the researchers found remedial students completed degrees or transferred to a four-year college at the same or better rate than students who did not take remedial courses. In a similar study of Ohio two- and four-year college students², Bettinger and Long (2009) focused on the marginal remedial student, those students whose placement in remedial courses depended on the institution of attendance. In this study, Bettinger and Long found that when controlling for academic preparation, college remediation had a positive effect on persistence and degree completion.

Because the Bettinger and Long (2005a/2009) studies were limited to first-time freshman of traditional age (18-20 years old), the impact of developmental education course-taking on adult learners or those students who attend college part-time is unclear. Additional research, however, shows that adult learners in community colleges are not as negatively affected by taking remedial courses as younger students in terms of degree completion (Calcagno, Costa, Bailey, & Jenkins, 2006). The researchers suggest that the differences between younger and older students may be due to adult students needing to only refresh their academic skills after being out of school for a number of years. As more adult students seek postsecondary educational opportunities, there will be a growing need for more research on their experiences with college remediation.

Like Bettinger and Long (2009), Attewell et al. (2006) ran a series of regression analyses to determine the impact of remedial course-taking on graduation rates, time to degree, and other outcomes. This study, using logistic and propensity models to control for academic and family background, found that remedial course enrollment did not reduce a community college student's likelihood of earning an associate or higher degree. Low SES, poor academic preparation in high school, and being African American were instead found to be predictors of low graduation rates. When Attewell et al. looked at four-year colleges, however, remedial students were only 6-7% less likely to earn a baccalaureate degree than non-remedial students. Nonetheless, taking a remedial course did not prevent students from earning a baccalaureate degree, as more than 50% of remedial course-takers did complete the BA within eight years of entering college.

Still, critics of remediation maintain that too many students are taking too many remedial and developmental education courses (Attewell, et. al, 2006). First, as we have noted earlier in the review, the percentage of students enrolled in remedial courses today does not significantly differ from remedial course taking 100 years ago (Ignash, 1997; NCES, 2003). Second, Attewell et al (2006) found that few students (14% at community colleges and only 5% at non-selective four-year colleges) take more than three remedial courses. Moreover, in the case of the community college, students' chances of graduating are not

² Two-year college students were included in the sample only if they indicated intent to transfer on their community college application.

reduced by taking multiple remedial courses. Again, by controlling for academic preparation in high schools, Attewell et al. attributed low graduation rates for remedial students to academic background rather than to enrollment in remediation itself. Students taking multiple remediation courses in four-year colleges, in contrast, had a lower likelihood of graduating. Yet, approximately 33% of the few students who took several remedial courses in a four-year college nonetheless graduated within eight years.

While transfer rates and degree completion are important educational outcomes, it is equally important to take a step or two back to consider the extent to which students complete college-level courses. Bailey et al.'s (2009) work revealed that students in community colleges who are placed in remedial education often fail to complete remedial course sequences, in part because they never enroll in the assigned courses or because they skip courses within a prescribed course sequence. Indeed, the study finds that while many students in community colleges are referred to remedial education, less than one-third of the study participants actually enrolled in the appropriate courses. Similarly, many students who complete developmental sequences never enroll in the college level, despite the positive probability of completing these gatekeeper courses.

While recent policy decisions seem to maintain that remedial and developmental education seals the fate of many students, the empirical evidence related to the effectiveness of remedial and developmental education is not that simple. A great deal of students' success depends on their academic preparedness, what subjects they take, and whether they enroll in referred or assigned courses. The evidence presented here thus indicates the need for more research related to the effectiveness of college remediation, as current research does not provide a conclusive prediction related to remedial and developmental education and educational outcomes. As Bailey (2009) explained, "There is in fact no strong consensus about how to carry out developmental education most effectively" (p. 2). As a result we are left with myriad approaches in various contexts in hopes of resolving the issue.

Solutions to the Challenge of Developmental Education

While a number of policy strategies and initiatives have been adopted to improve college preparation for high school students to reduce remediation rates on college campuses, there is a growing movement to broaden remediation reform efforts beyond the traditional K-12 to postsecondary curricular alignment focus. Innovative programs and policies are being implemented throughout the country to improve college access in a number of ways for underprepared students. This section explores both traditional alignment approaches and innovative programming being developed at various segments of the education pipeline.

Alignment of postsecondary education with K-12 institutions and systems

Researchers who study remedial education needs and offerings suggest that one of the most important strategies for decreasing the need for postsecondary remediation is to develop better relationships between K-12 and college and universities. As such, an

increase in articulation through K-16 and P-20 movements has been gradually more prominent in the last two decades (Merisotis & Phipps, 2000).

As Crowe (1998) argued:

In a peculiar but useful way, remediation is viewed in many states as a leading indicator of the health and near-term direction of state education systems. It measures the ability of system components to work together and produce students fully prepared for the workplace or for postsecondary education. It also taps the system's capacity to function as a system. (p. 14)

Scholarship that engages the debate about the need to align K-12 and postsecondary education, particularly in terms of improving developmental education, is not a recent phenomenon. For example, in the mid-20th century it was reported that the University of Illinois sought to eliminate a first-year remedial writing course. In preparation for this curricular decision, the university launched a public relations campaign in the local area to specify college-level standards and expectations, and create a system by which to improve the articulation between high school and postsecondary coursework (Wilson, 1961).

Today, though alignment debates are plentiful, only 11 states have actually aligned their secondary school assessments with postsecondary institutional offerings (Brown & Niemi, 2007; *Education Week*, 2007). An earlier study found that 30 states had developed P-16 initiatives between 1995 and 2005 (Education Commission of the States, 2006), which included: legislation, executive orders, voluntary associations among individuals representing different educational levels, aligned curricula and high school graduation requirements that meet college readiness standards, and dedicated staff and budgets for these activities.

Alignment and articulation are not the only ways in which K-12 and collegiate institutions can support better student success. Kirst (2008) suggests that, in addition to policy efforts, teachers and educators must participate in classroom activities that strengthen the pipeline between secondary and postsecondary levels. One such initiative discussed in the literature was a collaborative project that joined educators from The Ohio State University and local high schools to conduct joint research on language arts alignment. One facet of this work included both secondary and postsecondary instructor feedback on individual student writing assignments such that high school students could compare how their work might be evaluated differently at the high school and college levels (Acker & Halasek, 2008).

In addition to state and system groups, external agencies, such as the National Science Foundation, are getting involved in the establishment and support of K-12 and postsecondary alignment projects (Clifford & Millar, 2007). Another organization, Achieve, was created in the mid-1990s to support the enhancement of academic standards and graduation rates at the secondary level. Achieve launched the American Diploma Project Network that partners with 35 states that educate approximately 85% of all public

K-12 students (Achieve, 2009). The purpose of this project is to ensure that all secondary school graduates are prepared to enter college or begin their careers. Achieve's recent report, *Closing the Expectations Gap* (2009), noted that 49 states currently have the capacity to, or are close to, longitudinally tracking students in their respective states from kindergarten through college graduation. These databases will surely provide needed data for policymakers and educators in their decision-making as long-term effects can be measured by particular curricula, schools, and districts (Achieve and the American Diploma Project, 2009).

While a great deal of attention has been paid to aligning K-12 and higher education, Crowe (1998) cautions policymakers and higher education leaders that alignment is not the only solution. He concluded that initiatives that positively impact remedial and developmental education require strong leadership, quality data systems, and a commitment to real and substantive change. Some suggest the distinction between secondary and postsecondary education be much less distinct. Scholars argue that there should be more flexibility for high school students to take college courses while enrolled in secondary school (Education Trust, 1999; Hughes, 2010).

Assessing and Placing Students in Developmental Education

Students are often placed in remedial and developmental education after failing a placement exam in reading, writing, and/or math. Generally, institutions use standardized assessments and then assign cut-off scores that students must achieve to be exempt from remedial courses. Students whose scores fall below a given cut score are recommended or mandatorily placed into some level of remediation. The lower the student score, the more remediation they may require. Scholars suggest that in the absence of clear articulation of college readiness levels by systems and/or institutions, score cut-offs on these exams become the de facto standards of proficiency (Brown & Niemi, 2007). Yet the literature reports high variability in the ways in which colleges and universities identify academic proficiencies (or deficiencies) in advance of postsecondary matriculation (Horn, McCoy, Campbell, & Brock, 2009; Levin & Calcagno, 2008; Perin, 2006). Additionally, there is concern that correlations between performance on these assessments and future postsecondary success are weak (Bailey, 2008).

SAT/ACT exams, self-reporting, high school GPA, high school standardized proficiency exams, Advanced Placement (AP) scores, and transfer course grades from other postsecondary institutions have all been reported as instruments of assessment used for course placement. In addition to these assessments, many institutions require placement exams before students are permitted to enroll in coursework. Some of these assessments include: the Test of Adult Basic Education (TABE); the Adult Basic Learning Examination (ABLE); the Comprehensive Adult Student Assessment Systems (CASAS); the Assessment of Skills for Successful Entry and Transfer (ASSET); and the Computer-adaptive Placement, Assessment, and Support System (COMPASS) exams produced by American College Testing (Grubb and Associates, 1999), though institutions often set their own "cut-off" scores to indicate proficiency. Other colleges create their own exams, including essay tests and other writing assessments (Grubb et al.). While colleges will

often post practice exams, sample test questions, and general guidelines on their institutional websites, placement exam study guidebooks and flashcards can be purchased online and in bookstores, thus generating great revenue for testing services.

Recently, researchers have argued that the use of high-stakes tests such as placement exams is problematic because cut-off scores vary by state, higher education system, and institution (Bettinger & Long, 2005b). This means that the same student may find her/himself eligible to enroll in college-level courses at one institution while being required to first satisfy remedial course requirements at another. An example of this discrepancy was reported in Ohio, where Bettinger and Long noted a difference of three points for the ACT and 170 points for the SAT scores that were being used to determine remedial education course enrollment. When examining actual placement exams they found variations of 18 points when comparing different institutions' cut-off scores.

These realities make it difficult to adequately study course-taking and performance patterns for remedial education students (Attewell, et al, 2006). It also undermines the process of establishing college readiness standards for students. For example, Soliday (2002) noted there are often political reasons why colleges may decide upon certain cut-off scores on these exams. She suggested that historical evidence of decreasing enrollments in English departments at CUNY coincided with requirements that students fulfill basic writing coursework in order to continue with their postsecondary studies.

Scholars have found that not all postsecondary institutions mandate assessment, nor do all those that do assess students actually mandate remedial coursework for those who test at academically deficient levels (Bailey, 2009; Dougherty & Reid, 2007; Levin & Calcagno, 2008; Oudenhoven, 2002; Perin, 2006; Quirk, 2005; Shults, 2000). There are a number of reasons why institutions that test for deficiencies do not follow through with mandating remediation. These include: limited resources at the college level to accommodate the number of students needing remedial education, an inability to project how many students will need remedial courses in a given semester, and, thus, how many courses/instructors will be needed, and a hesitation to apply too much pressure on students lest they choose to drop out of school (Perin, 2006).

More research needs to be conducted that looks at how student and community demographics correlate with college readiness levels as measured by test scores. It is essential that college readiness be measured for the purpose of supporting student success and not for the facilitation of particular enrollment needs or other institutional interests.

Changing Admissions and Enrollment Policies

Increased reliance on test scores coupled with an increased scrutiny of remedial education, has led many states and university systems to reevaluate their admissions and enrollment policies. Some states (i.e. Tennessee) and higher education systems began to use placement exams to determine eligibility for admission (i.e. CUNY) or continued enrollment (i.e. CSU). In these cases, students who test below the cut score on an initial

placement exam have conditions placed on their admissions to a four-year college and are redirected to the community college to complete their remedial instruction. Because these students see themselves as four-year college students, they often choose not to enroll at the community college, short-circuiting their higher education aspirations (Parker & Bustillos, 2007).

Literature dating back to the 1960s discusses this relocation of remedial coursework from four-year institutions to two-year colleges and how this transition has impacted student populations in higher education (Cox, Canario, & Cypher, 1960; Kitzhaber, 1962). Specifically, scholars have noted that though underprepared students were still plentiful in postsecondary institutions, they simply were less likely to be attending four-year universities (Kitzhaber, 1962). Questions about the types of institutions that should bear the responsibility for providing remedial coursework were widespread in the 1980s and 1990s. A number of states, including Arkansas, Florida, Louisiana, Minnesota, Nebraska, Oklahoma, Tennessee, Virginia, and West Virginia, engaged in a range of activities from attempts to limit remediation altogether to prohibiting remedial offerings at their respective four-year institutions (Ignash, 1997; Merisotis & Phipps, 2000).

As noted above, this relocation of remediation from four-year colleges to their two-year counterparts within a growing number of postsecondary systems has major implications for access. Students who apply to institutions within these systems must demonstrate academic proficiency in order to be eligible for four-year college matriculation. Such academically proficient students, then, have a larger range of options in terms of admission, than academically underprepared students whose institutional options are more limited.

Two of the largest and most well-known public university systems in the U.S. – City University of New York (CUNY) and California State University (CSU) – have effectively transferred remedial coursework and responsibilities to two-year institutional partners since the late 20th century (Parker, 2007), though these systems were not the first, nor the last, to do so. The CUNY movement to relocate remediation, for example, carried with it political and public debates and protests that were rooted in the unnecessary tension between access and excellence. Indeed, the proponents of the relocation asserted that CUNY's four-year colleges were unable to compete for top-performing students and offer well-regarded academic programs because they were burdened by the need to educate academically deficient students (Richardson, 2005).

For CUNY, in particular, due in part to its 30-year open admissions policy, this relocation jarred the public's conception of City University as the "people's university" and led many to revisit the roots of open access in New York City. Since its beginning, CUNY was a highly selective university until 1970 when increased demands for college access led to a change in policy. The new "open admissions" policy provided broad access for the people of the City of New York until the late 1990s when students placed in remediation were no longer eligible for four-year colleges, effectively ending open admissions. Even before the end of open access admissions policies, journalists and researchers debated its effectiveness. James Traub (1994) spent time interviewing faculty

and students at City College, one of CUNY's four-year colleges, and concluded that the institution's low academic standards and excessive remedial coursework jeopardized the legacy and integrity of City's educational value. Conversely, in a work that analyzed data on CUNY students and graduates from the open admissions era, Lavin and Hyllegard (1996) argued that the former admissions policies of the University provided access to social mobility to scores of students, particularly to low-SES and minority students, who might otherwise have been shut out of a middle-class life.

Recently, Attewell and Lavin (2007) built upon this work by surveying former female CUNY students from the 1970s and found that over 70% eventually earned degrees and that this greatly impacted not only their own lives, but also expectations for the educational pursuits of their children. While high school records were reviewed for CUNY's admissions decisions, so were class rank; this status allowed for many underprepared students and students of color to enter four-year colleges in numbers that would be impossible under CUNY's new policies (Attewell and Lavin, 2007). And though these researchers did not specifically seek to investigate outcomes for former remediation students, the study does shed light on the powerful societal implications for mobility and equity that are located in admissions practices.

Bastedo and Gumport (2003) in their study of remediation relocation both at CUNY and in the University of Massachusetts system referred to these organizational maneuvers as mission differentiation, and questioned how efforts at decreasing educational redundancies and enhancing prestige in certain sectors have increased academic stratification and concerns about access, particularly for low-income students and students of color. Similarly, Dowd (2007) argued that community colleges in stratified systems act not only as gateways for aspiring students, but also as gatekeepers because of the realities of transfer barriers, among others, that divert students from earning baccalaureate degrees. Furthermore, discussions of a complete outsourcing of remediation from public postsecondary institutions, such that private companies or colleges would take up the work, have also been noted in the literature (Soliday, 2002).

Scholarship that has assessed the impact of CUNY and CSU policies has found some evidence that the policies resulted in a reduction in access for some groups of students or at the very least a change in their postsecondary pursuits. For example, Parker and Richardson (2005) noted that there were higher proportions of White students in CUNY four-year college first-year cohorts after the remediation shift. Also, new initiatives aimed at providing intensive remedial instruction for students before beginning their first semesters were discontinued. Finally, a number of students who placed into remedial coursework, and, thus, out of four-year institutions, opted to enroll in private colleges, out-of-state institutions, or chose to forego postsecondary education altogether (Parker and Richardson, 2005).

Unlike CUNY, students who require remedial coursework in the CSU system may still enroll in four-year colleges, but are given one year to complete all needed developmental education. While CSU students are provided an opportunity to complete remedial coursework at four-year institutions, CSU's policy has resulted in a number of

disenrollments. Each year during a 10-year period beginning in the late 1990s, CSU has on average disenrolled approximately 11% of its first-year students (Goen-Salter, 2008). In order to avoid this practice and, overall, limit the number of students who require remediation at its campuses, CSU and education officials in California developed the Early Assessment Program (EAP) for students in the state. Those who opt to take the EAP exam are given scores and feedback that provide a measurement of English and math aptitude, and increased support is given to those who display the need for skill enhancement. This effort to reach out to K-12 teachers, counselors, and students and their families is one way in which CSU has committed to making college readiness a priority (Olson, 2006).

Scholars who have recently studied the effectiveness of EAP at California State University, Sacramento (CSUS) found that this intervention supports the college preparation of California's high school students to the extent that remedial needs are, collectively, noticeably decreased (Kurlaender, Howell, & Horn, 2009). Preliminary research by Howell, Kurlaender, & Grodsky (2009) analyzed longitudinal data for all 11th-grade students in California and students who enrolled in CSUS before and after the availability of the EAP. Their analyses of the data point to the probability of a reduced need for remediation in English (6.1%) and math (4.1%). The analyses further suggest that the EAP does not serve as a sorting mechanism as students are still likely to apply for CSU admission even after receiving notice that they are not college ready. Though this research only assesses the impact for one institution among the 23 CSU campuses, Howell, et. al believe their findings are applicable to the entire system.

The EAP has been lauded by multiple organizations as an important step forward in stemming the need for remediation, and is borne out by preliminary research. Still, there are questions and concerns that remain about the impact of the EAP. Tierney and Garcia (2008) question whether students can truly prepare for college-level work given existing resources at their respective high schools. Moreover, their analysis suggests that students are faced with taking coursework that often conflicts with other requirements and only have the online materials made available by the CSU to help them prepare for the placement exams. Above all, Tierney and Garcia question the CSU's strategy – the letter informing them of their preparation – that leaves teenagers “on their own to find the quality instruction they need to become college-ready” (p. 6).

The CSU and CUNY examples show that many campuses are engaging in a form of “sorting” postsecondary applicants through admissions and course placement practices, and these sorting activities may result in differentiated access to higher education experiences, resources, and ultimately success. While sorting practices are not articulated as such, we argue that the act of removing remedial education from four-year institutions, for example, can lead to segmentation of the postsecondary student population. These practices have been, and continue to be, discussed and implemented at various levels of government and education and, in the instance of the California State University and the City University of New York, have elicited strong public response. When reviewing these “solutions,” it is important to consider the implications of these policies in terms of measurable outcomes such as academic performance and degree completion.

Highlighted Reform Efforts

While higher education has traditionally responded to remedial concerns via alignment efforts, placing students by way of assessment exams, or shifting remedial education to a particular segment of postsecondary system, some states and institutions, both the two- and four-year colleges and universities, have presented innovative ideas to address the needs of underprepared students. Innovation in developmental education seems to occur when policymakers and administrators recognize the importance of preparing students, so as to maintain their enrollment and to provide the support needed to attain degrees. Simply put, there is growing recognition that traditional methods of classroom instruction may not allow underprepared students to reach college readiness and excel in their studies.

Scholars have documented innovative projects that aim to reduce the burden of excessive time and money spent on non-college level coursework by introducing intensive summer sessions, sometimes under the auspices of college bridge programs, which allow soon-to-be matriculating postsecondary students to take concentrated versions of remedial courses before their fall semesters begin (Bailey, 2009; Kezar, 2000). This solution is not altogether different from solutions offered in the past. As noted earlier in the review, the University of Buffalo initiated a pre-college program in 1926 where students who performed poorly in high school but planned to enroll at the university took part in a three-week summer study course.

Other examples of innovative approaches to remedial instruction could be found among the Historically Black Colleges and Universities (HBCUs). At the Tuskegee Institute, pre-college courses lasted several hours a day for up to eight weeks during the summer months. Some programs provided not just preparation of basic skills, but offered seminars in science. One particular program brought Yale Law School students to 13 southern black colleges to provide instruction for students. These programs, unlike many of those offered in the present, often granted credit to students who were required to take them. Programs to “obviate the need for remedial work after the student has entered college” (McGrath, 1965 in Casazza & Silverman, 1996, p. 22), utilized five different approaches to include: special courses, intensified sections of regular courses, tutoring, clinical work, and a reduced work schedule (Casazza & Silverman, 1996). Among these approaches, the most popular seemed to be clinical work because it was individualized and did not carry the stigma of academic inferiority.

Today, some institutions and university systems have developed innovative and supportive programs for students once they arrive on campus and are placed into developmental courses. Learning communities have received much attention in the higher education literature and practice (Washington Center for Improving the Quality of Undergraduate Education, n.d.) and evidence shows that colleges are employing resources to support developmental students in similar ways. For example, the Opening Doors Program at Kingsborough Community College of the City University of New York

has established learning communities of students who, together, take remedial, college-level and study-skills courses while their professors create integrated course assignments for the group (Kingsborough, 2009; Scrivener, Bloom, LeBlanc, Paxson, Rouse, & Sommo, 2008; Viadero, 2009). LaGuardia Community College, also of the City University of New York, has a similar program called the First Year Academy (LAGCC, 2009). The Integrated Basic Education and Skills Training program (I-BEST) has been developed by community colleges in Washington state to similarly integrate remedial and college-level coursework for students who demonstrate a need for basic skills education (Viadero, 2009).

Perhaps one of the most important aspects of developing and implementing innovative strategies is bringing them to scale. In other words, while innovative approaches can be found within higher education colleges and universities, it is equally, if not more important to find ways for innovative ideas to be effective throughout the entire university system and the state. Perhaps the closest example of a university system that is taking an innovative approach to redefining remedial and developmental education can be found in Tennessee. The Tennessee Board of Regents system, which oversees 45 institutions including community colleges and four-year colleges, have used a Fund for the Improvement of Postsecondary Education (FIPSE) grant award from the U.S. Department of Education to redesign its developmental math and English curriculum with the goal of moving students on to college-level courses, improve educational outcomes, and reduce costs (<http://www.tnredesign.org/>). Currently, Tennessee is developing a new set of remedial education policies; this includes the elimination of remedial coursework from its public universities by the fall of 2011 (Brooks, 2010).

Other states are developing innovative strategies to support student preparation for college. For example, Connecticut is working to develop interventions that will utilize technology-based tutorials and counseling, and open-entry and open-exit refresher courses for its community college students (Developmental Education Initiative [DEI], 2010). Florida, North Carolina, and Virginia also plan to create remedial education options that rely on new methods of delivery. Ohio and Texas seek to increase remedial course completion rates, and nearly all of these states are working to enhance reporting mechanisms and dissemination of data (DEI, 2010).

Conclusion

The title of this review, *Remedial and Developmental Education Policy at a Crossroads*, calls to mind the various points in time when the debate surrounding this critical form of college instruction reached particular levels of intense awareness, reproach, and a search for solutions. The literature presented in this review is designed to inform the debate by providing its history, present-day policy concerns, and ways states have responded to issues surrounding remedial and developmental education. What this review makes clear is that research on college remediation is currently inadequate and/or inconclusive in terms of informing policymakers about the costs and effectiveness of remedial courses. Still, this paper presents three important findings.

First, remedial and developmental education has contributed to the democratization of American higher education by serving as a key lever to expanding access for scores of individuals. This is important for policymakers to remember because without remedial and developmental courses, many students may have never gained the opportunity to succeed in higher education. Second, despite the fact that remedial education has played such a critical role, the debate over whether it should be a part of higher education continues to this day. So while this is not a new policy problem, given the economic implications of a college degree, the stakes for students and states have risen. Simply reducing or eliminating remedial course offerings does not resolve the problem. Thus, new solutions are required. Indeed, the push to increase educational attainment leads to our third finding that some states, reconsidering the significance of remedial and developmental education to college and workforce readiness, often resort to K-16 alignment and adjustments to assessment policies. These strategies cannot be the only solutions. New initiatives, such as the Tennessee Board of Regents course redesign initiative, provide some evidence that innovative strategies may increase the effectiveness and efficiency of developmental education.

Because most innovations are still too new, we know very little about the impact these strategies have on educational outcomes. Further, many of these innovations take place at the system or institutional level and relate specifically to the delivery of developmental courses. Future research, therefore, should explore the ways state policy influences change at the system and institutional levels. What happens, for example, when a state chooses to eliminate remedial instruction rather than innovate and improve instructional delivery? How do different state policies impact educational outcomes? Finally, in what ways do institutions respond to different state policies related to remedial and developmental education? This review of the literature suggests that future policies must be comprehensive and use multiple strategies at four- and two-year colleges to meet the preparation needs and access demands of the state and its citizens. Strategies should thus include adequate funding and ongoing monitoring by the state to ensure success.

Remedial and developmental education is indeed at a crossroads with questions concerning: the critical role these programs play in expanding access and facilitating completion, the appropriateness of their placement on college campuses, and the costs of delivery. In light of state and federal goals to increase educational attainment, the time for policymakers and higher education leaders to shift the debate toward solutions where the maximum number of people can succeed in America's colleges and universities is now. The challenge to us is whether we have the patience to see these successes gain traction or will we find ourselves continuously at the crossroads debating the same questions without moving forward in terms of policy and course innovation.

References

- Achieve. (2009). Achieve, Inc. homepage. Retrieved on December 12, 2009 from <http://www.achieve.org/>.
- Achieve and the American Diploma Project. (2009). *Closing the Expectations Gap: Fourth Annual 50-State Progress Report on the Alignment of High School Policies with the Demands of College and Careers*. Achieve, Inc.
- Acker, S.R., & Halasek, K. (2008). "Preparing High School Students for College-Level Writing: Using ePortfolio to Support a Successful Transition." *The Journal of General Education*, 57(1), 1-14.
- Adelman, C. (1999). *Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment*. Washington, DC: U.S. Department of Education.
- Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion From High School Through College*. Washington, DC: U.S. Department of Education.
- Alliance for Excellent Education. (2008). *Paying Double: Inadequate High Schools and Community College Remediation*. Washington, DC: Author.
- Arendale, D. (n.d.a). *History of Developmental Education: 19th Century Preparatory Academies*. Twin Cities, MN: University of Minnesota.
- Arendale, D. (n.d.b). *Then and Now: The Early Years of Developmental Education*. Kansas City, MO: University of Missouri, Kansas City.
- Arendale, D. (2002). "A Memory Sometimes Ignored: The History of Developmental Education." *Learning Assistance Review*, 7(1), 5-13.
- Arendale, D. (2005). "Terms of endearment: Words that define and guide developmental education." *Journal of College Reading and Learning*, 35(2), 66-82.
- Astin, A.W. (1998). "Remedial education and civic responsibility." *National Crosstalk*, 6(3), 12-13. Retrieved from <http://www.highereducation.org/crosstalk/pdf/ctsummer98.pdf>.
- Astin, A.W. (1999). "Rethinking Academic Excellence." *Liberal Education*, 85(2), 8-18.
- Astin, A.W. (2000). An interview: Alexander W. Astin. *National Crosstalk*, 8(1), 2. Retrieved from http://www.highereducation.org/crosstalk/pdf/ct_winter00.pdf.

- Attewell, P., & Lavin, D.E. (2007). *Passing the Torch: Does Higher Education for the Disadvantaged Pay Off Across the Generations?* New York: Russell Sage Foundation.
- Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). "New evidence on college remediation." *Journal of Higher Education*, 77(5), 886-924.
- Bailey, T. (2008). *Challenge and Opportunity: Rethinking the Role and Function of Developmental Education in Community College*. CCRC Working Paper No. 14. Community College Research Center, Teachers College, Columbia University.
- Bailey, T. (2009). "Challenge and opportunity: Rethinking the role and function of developmental education in community college." *New Directions for Community Colleges*, 2009(145), 11-30.
- Bailey, T. (2009). *Rethinking Developmental Education in Community College*, (CCRC Brief No. 40). Retrieved from <http://ccrc.tc.columbia.edu/Collection.asp?cid=20>
- Bailey, T., Jeong, D.W., & Cho, S-W. (2009). *Referral, Enrollment, and Completion in Developmental Education Sequences in Community Colleges* (CCRC Working Paper No. 15. Retrieved from <http://ccrc.tc.columbia.edu/Publication.asp?UID=659>
- Bastedo, M. N., & Gumport, P. J. (2003). "Access to what?: Mission differentiation and academic stratification in U.S. public higher education." *Higher Education*, 46, 341-359.
- Berg, E.H., & Axtell (1968). *Programs for Disadvantaged Students in California Community Colleges*. Oakland: Peralta Junior College District.
- Blocker, C.E., Plummer, R.H., & Richardson, R.C. (1965). *The Two-Year College: A Social Synthesis*. Englewood Cliffs, NJ: Prentice-Hall.
- Bettinger, E.P., & Long, B.T. (2005a). "Remediation at the community college: Student participation and outcomes." *New Directions for Community Colleges*, 2005(129), 17-26.
- Bettinger, E. P., & Long, B. T. (2005b). *Addressing the Needs of Under-prepared Students in Higher Education: Does College Remediation Work?* (NBER Working Paper No. 11325). Cambridge, MA: National Bureau of Economic Research (NBER).
- Bettinger, E., & Long, B.T. (2009). Addressing the Needs of Under-prepared Students in Higher Education: Does College Remediation Work? *Journal of Human Resources*, 44(3), 736-771.

- Bernstein, A. R., & Eaton, J. S. (1994). "The transfer function: Building curricular roadways across and among higher education institutions." In M. J. Justiz, R. Wilson & L. G. Bjork (Eds.), *Minorities in Higher Education* (pp. 215-260). Phoenix: American Council of Education.
- Boylan, J.R., Bonham, B.S., & White, S.R. (1999). "Developmental and remedial education in postsecondary education." *New Directions for Higher Education*, 1999(108), 87-101.
- Boylan, H.R., White, Jr., W.G. (1987). "Educating all the nation's people: The historical roots of developmental education, Part 1." *Review of Research in Developmental Education*, 4(4), 1-4.
- Boyer, E. (1987). *College: The Undergraduate Experience in America*. New York: Harper & Row.
- Breneman, D. W., & Haarlow, W. N. (1998, July 1). *Remedial Education: Costs and Consequences*. Washington, D.C.: Thomas B. Fordham Foundation.
- Brier, E. (1984). "Bridging the academic preparation gap: An historical view." *Journal of Developmental Education*, 8(1), 1-5.
- Brint, S. & Karabel, J. (1991). *The Diverted Dream: Community Colleges and the Promise of Educational Opportunity in America, 1900-1985*. New York: Oxford University Press.
- Brooks, J. (2 July 2010). "TN revamps remedial education: Developmental work to be offered only at community colleges." *The Tennessean*.
- Brown, R.S., & Niemi, D.N. (2007). *Investigating the Alignment of High School and Community College Assessments in California*. (National Center Report #07-3). Washington, DC: National Center for Public Policy and Higher Education.
- Brubacher, J.S., & Rudy, W. (1976). *Higher Education in Transition* (3rd Ed.). New York: Harper & Row.
- Calcagno, J.C., Crosta, P, Bailey, T., & Jenkins, D. (2007). "Stepping stones to a degree: The impact of enrollment pathways and milestones on community college student outcomes." *Research in Higher Education*, 48, 775-801.
- Callahan, M.K., & Chumney, D. (2009). "'Write Like cCollege': How remedial writing courses at a community college and a research university position 'at-risk' students in the field of higher education." *Teacher's College Record*, 111(7), 1619-1664.

- Casazza, M.E. (1999). "Who are we and where did we come from?" *Journal of Developmental Education*, 23(1), 2-7.
- Casazza, M.E., & Silverman, S.L. (1996). *Learning Assistance and Developmental Education*. San Francisco: Jossey-Bass.
- Center for Student Success. (2007). *Basic Skills as a Foundation for Success in California Community Colleges*. USA Funds.
- City University of New York. (1998, May). *City University of New York Trustees Approve Resolution to End Remediation in Senior Colleges*. Retrieved from http://www1.cuny.edu/events/press/june4_98.html
- Clark, B. (1960). *The Open Door College*. New York: McGraw-Hill.
- Clifford, M., & Millar, S.B. (2007). *K-20 Partnerships: Literature review and recommendations for future research*. System-wide Change for All Learners and Educators (SCALE) Partnership: University of Wisconsin at Madison.
- Clowes, D.A. (1980). "Remediation in American higher education." In J. Smart (Ed.) *Higher Education: Handbook of Theory and Research*, Volume 8, (pp. 460-493), New York: Agathon Press.
- Clowes, D.A. (1992). "More than a definitional problem: Remedial, compensatory, and developmental education." *Journal of Developmental and Remedial Education*, 4(1), 8-10.
- Cohen, A.M. (1998). *The Shaping of American Higher Education: Emergence and Growth of the Contemporary System*. San Francisco: Jossey-Bass.
- Cohen, A.M., & Brawer, F.B. (2003). *The American Community College* (4th Ed.). San Francisco: Jossey-Bass.
- College Board. (2008). *Trends in College Pricing*. Washington, D.C.: The College Board.
- Cox, M.H., Canario, J.W., & Cypher, J.R. (1960). "Remedial English: A Nation-Wide Survey." *College Composition and Communication*, 11(4), 237-244.
- Cross, A.P. (1976). *Accent on Learning: Improving Instruction and Reshaping the Curriculum*. San Francisco: Jossey-Bass.
- Crowe, E. (1998). *Statewide Remedial Education Policies*. Denver, CO: State Higher Education Executive Officers.
- Developmental Education Initiative. (2010). *Draft State Policy Priorities: March 2010*. Retrieved from:

<http://www.insidehighered.com/content/download/342161/4272218/version/1/file/DRAFTDEI+State+Policy+Priorities+031010.pdf>

- Dougherty, K. J., & Reid, M. (2007, April 5). *Fifty States of Achieving the Dream: State Policies to Enhance Access to and Success in Community Colleges Across the United States*. New York: Community College Research Center, Teachers College, Columbia University.
- Dowd, A.C. (2007). "Community Colleges as Gateways and Gatekeepers: Moving Beyond the Access "Saga" Toward Outcome Equity." *Harvard Educational Review*, 77(4), 407-419.
- Dowd, A.C., & Ventimiglia, L. (2008). *A cost estimate of standards-based remediation in a community college developmental education program*. University of Southern California and North Shore Community College.
- Education Commission of the States. (2006). *Policy brief: The Progress of P-16 Collaboration in the States*. Denver, CO.
- Education Trust. (1999). "Ticket to Nowhere: The Gap Between Leaving High School and Entering College and High Performance Jobs." *Thinking K-16*, 3(2), 1-34.
- Education Trust (2010). *Opportunity Adrift: Our Flagship Universities are Straying from Their Public Mission*. The Education Trust. Washington, D.C.
- Education Week* (January 4, 2007). "From Cradle to Career: Connecting American Education from Birth through Adulthood," 26(17).
- Geiger, R.L. (2005). "The Ten Generations of American Higher Education." In P.G. Altbach, R.O. Berdahl, & P.J. Gumport (Eds.), *American Higher Education in the Twenty-First Century* (pp. 38-70). Baltimore, MD: Johns Hopkins University Press.
- Goen-Salter, S. (2008). "Critiquing the Need to Eliminate Remediation: Lessons from San Francisco State." *Journal of Basic Writing (CUNY)*, 27(2), 81-105.
- Grubb, W.N., & Associates. (1999). *Honored but Invisible: An Inside Look at Teaching in Community Colleges*. New York and London: Routledge.
- Heber, S., & Selingo, J.J. (2009, February 26). "Obama's Higher-Education Goal Is Ambitious but Achievable, Leaders Say." *Chronicle of Higher Education*. Retrieved April 5, 2010 from <http://chronicle.com/article/Obamas-Higher-Education-Goal/1551/>

- Horn, C., McCoy, Z., Campbell, L. & Brock, C. (2009). "Remedial Testing and Placement in Community Colleges." *Community College Journal of Research and Practice*, 33(6), 510-526.
- Howell, J.S., Kurlaender, M., & Grodsky, E. (2009). *Postsecondary Preparation and Remediation: Examining the Effect of the Early Assessment Program at California State University*. Sacramento, CA: CSUS.
- Hughes, K.L. (2010). "Dual Enrollment: Postsecondary/Secondary Partnerships to Prepare Students." *Journal of College Science Teaching*, 39(6).
- Ignash, J.M. (1997). "Who should provide postsecondary remedial/developmental education?" In J.M. Ignash (Ed.), *Implementing effective policies for remedial and developmental education*. (New Directions for Community Colleges No. 100). San Francisco: Jossey-Bass.
- Jeynes, W. H. (2007). *American Educational History: School, Society and the Common Good*. Thousand Oaks, CA: Sage.
- Jennings, F.G. (1970). The two-year stretch. *Change*, 2(2), 15-25.
- Kendrick, S.A., & Thomas, C.L. (1970). "Transition from school to college." *Review of Educational Research*, 40(1), 151-179.
- Kezar, A. (2000). *Summer Bridge Programs: Supporting All Students*. ERIC Digest (ED 4424212000-06-00). ERIC Clearinghouse on Higher Education, Washington, DC.
- Kingsborough Community College. (2009). Learning Communities Opening Doors. Retrieved on December 13, 2009 from http://www.kingsborough.edu/faculty/learning_communities/lc_opening_doors.htm
- Kitzhaber, A.R. (1962). "Freshman English: A Prognosis." *College English*, 23(6), 476-483.
- Kirst, M.W. (2008). "Secondary schools and colleges must work together." *Thought and Action: Special Focus: The Seamless Web of Education Pre-K to Graduate School*. Fall, 111-122.
- KnowHow2Go. (2009). KnowHow2Go Homepage. Retrieved on December 12, 2009 from <http://knowhow2go.com/>
- Kozeracki, C.A. (2002). "ERIC review: Issues in developmental education." *Community College Review*, 29(4), 83-100.

- Kurlaender, M., Howell, J., & Horn, C. (2009). *College Readiness to Degree Completion: Remedial Placement and Patterns of College Persistence*. Association for Institutional Research.
- LaGuardia Community College. (2009). *Learning Communities at LaGuardia Community College*. Retrieved on December 13, 2009 from <http://www.lagcc.cuny.edu/lc/academies.html>
- Lavin, D., & Hyllegard, D. (1996). *Changing the Odds: Open Admissions and the Life Chances of the Disadvantaged*. New Haven: Yale University Press.
- Levin, H.S., & Calcagno, J.C. (2008). "Remediation in the Community College: An Evaluator's Perspective." *Community College Review*, 35(3), 181-207.
- Long, B.T. (2005). "The remediation debate: Are we serving the needs of underprepared college students?" *National Crosstalk*, 13(4). Retrieved from <http://www.highereducation.org/crosstalk/ct0405/voices0405-long.shtml>.
- Ludwig, L., & Gold, B.K. (1969). *The Developmental Studies and Tutorial Programs: A Progress Report*. Los Angeles: Los Angeles City College.
- Lynes, R. (1966). How good are the junior colleges? *Harper's Magazine*, 233 53-60.
- McCormick, A. C., Horn, L. J., & Knepper, P. (1996). *A Descriptive Summary of 1992-93 Bachelor's Degree Recipients 1 Year Later, with an Essay on Time to Degree, Baccalaureate and Beyond Longitudinal Study. Statistical analysis report*. Washington, DC: National Center for Education Statistics.
- McGrath, D., & Spear, M.B. (1991). *The Academic Crisis of the Community College*. New York: State University of New York Press.
- Melguizo, T., Hagedorn, L. S., & Cypers, S. (2008). "Remedial/Developmental Education and the Cost of Community College Transfer: A Los Angeles County sample." *Review of Higher Education*, 31(4), 401-431.
- Merisotis, J.P., & Phipps, R.A. (2000). "Remedial Education in Colleges and Universities: What's Really Going On?" *The Review of Higher Education*, 24(1), 67-85.
- National Center for Education Statistics. U.S. Department of Education. (2003). *Remedial Education at Degree-Granting Postsecondary Institutions in Fall 2000*, NCES 2004-010. Washington, DC: Author.
- Obama, B. (2009). *The American Graduation Initiative*. Speech given at Macomb Community College. Retrieved from <http://www.whitehouse.gov/blog/Investing-in-Education-The-American-Graduation-Initiative>.

- Office of Postsecondary Education. U.S. Department of Education. (2010). *History of the Federal Trio Programs*. Retrieved April 10, 2010 from <http://www2.ed.gov/about/offices/list/ope/trio/triohistory.html>.
- Oliva, M. (2004). "Reluctant partners, problem definition, and legislative intent: K-16 policy for Latino college success." *Journal of Hispanic Higher Education*, 3(2), 209-230.
- Olson, L. (2006). "California high schoolers get preview of college-placement test." *Education Week*, 25(33), 27.
- Oudenhoven, B. (2002). "Remediation at the community college: Pressing issues, uncertain solutions." *New Directions for Community Colleges*, 117(Spring), 35-44.
- Parker, T. L. (2007). *Ending college remediation: Consequences for access and opportunity*. (ASHE/Lumina Policy Briefs and Critical Essays No. 2). Ames: Iowa State University, Department of Educational Leadership and Policy Studies.
- Parker, T. L., & Bustillos, L. T. (2007, April). *A Tale of Two Univer(cities): Race, Inequality, and Remediation*. Paper presented at the meeting of the American Education Research Association, Chicago.
- Parker, T.L., & Richardson, R.C., Jr. (2005). Ending remediation at CUNY: Implications for access and excellence. *Journal of Educational Research & Policy Studies*, 5(2), 1-22.
- Pathways to College Network. (2009). Pathways to College Network homepage. Retrieved on December 13, 2009 from <http://www.pathwaystocollege.net/>
- Perin, D. (2006). "Can Community Colleges Protect Both Access and Standards? The Problem of Remediation." *Teachers College Record*, 108(3), 339-373.
- Phipps, R. (1998). *College Remediation: What It Is, What It Costs, What's At Stake*. Washington, D.C.: Institute for Higher Education Policy.
- Quirk, K.E. (2005). A comprehensive approach to developmental education. *New Directions for Community Colleges*, 2005(129), 83-92.
- Richardson, J.W. (2005). "'Who Shall be Educated?': The Case of Restricting Remediation at the City University of New York." *Education and Urban Society*, 37(2), 174-192.
- Ross, D. (1970). "Remedial or Developmental? Confusion Over Terms." *The Two-Year College Mathematics Journal*, 1(2), 27-31.

- Roueche, J. E. (1968). *Salvage, Redirection, or Custody? Remedial Education in the Community Junior College*. Washington, DC: American Association of Community and Junior Colleges.
- Roueche, J. E., & Kirk, W.R. (1973). *Catching Up: Remedial Education*. San Francisco: Jossey-Bass.
- Roueche, J.E., & Snow, J. (1977). *Overcoming Learning Problems*. San Francisco: Jossey-Bass.
- Rudolph, F. (1990). *The American College and University: A History*. Athens, GA: The University of Georgia Press.
- Russell, A. (2008). *Enhancing College Student Success Through Developmental Education*. Washington, D.C.: American Association of State Colleges and Universities.
- Schenz, R.F. (1963). *An Investigation of Junior College Courses and Curricula for Students with Low Ability*. Unpublished doctoral dissertation. University of California, Los Angeles.
- Scrivener, S., Bloom, D., LeBlanc, A., Paxson, C., Rouse, C.E., & Sommo, C. (2008). *Opening Doors: A Good Start: Two-year Effects of a Freshmen Learning Community Program at Kingsborough Community College*. New York: MDRC.
- Shults, C. (2000). *Remedial Education: Practices and Policies in Community Colleges*. Research brief no. AACCRB-00-2. Washington, D.C.: American Association of Community Colleges.
- Snyder, F., & Blocker, C.E. (1970). *Persistence of Developmental Students*. Harrisburg, PA: Harrisburg Area Community College.
- Soliday, M. (2002). *The Politics of Remediation: Institutional and Student Needs in Higher Education*. Pittsburgh, PA: University of Pittsburgh Press.
- Strong American Schools (2008). *Diploma to Nowhere*. Washington, D.C.: Author.
- Tierney, W.G., & Garcia, L.D. (2008). "Preparing underprepared students for college: Remedial education and early assessment programs." *Journal of At-Risk Issues*, 14(2), 1-7.
- Traub, J. (1994). *City on a Hill: Testing the American Dream at City College*. Reading, MA: Addison-Wesley.

Urban, W.J., & Wagoner, Jr., J.L. (2009). *American Education: A History* (4th Ed.). New York: Routledge.

Viadero, D. (2009, September 2). "Community college a research puzzle." *Education Week*.

Washington Center for Improving the Quality of Undergraduate Education. (n.d.). Learning communities: National learning communities directory. Retrieved on December 13, 2009 from <http://www.evergreen.edu/washcenter/project.asp?pid=73>

Wellman, J.V., Desrochers, D.M., Lenihan, C.M., Kirshstein, R.J., Hurlburt, S., & Honegger, S. (2009). *Trends in College Spending. Delta Cost Project*. Retrieved on May 8, 2010 from www.delta-costproject.org/resources/pdf/trends_in_spending-report.pdf.

Western Interstate Commission for Higher Education. (2009). State Policy Inventory Database Online (SPIDO). Retrieved on December 13, 2009 from <http://www2.wiche.edu/spido>

Wilson, H. (1961). "The Elimination of Remedial English at Illinois." *College Composition and Communication*, 12(2), 70-73.