

Diploma

TO

ANYWHERE

STRONG  
AMERICAN  
SCHOOLS



# Executive Summary

A HOAX IS BEING PLAYED ON AMERICA. THE PUBLIC BELIEVES THAT A HIGH SCHOOL DIPLOMA SHOWS THAT A STUDENT IS READY FOR COLLEGE-LEVEL ACADEMICS. PARENTS BELIEVE IT TOO. SO DO STUDENTS.

**B**ut when high school graduates enroll in college as many as one million students fail placement exams every year. Well over one third of all college students need remedial courses in order to acquire basic academic skills.

In many ways, the problem is the American high school. It profoundly fails to prepare students for postsecondary work. A high school degree no longer demonstrates that a graduate is ready for college. Students' inadequate preparation for higher education has become a deep and widespread problem. Some of the nation's most selective universities—like the University of Wisconsin, Madison—now test all incoming students in order to determine who needs extra academic help. Ivy League universities like Dartmouth College offer year-long remedial courses in writing. Graduates from prestigious secondary schools in Scarsdale, New York and Winnetka, Illinois struggle with university-level academics. Even the students who did everything right in high school—the advanced classes, the good grades—require extensive college remediation.

This report provides an unprecedented look at the problem of college remediation, with a detailed analysis of the issue as well as a groundbreaking examination of its cost. The report also includes a new nationally representative survey of 688 students in college remediation. Overall, we found:

- **Cost.** A conservative estimate of the cost of remediation in public colleges exceeds \$2 billion dollars. We calculated the total cost

	Number of remedial students	Cost of remediation assuming 2.0 remedial courses
Public two-year	995,077	\$1.88–\$2.35 billion
Public four-year	310,403	\$435–\$543 million
Total	1,305,480	\$2.31–\$2.89 billion

of remediation per student to be between \$1,607 and \$2,008 for public two-year institutions and between \$2,025 and \$2,531 for public four-year institutions in school year 2004-5. We also calculated the total cost to students and families and estimated that they paid \$708 to \$886 million in remedial education tuition and fees.

- **Scope.** The extent of college remediation is far greater than previously believed.

A conservative analysis of the data on college students in 2004 shows that:

- Forty-three percent of all students at public two-year institutions have enrolled in a remedial course.
- Twenty-nine percent of all students at public four-year institutions have enrolled in a remedial class.

At many colleges, most students arrive without proper preparation:

- More than 80 percent of students in Oklahoma's community college system are enrolled in a remedial course.
- Of the 40,000 freshmen admitted each year into California State University—the largest university system in the country—more than 60 percent need help in English, math, or both.
- Seventy percent of students in Indiana's community colleges needed remediation in 2005.

The students who enroll in remedial education include some of the nation's most motivated students. Our 2008 survey of remedial students found that:

- Nearly four out of five remedial students had a high school grade point average of 3.0 or higher.
- More than half described themselves as good students who worked hard and nearly always completed high school assignments.

Few college remedial students found their high school courses to be particularly challenging:

- Fifty-nine percent of remedial education students report that their high school classes were easy.
- Nearly half would have preferred that their high school classes had been harder so that they would have been better prepared for college.

- **Impact.** College remediation often comes at the greatest cost to the students themselves, and students who enroll in remedial classes are far more likely to drop out than those who do not. Of the students in the class of 1992 who took three or four remedial courses in college, only 19 percent received a bachelor's degree by 2000.

States could do a lot more to improve student preparation for college. Educators at all levels need to **collect better data** and start publicly reporting the percentage of students receiving remediation and the percentage of high schoolers who are unprepared for university-level work. At the same time, **high schools must bolster academic expectations and improve outcomes.** Most remedial students say that high school classes were boring, that they were not challenged enough by their teachers. States should also work to **create a more interconnected K-16 system** with common goals and standards, while **colleges must do more to support remedial students** and make sure these students eventually receive a college diploma.

Some school systems have been working on such initiatives. More than two dozen states now require high school exit exams that students must pass in order to receive a diploma. Others have been working on aligning standards and strengthening accountability. But it has not been enough—and the stakes are too high to wait any longer. Our nation's economic security depends on a strong pool of college-educated graduates. Students need a college diploma in order to succeed in life and the global world of work. Our country cannot afford a high school diploma that shows little and does nothing.

# Diploma TO NOWHERE

## Introduction

One of the most important goals of the modern American high school is to prepare students for college. In the knowledge-based economy of the 21<sup>st</sup> century, students need a postsecondary degree. Our increasingly complex society—and the global workplace—demand students who have a full-range of intellectual skills and knowledge. But our nation's schools are not doing enough to prepare students for the challenges of higher education or a modern career. Each year, hundreds of thousands of high school graduates fail college placement exams. At many institutions, *most* of the students who enroll lack basic math and English skills.

The problem goes back more than a century, and for decades few educators believed that high schools should ready all students for university-level work. One of the nation's first school-reform commissions, the Committee of Ten, famously declared in 1893 that high schools “do not exist for the purpose of preparing boys and girls for

college.”<sup>1</sup> For years, most high school graduates did not go on to higher education. They received a diploma and then landed a factory job or a career in sales. Until the 1980s, barely half of all of those who graduated from high school enrolled in higher education.<sup>2</sup> But since then, the world of work, the nation's economy, and modern society have been transformed by a massive wave of technological and economic change, and our country's future now requires its students to have far more rigorous knowledge and skills.

Yet the nation's education system has not aligned itself to the new realities of work and society. Most high schools don't prepare students for the rigors of university-level work. In fact, there's barely any academic connection between high schools and universities, and the standards for high school graduation are not linked to the standards for college. Students don't know what universities

expect of them. Teachers aren't sure what exactly constitutes college readiness. Even in the 22 states where students have to pass an exit exam in order to graduate, few of the



tests are pegged to university-level expectations. Some of the exams don't even require students to meet a 10th grade standard.<sup>3</sup>

College remediation isn't just a problem of urban high schools, aging cities, and lower tax rates. This is an issue that affects middle-class students from middle America with middling academic skills. In many ways, our education system has been perpetrating a terrible fraud, because the high school

graduates who require college remediation are often the ones who did everything that was expected of them. They went to good schools, they posted high GPAs, they took difficult classes. Teachers and parents told them that they would do well in college. But when these students enrolled at their local flagship university or near-by community college, they failed the math placement test. They were shunted into remedial reading.

College remediation is one of the most serious education issues facing our country, and policymakers and educators must address it immediately. Our economy, our security, and our government, all depend on a steady supply of college-educated graduates. In a few states, in some institutions, there are initiatives underway to ensure that high school graduates have the skills necessary to succeed in college. But solving the problem will require



titanic effort. Without a concentrated political push, the issue will continue to plague our schools. Until the need for remediation no longer exists, there cannot be too much said or too much done about the problem of students not being prepared for college.

### The High School Story

Student readiness for college starts well before high school. In many ways, it begins in kindergarten when students are just five or six years old. That's when students first begin to engage with the academic material that will eventually prepare them for higher education. But kindergarten is also typically the start of a muddled trip through an education system of mediocre value and meager expectations. Academic achievement in elementary schools is low, with barely 40 percent of 4th graders scoring at or above proficient in mathematics on the 2007 National Assessment

of Educational Progress (NAEP).<sup>4</sup> Only 41 percent of 8th graders in 2005 enrolled in gateway classes such as Algebra.<sup>5</sup> High school graduation rates hover around 70 percent.<sup>6</sup>

High schools bear the biggest burden in preparing students for college. This is, after all, one of their core missions: ready students for postsecondary academic work. But high schools are not giving students the knowledge and skills they need to succeed in college. According to the most recent NAEP, barely one quarter of high school seniors are proficient in math. Almost half of all seniors failed to demonstrate basic skills in science. More than a quarter lack basic reading skills.<sup>7</sup> A recent Manhattan Institute study estimated that only a third of all students in the class of 2002 finished high schools with the minimum qualifications for a four-year degree.<sup>8</sup>

College admissions exams show similarly basement-dwelling scores. Only 43 percent of the high school juniors and seniors who took the ACT college entrance exam in 2007 met the mathematics benchmark of college readiness.<sup>9</sup> Of the students who enrolled in college in 2003, those with SAT scores below 1000 were twice as likely to require remediation as those with scores above 1000.<sup>10</sup>

In addition, high school students who took weaker course loads also typically need more remediation. When students from the high school class of 1992 were ranked by the intensity of their academic courses, more than two-thirds of those in the bottom quintile needed college remediation.<sup>11</sup> Students

with a fourth year of math were two-thirds less likely to need remedial courses than those who took three. A high schooler whose highest math course was Algebra 2 was more than twice as likely to need remediation as a student who went through Calculus.<sup>12</sup>

But what is most surprising—and what should cause our nation's leadership a great deal of concern—is that even the most motivated high schoolers found themselves unprepared for university-level academics. Our



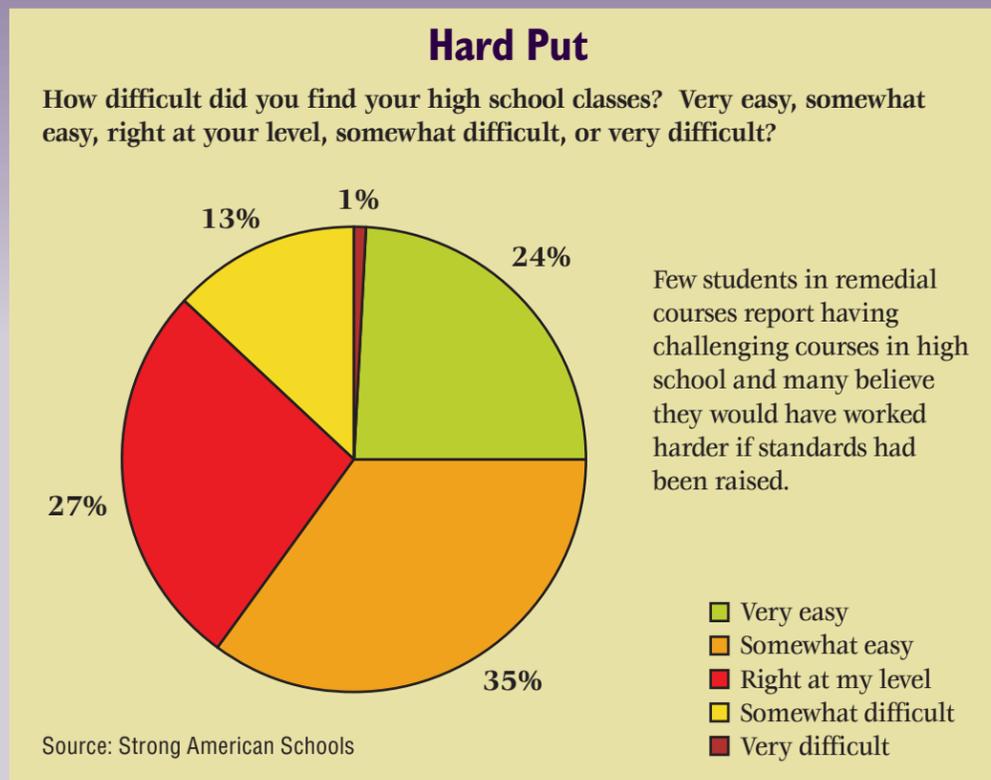
student-opinion poll conducted in the spring of 2008 found that 95 percent of students in remedial courses reported doing all or most of the work that was asked of them in high school. Nearly 80 percent of the students thought that they were ready for college when

they graduated from high school. Most of the students said that they had taken the most challenging courses offered by their high school. Yet once they got to college, the students needed academic help. It seems, in short, that even the most advanced classes offered by their high school were not enough to prepare them for college.

Part of the problem is that high school is not rigorous enough. Educators don't demand enough from our students. They often give high marks to mediocre work. Our poll found that most students in college remediation earned As and Bs in high school, with nearly four out of five students listing a grade point average of 3.0 or higher. Almost 60 percent of the students in our survey said that their high school classes were easy. Half said they were bored most or almost all of the time.

Students want more demanding coursework. After enrolling in college, they understand that there are large gaps in their knowledge and skills, and nearly half would have preferred that their high school classes had been more difficult in order to better prepare them for university-level academics. Another 80 percent said that they would have worked harder if their high school had set higher expectations. Fifty-one percent said they feel strongly about this.

There is a severe disconnect between the knowledge and skills that students learn in high school and the knowledge and skills they need to succeed in college. Only 14



percent of remedial students said that their high school prepared them extremely well for college. Many remedial students also reported that their high school did not do a good job of letting them know what skills they would need to do well in college. Nearly four in 10 students said their schools did a poor or fair job of helping them understand what level of academics were necessary to succeed in postsecondary education. In sum, the survey and remediation data unequivocally point the finger at high schools.

### The Scope of the Problem

The best measure of student readiness for college is not the percentage of high school graduates who obtain admission. Most community colleges admit every student who applies, and more than 80 percent of freshmen attend universities that have no or almost no admissions standards.<sup>13</sup> The far better measure is how well high school graduates actually perform in college. Do students pass university-level math and English classes? Do they receive a college diploma? While there is

not much research to answer these questions, the information that is available is painfully stark. At two-year colleges, only a third of students finish within three years. At four-year institutions, just 56 percent of students receive a diploma within six years.<sup>14</sup> Of all the students who started eighth-grade middle school in 1988 only 29 percent eventually received a college degree some 12 years later.<sup>15</sup>

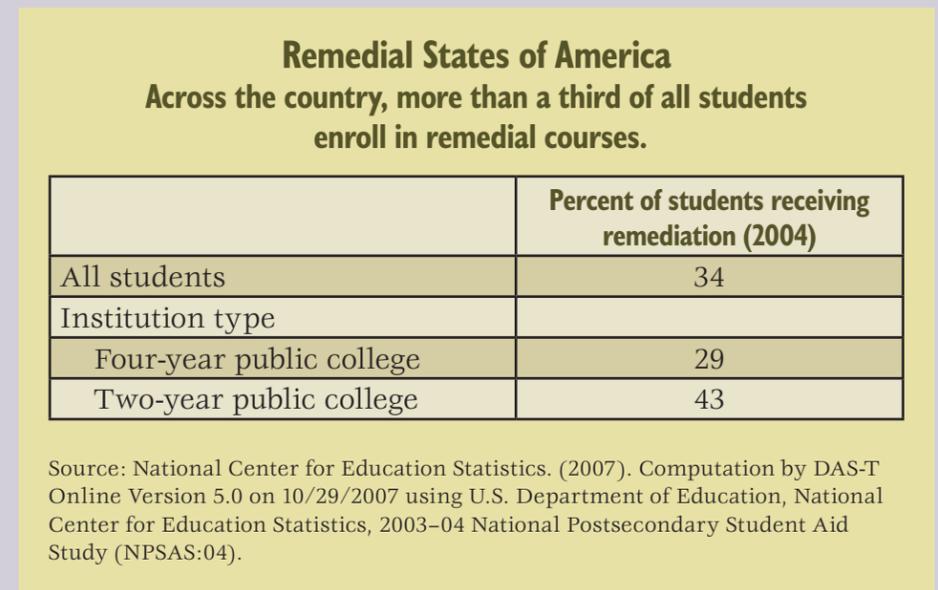
The issue goes back to high school—students arrive on campus without proper preparation. But still, researchers have long struggled with how best to measure the actual college readiness of high schoolers, and there is no commonly accepted definition of student preparedness. Universities have widely different standards as to what constitutes an unready student.

Remediation policies vary too. Some colleges use the ACT to assess incoming students to see if they're prepared for college-level work. Others test freshmen with a locally developed exam. Some students might not even know that they're enrolled in a remedial course because it's called "developmental" or "intermediate."<sup>16</sup>

The most commonly cited estimate of the extent of college remediation comes from a national survey of postsecondary institutions conducted by the U.S. Department of Education in 2000.<sup>17</sup> The survey found that 28 percent of all entering freshmen were enrolled in remedial coursework. The study also found that of the students entering public two-year institutions, 42 percent were enrolled in remedial courses. Of the students entering public four-year colleges, 20 percent required some remedial work. These results have been widely referenced in media and public policy circles. The U.S. Department of Education

uses these rates in many of its publications, including *The Condition of Education*.<sup>18</sup>

But these data significantly understate the extent of the problem, and our analysis of a more recent database shows much larger rates of college remediation. We examined the U.S. Department of Education's 2004 National Postsecondary Student Aid Study (NPSAS) data set and found that 34 percent of all undergraduates reported having once been enrolled in a remedial course.<sup>19</sup> The NPSAS data also showed that 43 percent of those attending public two-year institutions required remediation. Of those students at public four-year institutions, 29 percent needed to enroll in a remedial course.



Yet even these NSPAS data might underestimate the problem. The study did not look at the approximately 1.2 million students who dropped out that year and were most likely not ready for college. Census data from 2007 show that slightly more than two-fifths of Americans age 25 to 29 had never attended college.<sup>20</sup> Nor did the research examine private colleges and universities, or even the regular-credit college courses that involve subject matter that should have been mastered in high school.<sup>21</sup>

Also, the remediation rates in a number of states exceed 40 percent of all entering college students. In 2005, 48 percent of all Maryland high school graduates were assessed as needing remediation.<sup>22</sup> At many colleges across the country, well over half of all students arrive without a proper grounding in academic basics. Of the 40,000 freshmen admitted each year into California State University—the largest university system in the country—more than 60 percent need extra academic help.<sup>23</sup> More than 80 percent of students in Oklahoma's community college system were enrolled in a remedial course in 2007.<sup>24</sup>

College offer year-long remedial writing courses.<sup>25</sup> The problem of college remediation is much larger than previously believed.

### The Cost Of The Problem

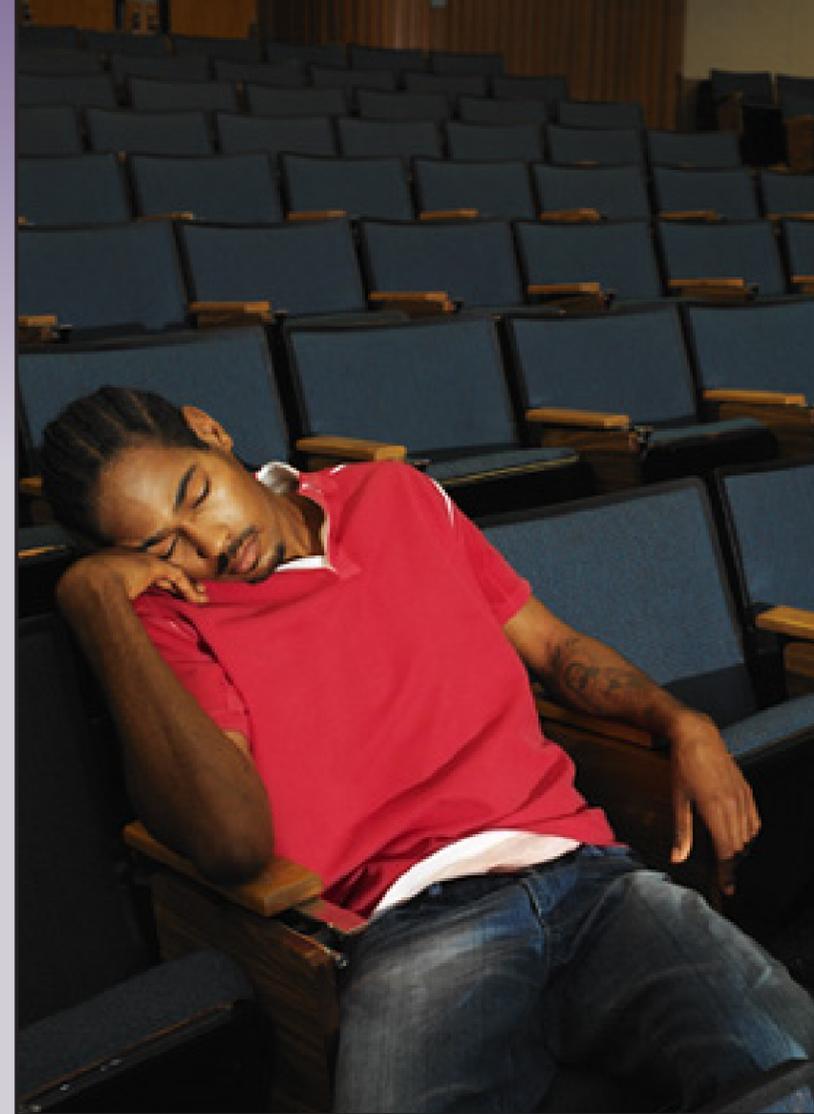
How much does remedial education cost? For the American public, this is a critical question, because when students need college remediation, taxpayers are paying for the same education twice. Indeed, for the taxpayer, the underwriting of remedial education is a lot like buying a car, discovering the transmission is broken within weeks of pulling off of the lot, and then having to pay for the repairs out of pocket. If there were a warranty for a high school diploma, as many as one million college students would be sent back to their high schools each year in order to receive further schooling in academic basics.

Research from the states shows that students' lack of college readiness results in tremendous costs. In 2006, for instance, Ohio spent more than \$100 million on university-level remedial courses. Our analysis of the cost of college remediation is the first to use higher education expenditure data collected by the U.S. Department of Education. The data is the most recent

available, from the 2004–05 academic year.<sup>26</sup> We used a very conservative estimate of the rate of remedial education: 42 percent at public two-year schools and 20 percent at four-year institutions.<sup>27</sup> We also assumed that students take two remedial courses on average. The range in cost calculations results from using two different assumptions: students typically taking 10 courses a year and students typically taking 8 courses a year.<sup>28</sup> All data is for public schools only.

We estimated that the cost of remediation per student is between \$1,607 and \$2,008 for public two-year institutions and between \$2,025 and \$2,531 for public four-year institutions. From these data, we calculated an estimated \$2.31 to \$2.89 billion in total educational costs.

We examined two additional concepts: *estimated price*, what students and families are supposed to pay, and *subsidy*, the difference between what it costs to actually provide the education and student payments. Tuition does not cover the entire cost of education, and what institutions charge for postsecondary education—tuition and fees—is typically less than what it costs to provide that education. To make up the difference, public institutions receive considerable revenue from state appropriations as well as money from other sources including private gifts, investment returns, and auxiliaries such as hospitals. To examine these issues, we first calculated the amount of tuition and fees that go to remedial education. That's the estimated price, or what parents and students are supposed to pay. (In reality, financial aid will reduce that cost.) Then we calculated the subsidy by subtracting the estimated price from the total educational cost of remediation.



We estimated that the subsidy for remediation per student is between \$1,168 and \$1,460 at public two year institutions and between \$1,116 and \$1,395 for public four year colleges. From these data, we calculate that the additional cost in tuition and fees to students and families is roughly \$708 to \$886 million. We project the subsidy for remedial education to be \$1.61 to \$2.01 billion.

There were many costs that this type

of analysis did not consider. Most notably, we did not attempt to estimate the lost tax revenue resulting from poorly prepared students who either take longer to complete a degree or who do not complete one at all. Nor did we estimate the costs for students in private colleges and universities. Even so, a conservative estimate on the total cost of remedial education is between \$2.31 and \$2.89 billion. That's a massive amount of money, more than the amount that Nebraska spends each year on their K-12 schools.<sup>29</sup>

### The Impact on Students

Remedial education carries deep and hidden costs. Students have to retake courses that cover material they should have learned in high school, and they lose academic

### The High Cost of Remedial Education

	Number of Students in Remediation	Cost of Remediation
Public two-year	995,077	\$1.88–\$2.35 billion
Public four-year	310,403	\$435–\$543 million
Total	1,305,480	\$2.31–\$2.89 billion

### Sources of Remedial Education Funding

	Tuition and Fees	Subsidies*
Public two-year	\$513–\$642 million	\$1.37–\$1.71 billion
Public four-year	\$195–\$244 million	\$239–\$299 million
Total	\$708–\$886 million	\$1.61–\$2.01 billion

\*Subsidies include revenue from state appropriations as well as revenues from other sources including private gifts and investment returns.

A few things are clear. The college remediation rates are well over one third of all undergraduates and more than a quarter of students at four-year public colleges. The issue is deep and pervasive and includes students who graduated from the most prestigious high schools and enroll in top universities. The University of Wisconsin, Madison and the University of Michigan, Ann Arbor test all incoming students to see if they are college ready. Ivy League universities like Dartmouth

## Remedial Inequities

Minority and disadvantaged students are more likely to need remediation.

	Percent of students receiving remediation (2004)
<b>Race-ethnicity</b>	
White, non-Hispanic	31
Black, non-Hispanic	42
Hispanic	41
Asian	36
American Indian	41
<b>Income levels*</b>	
Low	37
Middle	35
High	31
<b>Parents' education</b>	
High school diploma or less	39
Some postsecondary	36
Bachelor's degree or higher	29

\* Income levels were defined by quartiles. Low was the bottom quartile, middle was the two middle quartiles, and high was the highest quartile.

Source: National Center for Education Statistics. (2007). Computation by DAS-T Online Version 5.0 on 10/29/2007 using U.S. Department of Education, National Center for Education Statistics, 2003-04 National Postsecondary Student Aid Study (NPSAS:04).

momentum. They feel frustrated that they weren't prepared for university-level work. According to our poll of remedial students, almost all of the students believed they were ready for college, and after learning that they needed remediation, they expressed anger, surprise, and embarrassment. Given a list of possible words to express their emotions at learning that they would have to take remedial classes, nearly two-thirds selected a negative emotion. Thirty-seven percent report that they were "frustrated," and substantial numbers recall that they were "surprised" (21 percent), "embarrassed" (18 percent), and "angry" (12 percent).

Little is fair about remedial education. According to our student-opinion survey, 64 percent of students enrolled in remedial education had to take more than one remedial course. And students from low-income families are more likely to take remedial courses than students from high-income families. African American, Native American, and Hispanic students are also more likely to take remedial courses than white students. And first-generation college students are also more likely to need remediation.

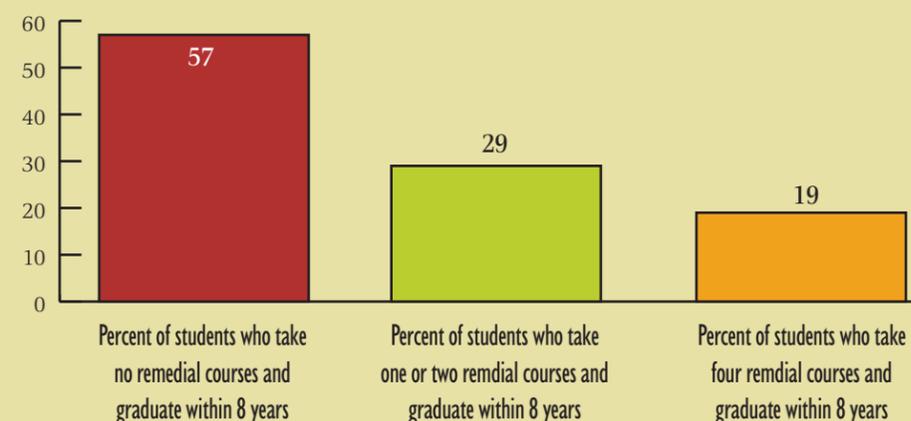
But perhaps the most worrisome thing about remedial education is that students who enroll in these classes are much more likely to drop out. Of students from the high school class of 1992 who enrolled in college and took no remedial education courses, 57 percent earned a bachelor's degree within eight years. Of the students who enrolled in

one or two remedial courses, only 29 percent graduated with a bachelor's degree, and of those who took three or four remedial courses, just 19 percent received a bachelor's.<sup>30</sup>

While more students take remedial math, a student's need for remedial reading makes him or her much more likely to drop out. Some experts refer to college remedial reading as the educational kiss of death. One study found that of the students who took remedial reading, more than two thirds were in three or more other remedial courses and only 12 percent eventually earned a bachelor's degree.<sup>31</sup> For the students in remedial reading, the issue is unfortunately simple—if you

## Degrees of Remediation

Students who take more remedial classes are less likely to obtain a college degree



Source: National Center for Education Statistics. (2007). Computation by DAS-T Online Version 5.0 on 11/28/2007 using U.S. Department of Education National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88/2000) with postsecondary and high school transcript weight.

can't read well, you can't perform well in any other college classes. Without basic literacy, students are stuck without a collegiate future.

### Recommendations

It's easy to recognize college remediation as a problem. What's harder is solving the issue. But educators control the levers of academic success. They can improve student readiness for college. Schools and districts can implement broad reforms that boost overall student achievement. Educators can raise standards and make sure that all students receive a solid grounding in English and math. Schools can place an effective teacher in every classroom and reward better instruction with better pay. Districts can also give schools more time for teaching and learning and help struggling students get the extra attention they deserve. These reforms are all gaining momentum and are deeply rooted within the education research.

We also make several recommendations specific to the problem of college readiness:

**Collect more data.** States, schools, and colleges need to gather far more data on remediation. This is critical—perhaps the very first step—because if educators don't know the extent of the problem, it will be nearly impossible to solve the issue or even determine whether progress is being made. At the very least, states should report two indicators: the percentage of students receiving college remediation and the percentage of high school students who are prepared for university-level work.

Why both indicators? Since not all high school graduates enroll in postsecondary education, it is important to track the college readiness of all students leaving high school. What students need to know in order to be ready for college is not different from what they need to know in order to be ready for the workforce; in the knowledge-based economy of the 21<sup>st</sup> century, college readiness is workforce readiness.<sup>32</sup> And even students who graduate from high school and become carpenters or restaurant managers still need to know how to compute an algebraic equation and be fluent in English composition.

But data on college remediation needs to go far beyond the basics. Simply collecting data on participants' race and poverty status is not enough. Colleges should have a full understanding of the academic needs of first-year students well before they arrive on campus. Policymakers also need to know more about who teaches remedial courses at the postsecondary level and what professional development they might need

in order to prepare them for the challenge of teaching these courses. Higher education institutions should also be sure to look at other indicators of college readiness, including ACT data, Advanced Placement scores, and first-year course failures.

Some have already taken strong action. A few states have developed reliable methods of estimating the costs of remedial education, and a multi-state, multi-institutional effort is underway through the National Study of Instructional Costs and Productivity that might soon provide a cost estimate of remediation for all 50 states. Others have improved their data-collection efforts. Missouri, for instance, has

established a statewide consortium to collect information on key indicators of remediation, including the graduation and persistence rates of remedial students.<sup>33</sup> Kentucky has published the percentage of under prepared high school graduates in every district of the state in order to give educators and the public a better sense of the extent of the problem.<sup>34</sup>

National organizations have also gotten involved, most notably the Data Quality Campaign (DQC), which supports the development of longitudinal data systems for the purpose of improving student achievement. With funds from the Bill and Melinda Gates Foundation, the Casey Family Programs, and the Lumina Foundation for Education, DQC has developed model state policies on college readiness. The group recommends that states collect student data on college admissions, placement, and readiness tests and use a unique statewide student identifier, making it possible to follow students over time. According to a DQC 2007 survey, 15 states now collect data on college readiness test scores.<sup>35</sup>

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**Improve high school standards and instruction.** Students should not need remediation in college. They need remediation in high school before they enroll in college. Prior to receiving a diploma, high school students should be prepared for the rigors of university-level academics. If students are not ready, they should be targeted with direct and focused

instruction. The programs should be engaging and forceful and hold students to high standards. The quality of the instruction makes a significant difference, and a large majority of students rate their college remedial courses as much better than the high school courses they took in the same subject. The most important reasons for regarding these courses as better include better instructors (57 percent) and material more focused on what is needed in college (49 percent). High school academic programs explicitly aligned with college expectations appear to be particularly effective at lowering postsecondary remediation rates. Of the students who enrolled in college in 2003, the students who took Advanced Placement courses in high school were more than a third less likely to need remediation than those who did not.<sup>36</sup>

Some states, like Texas, have attempted to address this issue by developing college readiness standards that set out what students should know and be able to do by the time they graduate from high school. The standards specify skills and knowledge in math, English, and science and are set to high standards.<sup>37</sup> Other states, like Florida, require community colleges and school districts to develop annual agreements in order to improve the quality of high school instruction and reduce college remediation in math, reading, and writing.<sup>38</sup>

**Boost accountability.** If the K-16 education system is a pipeline, it is one riddled with gaping leaks and shattered conduits. In most states, there is not an easy progression from one level of education to the next. End-of-course exams are not aligned with curriculum standards. College admissions policies vary from institution to institution. The education system is chaotic and piecemeal and significantly hinders college readiness. Nearly 40 percent of the remedial students in our survey rated their high schools as fair



or poor on how well they helped students understand what they would need to know in order to perform successfully in college.

Educators, parents, business leaders, and policymakers should work to create a smoother, more interconnected K-16 system. There need to be common goals and definitions of success. Students and schools need to be held accountable for their performance. The collective objective must be getting all students ready for college. Some institutions have been working on this problem, and 22 states now require high school exit exams that students need to pass in order to graduate. The exams assess the mastery of the state curriculum and measure students against a common standard. But more could be done to align these tests with postsecondary expectations, and according to one recent study, only six states use the exams to determine readiness for higher education.<sup>39</sup>



Some states have also been working to align standards and build common academic expectations. Indiana, for example, developed a set of courses called the Core 40 that specifically prepares students for college, and by fall 2011, all public colleges in the state will require incoming students to have passed the Core 40 or a documented equivalent. To encourage students to enroll in the voluntary curriculum, the state allows students who complete a Core 40 diploma to receive a



waiver of up to 90 percent of tuition and fees at state colleges. The Core 40 program also makes it easier for students to take college courses while still in high school.<sup>40</sup>

National and regional organizations have also been trying to improve the K-16 system. Spearheaded by Achieve, Inc., the American Diploma Project comprises 33 states that are working to improve their high school standards and assessments and boost college readiness. In a 2008 survey, the organization found that 19 states have

aligned their high school standards with postsecondary expectations. Eighteen states and the District of Columbia have now aligned their high school graduation requirements to college expectations. Still, states could do more, and only four states hold high schools accountable for the college readiness of their graduates and offer incentives for improving college-readiness rates.<sup>41</sup>

**Enhance remediation.** While the K-12 system focuses on reforms, university educators can't ignore the hundreds of thousands of students who enroll in college each year without adequate preparation. These students have already been betrayed once, and colleges could do much more to help them. The problem is not a lack of money, but one of prioritization. While more than a third of all college students require remediation, higher education spending on low-performing students represents only about two percent of all expenditures. In fact, many universities earn a profit on remedial classes. Students typically pay to enroll in remedial courses, just as they would in any other college course, and researchers have cited

several studies that indicate that colleges generate revenue from the classes.<sup>42</sup>

Whatever the financial situation, colleges and universities should offer more support. Currently, students who enroll in remedial classes are far more likely to drop out than those who do not, and although there isn't much research on the effectiveness of various approaches to remediation, there are many small institutional efforts that hold great promise. The University of the District of Columbia, an open admissions



institution, recently selected 17 students out of 43 applicants to participate in a summer math "boot camp." Those selected were considered to be the most academically disadvantaged. As a result of an intensive, eight-week program, nine students tested out of both remedial math courses and five others tested out of basic remedial math. One student dropped out, but the remaining two students also made considerable progress.<sup>43</sup>

### Conclusion

When it comes to college readiness, the stakes could not be higher. Students need a university degree in order to succeed in modern society and the global economy. Our nation's economic security relies on a well-educated, well-prepared workforce. In 2003, the average worker with a four-year college degree earned more than 62 percent more than a worker with only a high school diploma.<sup>44</sup> Between 2004 and 2014, more than half of all new job openings will require at least some college, and a quarter of the new positions demand a bachelor's degree or higher.<sup>45</sup> Even students who do not go on to college benefit from increased college readiness. One recent study found that for each percentage-point

jump in the proportion of the population that has a four-year degree, the income of dropouts goes up 1.9 percent. High school graduates' income goes up 1.6 percent.<sup>46</sup>

While some initiatives are underway to address parts of the problem, a massive effort is needed to affect any real change. Federal and state governments as well as education associations, foundations, and businesses need to work together, pooling ideas as well as financial and human resources. While reforms must occur as quickly as possible, solving a problem this large will require patience. College readiness starts in kindergarten. Efforts will take time to implement, and the impact might not be fully evident until students graduate from high school. But the reform is real and necessary. For all the data, for all the research, just one student who lands in remediation is one student too many.

### Acknowledgements

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# Appendix A

## Alabama

### Remediation Rates<sup>1</sup>

- 11,734 students assigned to remediation in math at public four- and two-year institutions in 2007.
- 4,204 students assigned to remediation in English at public four- and two-year institutions in 2007.
- 4,750 students assigned to remediation in both math and English at public four- and two-year institutions in 2007.

### Remediation Costs<sup>2</sup>

- \$85 million spent by community colleges, state colleges and universities, and private institutions in 2001–02, including:
  - \$48.4 million at public two-years.
  - \$34.2 million at public four-years.
- Students paid \$14.5 million in tuition and fees to public two- and four-year institutions for remediation in 2001–02, including:
  - \$9.7 million at public two-years.
  - \$4.8 million at public four-years.

1 Alabama Commission on Higher Education. (2008). *Alabama statewide student database: Enrollment summary report*. Retrieved April 3, 2008, from <http://www.ache.alabama.gov/Abstract0708/Student%20Database/TermSum.pdf>

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## Arkansas

### Remediation Costs<sup>1</sup>

- \$48.7 million spent by public two- and four-year institutions on remedial education in 2003-04.
- \$18 million in state general appropriations provided to public two- and four-year institutions for remediation in 2003-04.

1 Arkansas Department of Higher Education. (2004). *2003-04 Arkansas Academic Cost Accounting*. Retrieved February 22, 2008, from <http://www.arkansashighered.com/if/UR/CostAccounting2003-04.pdf>

## California

### Remediation Rates

- There is not a central source for remediation rates across the community college, state college, and university systems.
- Between 50 and 70 percent of more than 2.6 million community college students need remedial math or English.<sup>1</sup>
- More than 60 percent of freshmen admitted to California State University schools each year need remediation in English, math, or both.<sup>2</sup>

### Policies & Initiatives<sup>3</sup>

- There is not a statewide remediation policy covering the community college, state college, and university systems.
- A community college strategic plan for student success and readiness initiatives includes:
  - the development of methods to more effectively assess student preparedness levels and to place students in appropriate courses.
  - the alignment of K-12 and community college standards, curriculum, and assessment processes.

1 Redden, E. (2008, January 29). "Rethinking remedial education." *Inside Higher Ed*. Retrieved February 15, 2008, from <http://www.insidehighered.com/layout/set/print/news/2008/01/29/california>

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## Colorado

### Remediation Rates<sup>1</sup>

- 29.7 percent (8,341 students) of recent high school graduates required remediation in at least one discipline in 2007.
- 54.5 percent (4,392 students) of recent high school graduates in two-year institutions required remediation in at least one subject in 2007.
- 19.8 percent (3,949 students) of recent high school graduates in four-year institutions required remediation in at least one subject in 2007.

### Remediation Costs<sup>1</sup>

- \$11 million spent on remedial education in spring 2006 and fall 2007.

### Policies & Initiatives<sup>1</sup>

- 2000: Colorado Commission on Higher Education adopted remedial policy to ensure:
  - All first-time undergraduates are prepared to succeed in college.
  - Students needing remediation have accurate information about course availability and options to achieve competency.

1 Colorado Commission on Higher Education. (2008). *2007 Legislative Report On Remedial Education*. Denver, CO: Colorado Commission on Higher Education. Retrieved March 1, 2008, from [http://highered.colorado.gov/Publications/Reports/Remedial/FY2007/2007\\_Remedial\\_reljan08.pdf](http://highered.colorado.gov/Publications/Reports/Remedial/FY2007/2007_Remedial_reljan08.pdf)

- High schools are informed of the level of college readiness of their graduates.
- 2003: Policy revised to clarify minimum score for placement in college-level math, specify undergraduate population to be assessed and receive remediation, and clarify when institutions are required to enforce mandatory remediation.
- 2005: Additional revisions were made to remediation policies, including data submission requirements and how institutions should assess non-degree seeking high school graduates.

## Connecticut

### Remediation Rates<sup>1</sup>

During the fall 2005 semester, 8,800 students enrolled in remedial courses in English and 10,800 students enrolled in remedial courses in mathematics.

### Remediation Costs<sup>1</sup>

- \$10.8 million was spent by public two- and four-year institutions on remedial education for the fall 2005 semester.

<sup>1</sup> McQuillan, M & Voss, J. (2007). *The Case For Secondary School Reform In Connecticut*. Retrieved March 13, 2008, from <http://www.sde.ct.gov/sde/lib/sde/powerpointpresentations/Commish/Dec5HSReform.ppt>

## Florida

### Remediation Rates<sup>1</sup>

- During the 2005-06 school year, 122,205 students (about 38 percent of degree-seeking students in the community college system) took college preparatory classes.

### Policies & Initiatives<sup>1</sup>

- The state's community college system and Florida Agricultural and Mechanical University are authorized to provide remedial education courses. Other state universities are not permitted to offer remedial courses except through contracting with community colleges.
- The state administers the Florida College Entry-Level Placement Test to students entering the state public higher education system to assess their college readiness in English, reading, and mathematics.
- The state requires community colleges and school districts to develop annual agreements for reducing the incidence of postsecondary remediation in math, reading, and writing for recent high school graduates.
- The state passed an "A+ +" bill in 2006, which included several initiatives to increase college readiness:
  - Creating the Center for Reading Research at Florida State University.
  - Strengthening requirements for promotion from middle school.
  - Encouraging the establishment of career and professional academies.
  - Expanding professional developmental programs for teachers and principals.
  - Aligning professional development standards with regional and national model frameworks.
  - Authorizing district school boards to require low-performing students to attend remediation programs.
- Four Florida institutions (Broward, Hillsborough, Tallahassee, and Valencia) participate in Achieving the Dream, a nationally funded project designed to the increase postsecondary success of low-income and minority students.

<sup>1</sup> Florida Department of Education. (2007). *College Preparatory and Remediation*. Retrieved August 15, 2008, from <http://www.opaga.state.fl.us/profiles/2065/>

## Georgia

### Remediation Rates<sup>1</sup>

- 18.7 percent (6,902 students) of first-time freshmen required placement in learning-support courses system-wide in 2007.
- 51.9 percent (3,031 students) of first-time freshmen in two-year colleges required learning support in 2007.

<sup>1</sup> Board of Regents of the University System of Georgia, Office of Research and Policy Analysis. (2007). *University System Of Georgia Learning Support Requirements For First-Time Freshmen, Fall 2007*. Retrieved August 15, 2008, from [http://www.usg.edu/research/students/lr/lr-reqs/lr\\_fall07.pdf](http://www.usg.edu/research/students/lr/lr-reqs/lr_fall07.pdf)

## Idaho

### Remediation Rates<sup>1</sup>

- 21,075 hours (2.1 percent of total credit hours) of course work labeled as remedial in four-year institutions.
- 24,960 credit-hours (9.4 percent of total) labeled as remedial in two-year institutions in 2003-04.

<sup>1</sup> Idaho State Board of Education. (2004). *Idaho State Board of Education Fact Book, December 2004*. Retrieved April 7, 2008, from [http://www.boardofed.idaho.gov/ChangingDirection/Documents/SBOE\\_FactBookDec2004.pdf](http://www.boardofed.idaho.gov/ChangingDirection/Documents/SBOE_FactBookDec2004.pdf)

## Illinois

### Remediation Rates<sup>1</sup>

- 119,531 students (11.3 percent of total headcount) assigned to remediation in at least one subject at four- and two-year institutions (includes independent institutions) in 2004-2005.
  - 102,566 students (14.7 percent of total headcount) at community colleges assigned to remediation.
  - 7,593 students (4.5 percent of total headcount) at public universities assigned to remediation.

### Remediation Costs<sup>2</sup>

- \$45.2 million provided in state appropriations in 2005-06 for remedial instruction, representing less than 1 percent of all appropriations for instructional programs.

<sup>1</sup> Illinois Board of Higher Education. (2006). *Preliminary Fall 2006 Enrollments in Illinois Higher Education*. Retrieved February 1, 2008, from <http://www.ibhe.org/Board/agendas/2006/December/ItemII-2.pdf>

<sup>2</sup> Illinois Board of Higher Education (2007). *Annual Report on Public University Revenues and Expenditures: Fiscal Year 2007*. Retrieved February 1, 2008, from <http://www.ibhe.org/Fiscal%20Affairs/PDF/FY07PublicRevExpRpt.pdf>

## Indiana

### Remediation Rates<sup>1</sup>

College students needing remediation during 2004-05:

- 25 percent of all students.
- 70 percent of community college students.

### Policies & Initiatives<sup>2</sup>

- The state's college preparatory curriculum called the Core 40 will become the required high school curriculum in fall 2007. Students entering high school at that time will be expected to complete Core 40 as a graduation requirement. To graduate with less than Core 40, a student must complete a formal opt-out process involving parental consent.
- Indiana students who complete a Core 40 diploma and meet other financial aid and grade requirements can receive up to 90 percent of approved tuition and fees at eligible colleges. Core 40 with Academic Honors graduates can receive up to 100 percent, and some colleges also offer their own scholarships specifically for students who earn this diploma.
- Core 40 is a college admissions requirement: In fall 2011, students will not be able to start at a four-year public Indiana college without Core 40 (or a documented equivalent).

1 Indiana Commission for Higher Education. (2007). *Reaching Higher: Strategic Directions for Higher Education in Indiana*. Retrieved March 1, 2008, from <http://www.che.state.in.us/Policies/Strategic%20Directions%20final%20as%20approved%2006-08-2007%20w%20technical%20corrections.pdf>

Note that the report listed two figures for remediation for four-year schools. We chose the lower, 70 percent.

2 Indiana Department of Education. (2008). *Indiana Core 40*. Retrieved March 1, 2008, from <http://www.doe.in.gov/core40/overview.html>

## Kansas

### Remediation Rates<sup>1</sup>

- Between 2003 and 2006, 29 percent of students tested into remediation in reading.
- Between 2003 and 2006, 40 percent of students tested into remediation in English.
- Between 2003 and 2006, 59 percent of students tested into remediation in mathematics.

1 Kansas Board of Regents. (2007). *Review performance agreements*. Retrieved January 30, 2008, from [http://www.kansasregents.org/download/aca\\_affairs/5th%20Round%20PAs\\_1.pdf](http://www.kansasregents.org/download/aca_affairs/5th%20Round%20PAs_1.pdf)

## Kentucky

### Remediation Rates<sup>1</sup>

- 53 percent of all entering postsecondary students in public four- and two-year institutions with developmental needs in at least one subject in 2004.
  - 44 percent had developmental needs in mathematics.
  - 32 percent had developmental needs in reading.
  - 25 percent had developmental needs in English.

1 Kentucky Council on Postsecondary Education. (2006). *Students Entering College with Developmental Needs*. Retrieved August 15, 2008, from [http://cpe.ky.gov/NR/rdonlyres/70AD5017-7CE5-4CFB-AAA3-0DD82CECB32B/0/Graph\\_Students\\_Entering\\_w\\_Dev\\_Needs\\_20061113.pdf](http://cpe.ky.gov/NR/rdonlyres/70AD5017-7CE5-4CFB-AAA3-0DD82CECB32B/0/Graph_Students_Entering_w_Dev_Needs_20061113.pdf)

(Note: The state defined a college student as having developmental needs if he or she scored 17 or lower on an ACT subject exam or the equivalent level on SAT subject or on-campus placement exams.)

### Policies & Initiatives<sup>2</sup>

A state task force charged with developing a plan to reduce numbers of underprepared students and to support and retain students entering postsecondary institutions developed the following recommendations:

- Update college admissions regulations.
- Create an integrated accountability system tied to performance funding.
- Fund academic infrastructure improvements.
- Align college readiness standards and tie them to professional development for educators.
- Better link educator preparation to college readiness.
- Develop early student interventions.

2 Kentucky Council on Postsecondary Education. (2007). *Securing Kentucky's Future: A Plan for Improving College Readiness and Success*. Retrieved March 2, 2008, from [http://cpe.ky.gov/NR/rdonlyres/CBAA5350-E515-42E2-8D8B-B5E61286135C/0/DevEdTaskForce\\_FullReport\\_FINALFORWEB.pdf](http://cpe.ky.gov/NR/rdonlyres/CBAA5350-E515-42E2-8D8B-B5E61286135C/0/DevEdTaskForce_FullReport_FINALFORWEB.pdf)

## Maryland

### Remediation Rates<sup>1</sup>

- 48.3 percent of 2004-2005 Maryland high school graduates assessed as needing remediation in at least one subject.
  - 42.2 percent as needing remediation in mathematics.
  - 21 percent as needing remediation in writing.
  - 22.9 percent as needing remediation in reading.

1 Burnett, C. (2007). *Response to Meeting Maryland's Postsecondary Challenges: A Framework to Guide Maryland's Public Investments in Postsecondary Education in the Coming Decade*. Annapolis, MD: Maryland Higher Education Commission. Retrieved March 13, 2008, from <http://www.mhec.state.md.us/highered/about/Meetings/CommissionMeetings/1-10-07/ResponseMeetMDsPostsecondaryChallenge.pdf>

## Massachusetts

### Remediation Rates<sup>1</sup>

- 37 percent of the public high school graduates of 2005 who were enrolled in public two- and four-year institutions were assigned to at least one remedial course during their first semester of college.
- Of students enrolled at community colleges, 65 percent enrolled in at least one developmental course, versus 22 percent at state colleges and 8 percent at state university campuses.

1 Massachusetts Department of Education. (2008). *Massachusetts School-to-College Report, High School Class of 2005*. Retrieved March 13, 2008, from <http://www.doe.mass.edu/research/reports/0208bhe.pdf>

## Missouri

### Remediation Rates<sup>1</sup>

- 36.4 percent of Missouri public high school graduates entering public two- and four-year institutions required remediation in at least one subject in 2006, including:
  - 29.6 percent in mathematics.
  - 16.9 percent in English.
  - 10.1 percent in reading.

### Policies & Initiatives

- The state initiated the Missouri Developmental Education Consortium (MoDEC) to<sup>2</sup>:
  - provide a statewide forum for the study of issues in developmental education.
  - serve as a liaison between the Missouri Department of Higher Education and two-year colleges.
  - collaborate with entities concerned with issues in developmental education.
  - compile and review placement policies and assessment instruments used in state two-year colleges.
  - study success rates (graduation and persistence rates) of students in developmental education.
- The state also established a P-20 Collaborative, comprised of the Commissioners of Education (K-12) and Higher Education, the Director of the Department of Economic Development, and the Chairs/Presidents of the State Board of Education and the Coordinating Board for Higher Education, to strengthen a sustained focus on P-20 work in the state.<sup>3</sup>

<sup>1</sup> Missouri Department of Higher Education. (2007). *Missouri High School Graduates Performance Report*. Retrieved March 18, 2008, from <http://www.dhe.mo.gov/mdhe/boardbook2content.jsp?id=406>

<sup>2</sup> Western Interstate Commission for Higher Education. (2008). *State Policy Inventory Database Online*. Retrieved August 15, 2008, from <http://www.wiche.edu/Policy/spido/index.asp>

<sup>3</sup> Missouri Department of Higher Education. (2007). *Missouri High School Graduates Performance Report*. Retrieved March 18, 2008, from <http://www.dhe.mo.gov/mdhe/boardbook2content.jsp?id=406>

## Ohio

### Remediation Rates<sup>1</sup>

- 37 percent of all first-time freshmen in public two- and four-year institutions took at least one remedial course in 2005.
- 39 percent of first-time freshmen age 20 and over in public two- and four-year institutions took at least one remedial course in 2005.
- 36 percent of first-time freshmen under age 20 in public two- and four-year institutions took at least one remedial course in 2005.

### Remediation Costs<sup>1</sup>

- \$101.7 million in institutional costs for remediation in 2005-06.
- \$31.9 million appropriated by the state for remedial education in 2005-06.

<sup>1</sup> Ohio Board of Regents. (2007). *Performance Report for Ohio's Colleges and Universities, 2006, Institutional Outcomes Measures*. Retrieved March 24, 2008, from [http://regents.ohio.gov/perfrpt/2006/Performance\\_Report\\_Detail\\_2006.pdf](http://regents.ohio.gov/perfrpt/2006/Performance_Report_Detail_2006.pdf)

## Policies & Initiatives<sup>2</sup>

- In 2007, the state established the “partnership for continued learning” to foster collaboration from pre-K through postsecondary. The group should also help to:
  - reduce the number of students needing remediation.
  - align state high school academic standards with college and business community expectations.
  - improve the math and science skills of high school students.
  - develop strategies to retain more students in college.

<sup>2</sup> Ohio General Assembly. (2007-2008). Amended Senate Bill Number 6. Retrieved March 29, 2008, [http://www.legislature.state.oh.us/bills.cfm?ID=126\\_SB\\_6](http://www.legislature.state.oh.us/bills.cfm?ID=126_SB_6)

## Oklahoma

### Remediation Rates<sup>1</sup>

- In 2006-07, 39,550 students enrolled in remedial courses, including:
  - 3 percent (1,085 students) at the research universities.
  - 17 percent (6,329 students) at the regional universities.
  - 81 percent (31,836 students) at the community colleges.
- Of the first-time freshmen enrolling in fall 2006, 36.5 percent took remedial courses.

### Remediation Costs<sup>1</sup>

- In 2006-07, state institutions generated \$2.3 million from student-paid remedial course fees.

<sup>1</sup> Oklahoma State Regents for Higher Education. (2008). *Annual Student Remediation Report, 2008*. Retrieved August 15, 2008, from <http://www.okhighered.org/studies-reports/remediation/remediation-report-3-08.pdf>

## Tennessee

### Remediation Rates (2006)<sup>1</sup>

- 2,290 recent high school graduates entering two- and four-year institutions took at least one remedial course.

<sup>1</sup> Tennessee Higher Education Commission. (2007). *Creating Partnerships for a Better Tennessee: Challenge 2010 Annual Master Plan Progress, 2007 report*. Retrieved February 6, 2008, from [http://www.tennessee.gov/thec/2004web/division\\_pages/ppr\\_pages/pdfs/Planning/challenge%202007.pdf](http://www.tennessee.gov/thec/2004web/division_pages/ppr_pages/pdfs/Planning/challenge%202007.pdf)

## Texas

### Remediation Rates<sup>1</sup>

- 38 percent of students at public two-year institutions enrolled in at least one remedial course in the fall of 2006.
- 24 percent of students at public four-year institutions enrolled in at least one remedial course in the fall of 2006.

### Remediation Costs<sup>2</sup>

- \$184.8 million in state appropriations provided for remedial education in public two- and four-year institutions in 2002–03.
- An additional \$5.8 million was provided in the state Developmental Education Program Performance Fund in 2002–03.

### Policies & Initiatives<sup>3</sup>

- In an effort to reduce college remediation, the state has developed the following initiatives:
  - adopted a P-16 College Readiness and Success Strategic Action Plan to increase student success and decrease the number of students enrolling in developmental courses in postsecondary institutions.
  - developed college readiness standards.
  - established summer higher education bridge programs to provide students who are not college ready with appropriate instruction prior to entering college.
  - provided funds for institutions to implement research-based or innovative developmental education initiatives.
  - provided financial aid to students who are not college ready.

<sup>1</sup> Terry, B. (2007). *The Cost of Remedial Education*. Austin, TX: Texas Public Policy Foundation. Retrieved February 7, 2008, from <http://www.texaspolicy.com/pdf/2007-09-PP25-remediation-bt.pdf>

<sup>2</sup> Texas Higher Education Coordinating Board. (2002). *Appropriations for Developmental Education in Texas Public Institutions of Higher Education*. Retrieved February 7, 2008, from <http://www.theccb.state.tx.us/reports/PDF/0456.PDF>

<sup>3</sup> Texas Higher Education Coordinating Board. (nd). *P-16 College Readiness and Success Strategic Action Plan*. Retrieved April 2, 2008, <http://www.theccb.state.tx.us/CollegeReadiness/StrategicActionPlan.pdf>

# Appendix B

## Methodology of Cost Estimates for Diploma to Nowhere

Calculating the cost of remediation was not an easy enterprise. The data that universities report annually to the U.S. Department of Education is not very detailed. The universities do not report programmatic information or what is spent each year on English or math instruction. The colleges don't even distinguish between what is spent on undergraduate and graduate education. Still, our analysis of expenditure data matched up fairly well with previous research. In 1998, the Institute for Higher Education Policy used Arkansas as a case study and estimated that the national cost of remedial education was probably around \$1 billion. More recently, the Alliance for Excellent Education estimated the state-by-state costs of providing remediation in community colleges. While they concluded that it costs around \$1.4 billion to provide remedial education in community colleges, they also provided an estimate of \$2.3 billion for additional earnings lost from students requiring remediation.

Several reports indicate that students take more than one remedial course. According to our poll, for instance, 64 percent of students report having been enrolled in more than one remedial class in college. But the analyses, including ours, do not report an exact number of remedial courses per student, and in our final report, we assumed that students take two remedial courses and calculated the cost using that figure. We were curious, though, to know the cost estimates for more and less conservative estimates of remediation, and we also calculated the cost of remediation with students taking 1.5 and 2.5 remedial courses. If we assume that students take 1.5 remedial courses, then the cost of remediation per student is between \$1,205 and \$1,506 for two-year institutions and between \$1,519 and \$1,898 for four-year institutions. From these data, we calculate an estimated \$1.74 to \$2.17 billion in total costs.

If we assume that students take an average of 2.5 remedial courses, then the cost per student is between \$2,008 and \$2,510 for public two-year

institutions and between \$2,531 and \$3,164 for public four-year institutions. From these data, we calculated an estimated \$2.89 to \$3.62 billion in total costs.

If we assume 1.5 remedial courses, then the subsidy for remediation is between \$931 and \$1,164 per student at two-year institutions and between \$667 and \$834 for four-year schools. If we assume 2.5 remedial courses, the subsidy per student is between \$1,460 and \$1,825 at public two-year institutions and between \$1,395 and \$1,743 for public four-year. From these data, we calculate that the total cost to students and families is roughly \$531 to \$664 million assuming 1.5 courses, and \$886 million to \$1.10 billion assuming 2.5 courses. We also calculate the costs of the subsidy for remedial education, and our conservative estimate ranges between \$1.20 and \$1.51 billion; our least conservative estimate ranges between \$2.01 and \$2.51 billion.

Our study was based on the work of the National Commission on the Cost of Higher Education and the Delta Project on Postsecondary Costs, and we calculated the annual costs based on per-pupil expenditures using 2004–05 finance data from the Delta database. The Delta database is a secondary system based heavily on the Integrated Postsecondary Education Data Survey (IPEDS) system and designed for the Delta Project on Postsecondary Education to mitigate issues inherent with conducting long-term trend analyses through IPEDS (e.g., definitional changes, changes in financial reporting standards). See the Delta Cost Project's website,

### Cost of Remedial Education (assuming 1.5 remedial courses per student)

	Number of Students in Remediation	Cost of Remediation
Public two-year	995,077	\$1.41–\$1.76 billion
Public four-year	310,403	\$326–\$407 million
Total	1,305,480	\$1.74–\$2.17 billion

### Cost of Remedial Education (assuming 2.5 remedial courses per student)

	Number of Students in Remediation	Cost of Remediation
Public two-year	995,077	\$2.35–\$2.94 billion
Public four-year	310,403	\$543–\$679 million
Total	1,305,480	\$2.89–\$3.62 billion

**Revenues for Remedial Education**  
(assuming 1.5 remedial courses per student)

	Tuition and Fees	Subsidies
Public two-year	\$385–\$481 million	\$1.03–\$1.28 billion
Public four-year	\$146–\$183 million	\$180–\$224 million
Total	\$531–\$664 million	\$1.20–\$1.51 billion

**Revenues for Remedial Education**  
(assuming 2.5 remedial courses per student)

	Tuition and Fees	Subsidies
Public two-year	\$642–\$802 million	\$1.71–\$2.14 billion
Public four-year	\$244–\$305 million	\$299–\$374 million
Total	\$886 million– \$1.10 billion	\$2.01–\$2.51 billion

<http://www.deltacostproject.org>, for more information.

Below we describe our methodology as well as other assumptions.

**Calculation of Instructional Costs and Full Educational Costs**

**Full educational cost** includes spending on faculty salaries and benefits as well as student services and the instruction-related share of spending on academic and institutional support, including counseling, operations, and maintenance.

In order to get an enrollment measure, we assumed that three part-time students were equal to one **full-time equivalent (FTE)**. (This is a standard assumption in higher education research.) Then we divided the number of reported part-time students by three and added it to the number of reported full-time students.

A **course cost** was calculated by dividing direct instruction cost or full educational cost per FTE by either 8 or 10, depending on whether we were assuming that students typically took 8 or 10 courses per year.

**Number of remedial courses typically taken.** In the final paper, we assumed two remedial courses per students. In this methodology report, we present some alternative numbers, assuming a more conservative 1.5 remedial classes per students as well as well a less conservative 2.5 remedial classes per student.

**Direct remedial costs** were then calculated by multiplying instruction spending per course by either 1.5, 2.0, or 2.5 in order to arrive at the remedial portion of FTE costs. Median spending per FTE student was used at the institutional-sector level for public two- and four-year institutions.

**Enrollment estimations** used the following data and assumptions:

Total undergraduate enrollments in public two-year and four-year institutions for 2005 were taken from the Delta database:

Public two-year: 6,030,768.

Public four-year: 5,261,076.

Total undergraduate enrollment was multiplied by an estimate of the percentage of students in their first year. Data from the 2004 National Postsecondary Student Aid Study were used to derive this proportion:

46.2 percent for public two-year institutions (2,786,215 students).

20.4 percent for public four-year institutions (1,073,260 students).

The remediation rates used were taken from the 2000 Postsecondary Education Quick Information Survey:

42 percent for public two-year institutions.

20 percent for public four-year institutions.

**Remediation enrollment estimates** were calculated by multiplying the number of students in each of the two types of institutions (public two- and four-year) by the percentage of students in remediation:

1,170,210 students for public two-year institutions.

214,652 students for public four-year institutions.

**Aggregate costs** were derived by multiplying the number of students in remediation by the remedial portion of FTE costs. We also assume the cost of a remedial course is equal to the cost of a non-remedial course.

**Cost/price subsidy** contrasts revenues against expenditures to examine who is paying for the cost of educating students. The subsidies going to those students who pay the full sticker price equals the full educational cost per FTE student minus the in-state undergraduate posted tuition price.

# STRONG AMERICAN SCHOOLS

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**For more information, please visit our website:**

**[www.EDin08.com](http://www.EDin08.com)**

**Or contact us at:**

**Strong American Schools**

1150 17th Street NW, Suite 875

Washington, DC 20036

Phone: (202) 552-4560

Fax: (202) 552-4570

E-mail: [info@EDin08.com](mailto:info@EDin08.com)