Remedial Education in Higher Education: The Costs and Benefits

Peter E Zirogiannis

Long Island University

C.W. Post Campus- EDU-1004

Abstract

Providing effective remediation for students who are struggling academically is an issue faced by every state in the nation. The demands of No Child Left Behind (NCLB) and Getting Past Go, are prompting many states to change the nature of their remediation policies or create new policies to guarantee that they are in compliance with the new requirements for academic proficiency. Remediation is not clearly defined and can vary from institution to institution, but it is generally defined as coursework offered at a postsecondary institution (community college or 4-year) that is considered to be below college-level work. Remediation is also commonly referred to as: "developmental education", "basic skills training", or "non-traditional coursework." This paper will examine some of the key issues involved with remedial education on the post-secondary level as follows: the gap between high school preparedness and college readiness; the success of remedial education; the impact of remediation to the reputation of the institution; the financial costs of remedial education; and the social and economic costs of not providing remediation.

Keywords: remediation, NCLB, Getting Past Go, developmental education

Overview

The focus of American post-secondary education is no longer on access to college, but attaining a two or four year degree. President Obama's American Graduation Initiative intends to produce 5 million additional community college graduates by 2020, and the Bill and Melinda Gates Foundation aspires to double the number of young people who earn a postsecondary degree. Mayor Michael R. Bloomberg has made the rising graduation rate – to 61 percent in June 2011, from 46.5 percent in 2005- the No. 1 symbol of his educational accomplishments. Unfortunately, this rate seems less impressive when we take into consideration the number of high school graduates requiring some type of remediation. Students entering LaGuardia and other City University of New York community colleges in need of remediation in all three subjects (Writing, Reading and Arithmetic) is 22.6 percent in 2010 (2,812 students), up from 15.4 percent in 2005 (1,085) (Winerip, 2011).

With a deepening economic crisis in the United States, many individuals are returning to colleges and universities in an attempt to upgrade their credentials to secure employment. In combination with the initiatives of the Obama Administration, such as The American Recovery and Reinvestment Act (ARRA) and the Student Financial Aid and Fiscal Responsibility Act (SAFRA) there has been a surge in enrollment at public and private two and four-year colleges and universities (AASCU, 2010). The Pew Research Center has estimated that nearly 40 percent, or 11.5 million, of 18-24 year olds were enrolled in college in 2008. According to the NCES (2005) the proportion of students choosing to continue their education directly after high school has been on the increase. The immediate college enrollment rate was about 50%

between the years 1973 and 1980, increased to 67% in 1997 and has since leveled off. In 2003, 64% of high school graduates entered college directly after high school. Enrollment rates increased for both males and females during this period, but the rates for females increased faster (NCES 2005). A major issue that has been highlighted by this influx of students, who believe they are meant to go to college to compete for jobs in the global economy, is college readiness.

Before the advent of the Common Core State Standards Initiative, great variation existed between the curriculums in K-12 education. The lack of rigor in many of these standards and the failure to align curriculum with college and workplace expectations has resulted in many students who can pass all required tests for high school graduation (and High Stakes Tests), but are still underprepared for college level work. The National Governors Association and the Council of Chief State School Officers undertook the Common Core State Standards Initiative, and in order for states to receive Race to the Top funds, they are required to adopt the standards. So far, 48 states and the District of Columbia have signed on to adopt these college and career-readiness standards. Although the scope of this paper does not focus on the Common Core State Standards or credit-based transition programs, it is important to mention the impact of initiatives such as these to the need for remedial education.

The need for remedial education at the post-secondary level has been largely attributed to the lack of academic preparation in high school. High school plays a critical role in students' ability to enroll and succeed in college. High school students who completed rigorous curricula were more likely to enroll in a 4-year college, persist through post-secondary education, and earn a bachelor's degree (Adelman, 1999). Unfortunately, too many students are not learning the

basic skills needed to succeed in college or work while in high school. As a result, it is predicted that the nation loses more than $3.7 billion a year (Greene & Winters, 2006). Only 70percent of students entering high school will graduate. This represents one of the lowest rates among industrialized nations (Green & Winters, 2006). Of those students receiving a high school diploma, half are academically prepared for post-secondary education (Greene & Winters, 2005). According to a recent study of high school juniors and seniors taking the ACT college entrance exam, only half were prepared for college-level reading assignments in core subjects like math, history, science and English (ACT, 2006). In an article in October in The New York Times, the author describes the case of a 19 year old student who graduated from high school with grades in the 90s, passed four state Regents exams and upon enrolling to a local community college in Queens, NY, was informed that she failed all three placement test and needed remediation in reading, writing and math.

The Scope of Remedial Course Taking

Offering coursework below college level in post-secondary institutions is an issue that raises a great deal of concern and begs a number of questions. The name given to such courses of study or programs include, “remedial education”, “developmental education”, “college prep”, “non-traditional coursework” or “basic skills”. Many policy makers are asking why so many students in college are in need of taking basic reading, writing and arithmetic- subjects that should have been learned in high school or junior high school? Another question often asked by policy makers regarding remedial education, is- Does it belong in higher education at all, and if so, should it be taught only in community colleges? How effective is remedial education, and do

students stay in college longer because of remediation? Is the investment in remedial programs worth the costs?

In March 2011, The New York Times had a story which discussed the tide of remedial students attending The City University of New York. The author, Lisa W. Foderaro begins,"The City University of New York has long spent much of its energy and resources just teaching new students what they need to begin taking college-level courses" (Foderaro, 2011). There are such a large number of students in need of remedial education at the university's six community colleges that the University needed to rethink its approach to teaching. About 75% of the 17,500 freshman at the community colleges this year have needed remedial instruction in reading, writing or arithmetic, and 25% require instruction in all three- labeled as "triple remedial". The reasons for such an increase in students needing remedial education harkens back to our previous discussion of high school preparation. The state education department reports that less than half of all New York State students who graduated from high school in 2009 were prepared for college or careers (Foderaro, 2011). In New York City, the number is an alarming 23% (based on state Regents tests in English and Math). CUNY estimates that it costs around $33 million last year on remediation, to bring students up to speed. The cost of remedial education is a major issue to be discussed later in the paper.

Approximately twenty-one states stipulate that students not meeting minimal requirements take remedial coursework (Jenkins & Boswell, 2002). One of the reasons why community colleges such as CUNY have seen such an increase in the number of underprepared students is because these institutions are "open enrollment". This means that the college

does not institute an admission's criteria beyond a high school diploma or equivalency degree and a student does not need to provide SAT or ACT scores to be admitted. Because these colleges are strictly relying on the fact that the student received a high school diploma for admissions, it highlights the huge gap between what students need to graduate high school and what it takes to be successful in college level courses. Estimates of the number of students enrolling in remedial education vary according to the population measured; from 23% of all students (Shaw, 1997) and 30% of entering freshman (Breneman & Haarlow, 1998) to 40% of traditional undergraduates (Attewell et al., 2006). Although the population of students enrolled in remedial education is very diverse, made up of adult/non-traditional students, 80% of students enrolled are 21 or younger (Breeman & Haarlow, 1998; Merisotis & Phipps, 2000). The knowledge gap seen at community colleges is increasingly being recognized as a national problem. About 65% of all community college students nationwide need some form of remedial education (Foderaro, 2011). According to the U.S. Department of Education, in 2007-2008, approximately 36 % of first year undergraduate students reported that they had ever taken a remedial course, and 20 % of first year undergraduates reported that they had taken at least one remedial course in the 2007-2008 academic years, as shown in Figure 1 (NCES 2011-033).

[Insert Figure 1 about here]

Concurrent with previous findings, across the nation, 42 % of community college freshman and 20% of freshman in four-year institutions enroll or are placed in at least one remedial course (NCES 2004b). This equates to about a third of all incoming freshmen and is consistent with the data reported by the CUNY system. As The New York Times article

suggests, community colleges bear the greatest share of the remediation burden, and trends indicate that their responsibilities in this arena are likely to grow.

Contrary to what makes intuitive sense, low-income students with poor academic skills are not the only students enrolled in remedial classes (Attewell et al, 2006). Although minority students were somewhat more likely to be enrolled in remedial classes, a substantial number of students taking remedial classes were from suburban and rural schools with many coming from affluent homes. However, remediation did not vary greatly by income (Berkner & Choy, 2008). It is important to point out that community colleges are the point of entry into higher education for many Americans, and they serve high proportions of low-income students and students of color. Community colleges enroll 45 % of all undergraduate students, including 47% of all African-American students, 55% of all Hispanics and 57% of all Native Americans (American Association of Community Colleges, 2006).

Typically what is the process by which students are placed into remedial classes? Upon application to college a review of college transcripts may require a student to take a nationally normed, standardized college entrance examination, such as COMPASS or ACCUPLACER. Based on predetermined cut-off scores, students are scheduled in one to three remedial courses-reading, writing or arithmetic. These exams test for subject matter knowledge, by adjusting the level of the questions and calculating the difficulty of the response of the previous question. The score of this exam alone will determine the placement of the student. Students who are informed that despite having a high school diploma and a decent GPA in high school, fell below the cut score on the entrance exam, and are required to take remedial classes, are generally resistant.

This is one of the reasons why at Briarcliffe College we give students the opportunity to test out of a remedial class on the first day of the class, by allowing a student to take a paper diagnostic exam. Students will explain that their poor performance on the standardized test is not due to a lack of skills and competencies, but rather due to the format of the test, fatigue, they did not take the exam seriously or were in hurry, etc. For these students, who are in denial, we afford them the opportunity for a second chance to demonstrate their proficiency. In 95% of the instances, students who do not meet the cut score requirements on the entrance exam usually fail the paper diagnostic exam as well. The two instruments are highly reliable and well correlated with each other. The cut scores on the standardized entrance exam are determined by the institution and based on a scoring rubric provided by the College Boards. At Briarcliffe students are required to show at least a minimum proficiency to be qualified for college-level coursework.

Brief History of Remedial Education

Although the issue of remedial education is currently a hot topic, and one of much debate, it is not new to higher education. Remedial education has been a part of higher education since the early colonial days. In the 17th century Harvard College provided tutors for students in Greek and Latin who were underprepared. The middle of the 18th century saw the establishment of land-grant colleges which included departments for students who were below average in reading, writing and arithmetic. By the end of the 19th century when only 238, 000 students were enrolled in higher education, over 40% of the first-year students required some type of college preparatory program. At the beginning of the 20th century with competition for students at many higher education institutions the number of underprepared students has grown. In short,

throughout history there have been a number of events, such as: the G.I. Bill, Civil Rights Act of 1964, the Higher Education Act of 1965 and NCLB that have impelled an increase in the number of underprepared students attending College. Whether it was the Morrill Acts' expansion of higher education, the GI Bill's extension of higher education to returning veterans after WWII or any number of court rulings that opened the doors of colleges and universities to people who had previously denied access, college access has been a critical means for growing our nation's economy and insuring the social mobility of its' citizens. Currently, the Obama administration has emphasized the importance of higher education, urging Americans to be prepared for at least one year of post-secondary education. It is believed that in education, the key to our global competiveness in the 21st century can be found (Obama, 2009). Despite the presence of remedial education on American college campuses since the opening of Harvard in 1636, questions still arise as to the appropriateness of such courses and their perceived threat to academic excellence (Brubacher & Rudy, 1976).

Despite the fact that remedial education has a long standing history in higher education in this country there is still quite a bit of controversy regarding its place. Twenty-two percent of the institutions in a recent NCES survey indicated that they do not offer remedial education courses. Approximately two-thirds noted that their students did not need remediation. About a quarter of the students who are in need of remediation are required to take it at another institution because theirs does not offer remedial classes. The under reporting of students in need of remediation and the snobbery associated with institutions that claim their students do not need remediation is most likely due to the negative connotation often affixed to an institution of higher learning that

caters to such a population. In a paper presented to the American Council on Education, Astin (1998) states that an institutions "excellence" is defined by its resources and reputation. An institution's reputation is greatly affected by the demographics of its student population, such as test scores, GPAs, etc. However, as a result of such arrogance, underprepared students are viewed as some kind of educational "pariah" to besmirch the reputation of an otherwise respected institution. Despite the fact that these institutions focus more heavily on the credentials and abilities of applicants than on the knowledge and skills of the graduates, does not change the fact that many more high school students than we would like to admit are unprepared for college-level work, and is an urgent matter that needs to be addressed (Breneman & Haarlow, 1998).

Suggestions for Policy Design and Implementation

Policy Issues

As was just introduced in the previous section, one of the major policy concerns surrounding remedial education is the tension between access to educational opportunity for underprepared students and higher education's on-going quest for more stringent standards (Shaw, 1997). The sentiment regarding remedial education can perhaps best be seen in the following statement by the future president of the University of Michigan, when he said, "We have cheapened education so as to place it within the reach of everyone" (Rudolph, 1990). Policy makers across the country continue to ask if it is appropriate for institutions of higher education to offer remedial courses to students who lack the academic skills needed to succeed in

college-level courses. Advocates of remedial education often point to the fact that these courses allow more students the opportunity to succeed in college-level courses and that offering remedial programs to underprepared students can do more to alleviate serious social and economic problems than almost any other action. In summation, advocates of remedial education posit that remediation gives students a second chance, offers a relatively low-cost policy solution that has high social benefits and contributes to the retooling of the American workforce. Eighty percent of jobs in our knowledge-based economy will require some education beyond high school (McCabe, 2000).

Those who are opposed to remedial education in the post-secondary arena often cite various factors including the costs. The argument made is that taxpayers are paying for student's education twice when they are enrolled in remedial classes, because these are skills that should have been mastered in high school. The argument is also made that institutions with open enrollment that cater to such a diverse population of learners could not possibly maintain high academic standards. Another compelling argument against remedial education is that students who take remedial courses are more likely to drop out of college before graduation because of the additional, noncredit coursework they are expected to take. Data from the High School and Beyond Study show that by the time they are 30 years old, 44% of the students who take no remedial courses, 13% of the students who take three or four remedial courses, and 8 % of the students who take more than four remedial courses earn a degree (Adelman, 1996). Dr. Logue, the provost for CUNY says that the university's biggest concern is with students who are behind in all three subjects. He says, "These students have a really low probability of success, and it's hard to know how to work with them." He continues,"There's no question that the more

remediation a student needs, the less likely they are ever to graduate." (Foderaro, 2011). CUNY officials say that only about 25% of full-time students at the community colleges graduate within six years. In discussing statistics pertaining to college students' failure to graduate from college it is important to point out that academics is not the only contributing factor to the dropout rate. Financial pressures and competition for time are significant reasons college students struggle to finish. According to a recent Public Agenda report, among students in four-year schools, 45 % work more than 20 hours a week. For students in community colleges, more than 25% work more than 35 hours per week. From my own personal experience working with remedial students and "at-risk" students, many of them leave school for a variety of non-academic reasons, including: money, childcare, illness of a family member, transportation, etc.

The Effectiveness of Remedial Education and the Costs

Due to a lack of available data as well as a variety of methodological issues, little concrete information is known about the overall effectiveness of remedial education (Levin & Calcagno, 2008). Current studies offer mixed results (Bailey, 2009) and continued research needs to be done before any firm conclusions can be reached. Some studies support the premise that remediation enables students to pursue college-level work: approximately two-thirds of students enrolled in remedial reading, writing or arithmetic courses successfully completed those courses (NCES, 1996). And, 45% of students who took two remedial courses achieved at least an associate degree. Students who require remediation in reading are at a greater disadvantage than those with a math deficiency (McCabe, 2000). Overall, remedial math and English courses

decrease the probability of dropping out of school and increase the probability of completing a degree while remedial work in English seems to lower the probability of transferring to a less selective or lower level institution (Bettinger & Long, 2005). At four-year colleges and universities, students who have successfully completed remedial courses take longer to complete their degrees and are somewhat more likely to transfer to lower-level colleges, but are less likely to drop out of college completely (Bettinger & Long, 2004).Students who successfully completed remedial courses at two-year colleges had better outcomes than did similar students not taking remediation. However, this same study found no evidence that taking and passing remedial courses at four-year institutions yielded similar positive effects (Attewell et al., 2006). Recent studies, however, show that completion rates alone may not tell the whole picture about the effectiveness of remedial education. Bettinger and Long (2009) found that educational outcomes of those who take remediation and those who do not, often disappear when you account for academic and social backgrounds. Adelman (2006) did find that 49% of students who took at least one remedial course graduated within eight years as compared to 70% of students who did not take any remedial courses. However, he goes on to say that the lower graduation rates for remedial students are likely to be a function of inadequate high school preparation rather than the remedial coursework. Attewell et al. (2006) also concluded after conducting a series of regression analyses that remedial course enrollment did not reduce a community college student's likelihood of earning an associate or higher degree. As for adult learners, although the research is more limited, they do not seem to be negatively affected by taking remedial courses (Calcagno, Costa, Bailey, & Jenkins, 2006). This might be due to the

fact that adult students were only in need of refreshing their academic skills after being out of school for a number of years. Despite the lack of real compelling evidence against remedial education, critics still maintain that too many students are taking too many remedial and developmental courses (Attewell, et al, 2006). However, the literature suggests that the percentage of students enrolled in remedial courses today does not differ from remedial course taking 100 years ago.

Breneman and Haarlow (1998) suggest that nationally, remedial education absorbs about $1billion annually in a public higher education budget of $115 billion- less than 1% of expenditures. This estimate was derived by surveying all 50 states and includes the costs associated with remediation for both traditional and returning adult students. In the last 20-30 years a number of policy debates have questioned whether or not remedial education is a drain on resources, or a "best buy" in higher education. The Strong American Schools (2008) analysis used higher education expenditures and reported that, assuming students took at least two remedial courses, $2.89 billion would be spent in total educational costs for remedial courses. The Alliance for Excellent Education (2006) found that reducing remedial education in public community colleges alone could save more than $3.7 billion a year. 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. Saxon and Boylan (2001) did a study in which they examined the literature regarding the cost of delivering post-secondary remedial education. Five studies were examined which offered statewide and national estimates of these costs. The researchers

concluded that remedial courses seldom cost institutions more than they generate in revenues. Furthermore, in community colleges in particular, remedial courses generate more revenue than is spent in their delivery (Saxon & Boylan, 2001). The researchers also point out that statewide remediation costs are always measured in single digits, in most cases this figure is in the 1% to 2% range. It appears that relatively little money is being invested in raising the academic standards of a significant number of entering college students, and that any public scrutiny is unwarranted. Despite these facts there are still critics that continue to try and demonstrate why the cost of remedial education is not justifiable. Critics will discuss the fact that colleges must pay faculty to teach remedial courses; provide the classroom space; and supply a variety of support services, including counseling, administrative support, parking, etc. The nation as a whole not only pays to remediate students, but also faces future financial loss because students who need remediation are more likely to leave college without a degree and will earn less than those that do. The wages of individuals with some college average about $20, 171 less each year than those of college graduates.

Policy Implications and Recommendations

There is no denying the fact that there is a cost associated with remedial education. However, one must consider the social and economic costs of not providing remediation. Without the option for remediation, underprepared students entering or re-entering college are less likely to persist and to graduate (Bettinger & Long, 2005). Low educational attainment helps to perpetuate a cycle of low achievement, low wages, and poor life outcomes. According

to the Bureau of Labor Statistics, of the 30 fastest growing occupations, 22 require some sort of post-secondary education and one half require a bachelor's degree or above (US Department of Labor, 2007). A report from The Institute for Higher Education Policy (1998b) summarizes four types of benefits of going to college: private economic benefits, private social benefits, public economic benefits, and public social benefits. Going to college results in greater benefits to the public as a whole- increased tax revenues, greater productivity, reduced crime rates, increased quality of civic life (Merisotis & Phipps, 2000).

I agree with Merisotis and Phipps (2000) when they say that the evidence is compelling, and one must conclude that remediation in colleges and universities is consistent with the mission of the institution, and represents a core function of the higher education community. The costs associated with remediation are minimal, and attempts to eliminate remediation from higher education are unrealistic and unwise public policy. However, this does not mean that the system is perfect and without room for improvement. There are a number of things that can be done to improve the effectiveness and efficiency of remedial education, and to reduce the costs:

- Change the name from "remedial" to something more neutral to eliminate the stigma associated with remediation.
- Develop a standard definition of "underprepared" so that the term "remedial" has a consistent meaning across all institutions. In conjunction with the RTT-ELC grant competition which focuses on improving early learning and development programs for young children- defining "underprepared" should be addressed.

- Raise high school standards and requirements for graduation so that they are consistent with what is needed to be successful in college. The adoption of the Common Core State Standards will enable students to be confident that their K-12 education will lead to college, skills training or the workplace.
- Carry out diagnostic testing in high school to alert students to their deficiencies. Under NCLB states are required to test children in reading and math every year in grades 3-8. States should also be required to tests high school juniors to determine if they will be ready to handle college level material.
- Reduce the need for remediation in Higher Education by: 1. Align high school requirements with college content and competency expectation, 2.Early intervention and financial aid programs, 3. Student tracking and high school feedback systems, 4. Improved teacher preparation, 5. Offering more college-preparatory courses (AP)-rigorous high school curriculum is a strong predictor of college readiness.
- Improving the effectiveness of remediation in Higher Education by: 1. A collaborative effort among colleges and universities in a system or state, 2. Making remediation a comprehensive program- best practices, 3.utilizing technology.
- Statewide performance standards for college admission would enable educators to assess student progress toward readiness for college.
- Changing admissions and enrollment policies.
- Early outreach to provide motivational and learning opportunities to high-risk students.
- Summer bridge programs

- Articulation between high school and college faculty- K-16 curriculum.
- Professional development for K-12 personnel.
- Resource sharing among high schools and colleges.

References

ACT. (2006). *Reading between the lines: What the ACT reveals about college readiness in reading*. Iowa City, IA: Author.

Adelman, C.(Oct. 1996). The truth about remedial work: It's more complex than windy rhetoric and simple solutions suggest. *The Chronicle of Higher Education.*

Adelman, C. (June 1999). Answers in the Tool Box: Academic Intensity Attendance Patterns and Bachelor's Degree Attainment. Washington, D.C.: *U.S. Department of Education*.

Astin, A.W. (Summer 1998). Remedial education and civic responsibility. *National Crosstalk, 6*(3), 12-13.The National Center for Public Policy and Higher Education.

Attewell, P., Lavin, D. Domina, T., & Levey, T. (2006). New evidence on college remediation. *Journal of Higher Education, 77*, 886-924.

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.

Berkner, L.,& Choy, S. (2008). *Descriptive summary of 2003-04 beginning postsecondary Students: Three years later* (No. NCES 2008-174). Washington, D.C. National Center

for Education Statistics.

Bettinger, E., & Long, B.T. (2004). *Shape up or ship out: The effects of remediation on students At four-year colleges* (No. 10369). Cambridge MA: National Bureau of Economic Research.

Bettinger, E., & Long, B.T. (2005). *Addressing the needs of under-prepared students in higher Education: Does college remediation work?* (No. 11325). Cambridge, MA: National Bureau of Economic research.

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

Breneman, D.W., & Haarlow, W.N. (1998). Remedial education: costs and consequences, *Remediation in higher education: A symposium*. Washington, D.C: Thomas B. Fordham Institute.

Brubacher, J.S., & Rudy,W. (1976). *Higher Education in Transition (3rd Ed.)*. New York: Harper & Row.

Calcagno, J., & Long, B. (2008, April). *The impact of postsecondary remediation using a Regression discontinuity approach: Addressing endogenous sorting and noncompliance*.

New York: National Center for Postsecondary Research.

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.

Foderaro, Lisa W., (2011, March). CUNY adjusts amid tide of remedial students. *The New York Times.* Retrieved from http://select.nytimes.com. March 4, 2011.

Greene, J., & Winters, M. (2005). *Public high school graduation and college-readiness rates*: *1991-2002*. New York: Manhattan Institute.

Greene, J., & Winters, M. (2006). *Leaving boys behind: Public high school graduation rates*. New York: Manhattan Institute.

Jenkins, D., & Boswell, K. (2002). *State policies on community college remedial education*: *Findings from a national survey*. Denver, CO: Education Commission of the States.

McCabe, R.H. (2000). *No one to waste: A report to public decision-makers and community college leaders*. Washington, DC: Community College Press.

Merisotis, J.P., & Phipps, R.A. (2000). Remedial education in colleges and universities: What's really going on? *Review of Higher Education, 24*, 67-85.

National Center for Education Statistics [NCES](2004). *The condition of education 2004, indicator 18: Remediation and degree completion*. Washington, DC: U.S. Department of Education.

National Center for Education Statistics [NCES] (2011). The condition of education 2011, Indicator 22: Remedial coursetaking. Washington, DC: UY.S. Department of Education.

Obama, B.(2009). The American Graduation Initiative. Speech given at Macomb Community College. Retrieved from http://www.whitehouse.gov/blog/Investing-in-Education

Phipps, R.(1998). *College remediation: What it is, what it costs, what's at stake*. Washington, D.C.: Institute for Higher Education Policy.

Rudolph, F.(1990). *The American College and University: A History*. Athens, GA: The University of Georgia Press.

Saxon, D.P. & Boylan, H.R. (1999). Perceptions as reflected in print media reporting. Unpublished manuscript prepared for the League for Innovation in the Community College, Mission Viejo, CA.

Shaw, K.M. (1997). Remedial education as ideological battleground: Emerging remedial education policies in the community college. *Educational Evaluation and Policy*

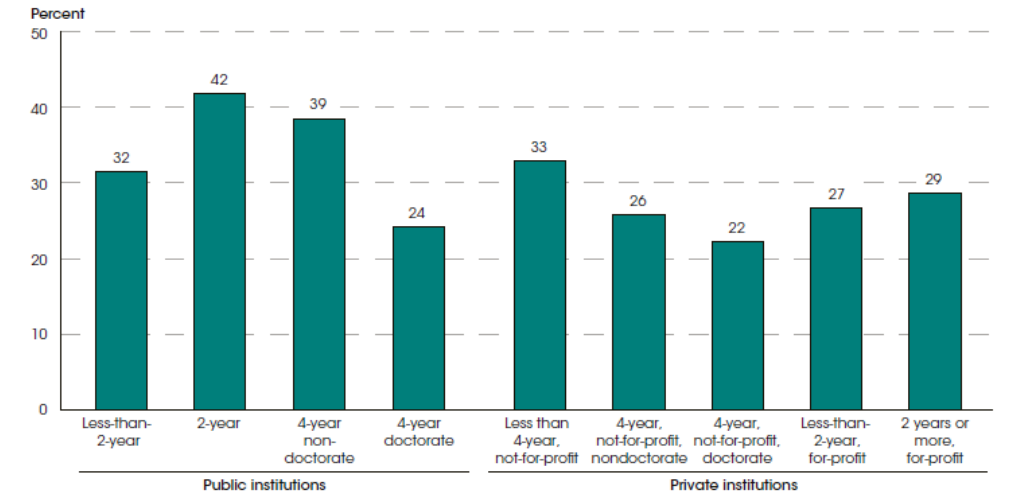
Analysis, 19, 284-296.

US Department of Labor. (2007). *2008-2009 editions of the occupational outlook handbook and the career guide to industries available on the internet*. Washington, DC: Bureau of Labor Statistics.

Winerip, M. (2011 October). In college, working hard to learn high school material. *The New York Times*. Retrieved from http://select.nytimes.com. October 23, 2011.

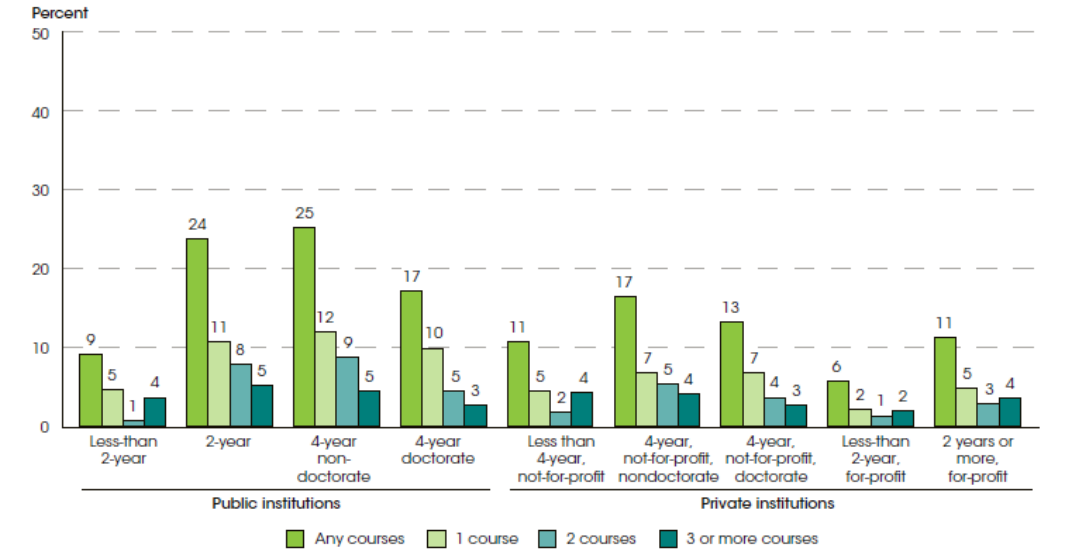
Figure 1

Figure 22-1. Percentage of first-year undergraduate students who ever took a remedial education course, by institution control and level: 2007–08



NOTE: Although these data are for first-year undergraduates, student status was determined by accumulation of credits. Students attending postsecondary education part time, or not completing the credit accumulation requirements for second-year status, could be considered first-year students for more than 1 year. Therefore, there is a distinction between having "ever" taken a remedial course and having taken one in 2007–08. Data are based on a sample survey of students who enrolled at any time during the school year. Data include the 50 states, the District of Columbia, and Puerto Rico.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).

Figure 22-2. Percentage of first-year undergraduate students who took remedial education courses, by institution control, level, and number of courses: 2007–08



NOTE: Although these data are for first-year undergraduates, student status was determined by accumulation of credits. Students attending postsecondary education part time, or not completing the credit accumulation requirements for second-year status, could be considered first-year students for more than 1 year. Therefore, there is a distinction between having "ever" taken a remedial course and having taken one in 2007–08. Data are based on a sample survey of students who enrolled at any time during the school year. Data include the 50 states, the District of Columbia, and Puerto Rico.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 2007–08 National Postsecondary Student Aid Study (NPSAS:08).