

Research Report

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The Education Deficit in the Lone Star State:

The Financial Impact on Texas When Students Fail to Learn Basic Skills

by

Christopher Hammons, Ph.D.

Houston Baptist University



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TABLE OF CONTENTS

Executive Summary3
About The Author4
Introduction5
Impact One: Personal Costs7
Impact Two: Business Costs.....10
Impact Three: The Education Deficit’s Social Costs.....13
Impact Four: The Education Deficit and Institutes of Higher Education14
Best Estimate of the Economic Impact When Students Fail to Obtain Basic Skills22
Solutions for the Texas Education Deficit24
 Step One26
 Step Two.....27
Endnotes29

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EXECUTIVE SUMMARY

This study calculates the financial impact on the state when Texans leave high school but fail to learn basic reading, writing, and math. Many of these students simply drop out, but an increasing number of them are students who graduate but still lack basic skills.

The Education Deficit: Percent of Texans Lacking Basic Skills	
Percent of Texans without a High School Degree	23%
Employees in the Private Sector	30%
Community College Freshmen	41%
State College and University Freshmen	27%
Private College and University Freshmen	12%

The financial impact on the state manifests itself in a variety of ways — lower earning potential and poor productivity of workers, increased spending on social programs, direct costs of remediation by institutes of higher education and employers, and personal losses that may affect individuals for a lifetime and the state for generations.

Using state and federal data, as well as surveys mailed to 1,000 employers in the state, this study concludes that Texas loses over \$13.6 billion a year when students leave high school but fail to acquire basic skills. The education deficit could cost Texas \$174.2 billion over the next 10 years and \$390.8 billion over the next 20 years. These estimates, which are based on conservative assumptions about inflation and which assume no increase in the state’s dropout rate, are substantially higher than the long-term projections recently made by the state comptroller’s office of \$114 billion and \$228 billion over the next 10 and 20 years respectively.

Financial Impact of the Education Deficit		
<i>Annual Impact</i>	<i>10-Year Impact</i>	<i>20-Year Impact</i>
\$13,567,000,000	\$174,159,000,000	\$390,768,000,000

These losses occur despite the fact that education spending has almost tripled on a per student, inflation-adjusted basis between 1960 and 2000. The challenge isn’t that Texas needs to invest more money than the billions it already spends on education. The challenge is that Texas needs to find ways to spend the billions more effectively.

Texans should expect schools to successfully impart basic skills to students and prepare them for college level work. The first step toward ensuring this expectation is fulfilled is to establish more rigorous assessment of academic skills as a prerequisite for graduation. The second step is to allow parents to make important choices regarding their children's education. What is commonly referred to as "school choice" creates healthy competition among schools and has a proven record of raising test scores, making better use of existing funds, improving teacher pay, and increasing parent and student satisfaction with the school system.

ABOUT THE AUTHOR

Dr. Christopher Hammons is a Senior Research Fellow for the Texas Public Policy Foundation. He writes about education policy and has conducted research on school choice, remedial education, special education, and home-schooling. In addition to his work with TPPF, he has conducted research for organizations such as *the Milton and Rose Friedman Foundation*, *the Mackinac Center for Public Policy*, *the Alabama Policy Institute*, *the John Locke Foundation*, *the Thomas B. Fordham Foundation*, *the Progressive Policy Institute*, and *the Harvard University Program on Education Policy and Governance*.

Dr. Hammons is an associate professor of political science at Houston Baptist University where he teaches courses in statistics, public policy, and constitutional theory. He received a B.A. in Government and History at the University of Texas at Austin in 1991 and an M.A. and Ph.D. in Political Science at the University of Houston in 1997. He has published in journals ranging from the *American Political Science Review*, *the Albany Law Review*, *Education Next*, and the *Houston Business Journal*. His research has been cited in numerous newspapers as well as on radio programs. His 2000 study on special education (co-authored with Dr. Matthew Ladner) was presented in testimony to the United States Congress. His 2002 work for TPPF was the subject of an NBC Nightly News special segment.

Dr. Hammons lives in Sugar Land, Texas with his wife and daughter.

INTRODUCTION

Texas is facing a growing education deficit. Despite the increased importance of a high school education for entry to post secondary education and the labor force, a growing percentage of Texans lack basic reading, writing, and math skills. This education deficit threatens the state in four ways.

First, Texas ranks last in the nation in terms of population with a high school education. Roughly one in four adults in Texas lacks a high school education. A report from the U.S. Census Bureau (2003) indicates that only 77 percent of the adult population in Texas possesses a high school diploma.¹ Texas ranks behind West Virginia (78 percent), Louisiana (80 percent), Alabama (80 percent), and South Carolina (81 percent) to name a few. While it is tempting to dismiss Texas' poor showing as a product of its demographics, doing so ignores the reality that Texas ranks dead last in the Union when there are other states with similar demographics or larger minority communities.

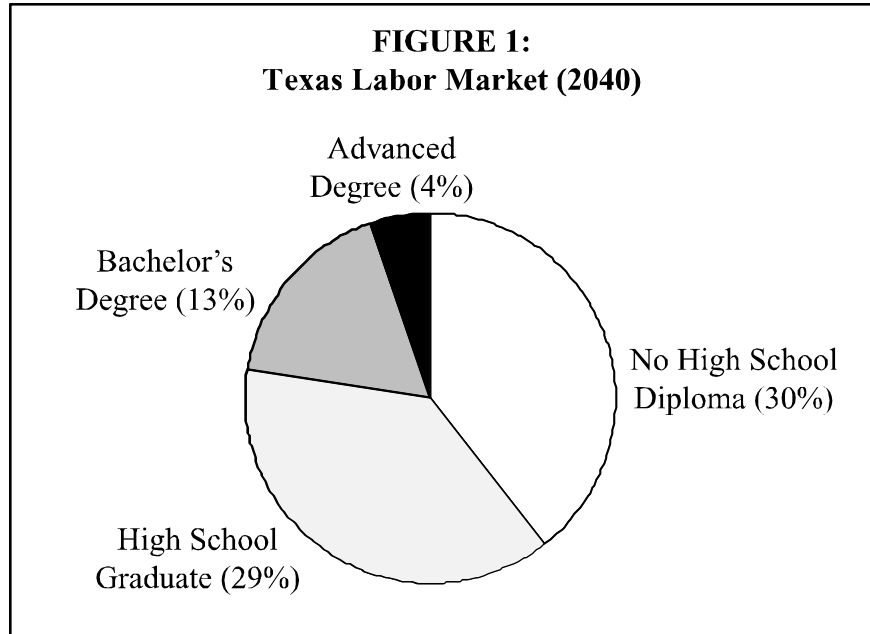
TABLE 1: Bottom 10 States in Terms of Percent of Population with a High School Education			
<i>State</i>	<i>Population with High School Degree</i>	<i>Minority Population</i>	<i>Percent of Population in Poverty</i>
#41 – Mississippi	82%	29%	20%
#42 – California	82%	40%	14%
#43 – Tennessee	81%	20%	14%
#44 – Rhode Island	81%	15%	12%
#45 – Arkansas	81%	20%	16%
#46 – South Carolina	81%	33%	14%
#47 – Alabama	80%	29%	16%
#48 – Louisiana	80%	36%	20%
#49 – West Virginia	78%	5%	18%
#50 – Texas	77%	29%	15%

Education data from U.S. Census Bureau, Educational Attainment in the United States, 2003. Demographic data from 2000 census.

Second, the education deficit is compounded by the number of students who drop out of Texas schools each year. The Texas Education Agency (TEA) reports that Texas public schools have a 1 percent dropout rate, or about 17,563 students dropped out of grades 7-

THE EDUCATION DEFICIT IN THE LONE STAR STATE:

12 during the 2000-2001 year.² The U.S. Department of Education, using a different means of calculating the dropout rate, reports a rate of 2.9 percent, or 50,268 students who dropped out of Texas schools that year.³ The problem is probably much worse. Some outside experts put the percentage of dropouts substantially higher, closer to 33 percent of all students.⁴ Houston Independent School District officials estimate that the dropout rate could be as high as 40 percent of all students.⁵ If this is the case, the number of students who drop out of Texas high schools could be many times higher than official estimates provided by the state.



The third way the education deficit threatens the state is that an increasing number of high school graduates — students who receive a diploma from the state — still lack basic reading, writing, and math skills. With so many graduates unable to succeed in college or the workplace, the state has seen a corresponding increase in remedial education (more often called “developmental” education) offered by colleges and employers. These programs are designed to compensate for the poor academic skills of many who already possess a high school diploma. Why do so many of these high school graduates lack basic reading, writing, and math skills? This question takes on greater urgency as the education deficit grows, education dollars become increasingly valuable, and the Texas economy moves into the digital age.

Fourth, demographic changes in the state means the education deficit will only get bigger. The projected growth rate among Latino Texans, who historically have the highest dropout rates, in particular makes facing the education deficit critical. About 52 percent of Latino Texans over the age of 25 currently report having no high school education. Compare this number to a relatively low rate of 13 percent for white Texans and a higher rate of 25 percent for African-American Texans. Only a small percentage of

Latinos who finish high school go on to college. Fewer than 1 in 10 Latinos in the state has a college diploma, followed by 1 in 6 African-Americans, and almost 1 in 3 whites. Projections are that Latinos, who now constitute about 32 percent of the state population, will comprise almost 60 percent by the year 2040. This growth rate coupled with current educational patterns has led Texas state demographer Steve Murdoch, in a report entitled *The Texas Challenge in the Twenty-First Century: Implications of Population Change for the Future of Texas*, to project that by the year 2040 only about 1 in 10 Texans in the workforce will possess a college degree. An astounding 1 in 3 will lack even a high school education, almost double the percentage of people in the labor force who currently lack a high school education.⁶

With demand for educated employees increasing and the supply getting smaller, those who have a good education will see their salaries increase. Those who lack an education risk being part of a glut of uneducated workers flooding the market, depressing wages further and making jobs even more difficult to find for those who already struggle to find work. The divide between rich and poor will grow larger. Latino Texans — the future of the state — will suffer the most.

Employers, institutes of higher education, and Texas taxpayers already bear the cost of coping with an increasing number of citizens who lack basic reading, writing, and math skills. How much does this education deficit currently cost Texas? How much will it cost us over the next 10 to 20 years? This study attempts to answer these questions.

To help in the calculations, the study uses data and reports from state and federal sources, telephone interviews, and surveys of community colleges, universities, and businesses. The study also relies heavily on recent reports by the Texas state demographer and the state comptroller.⁷ Calculating the costs of the education deficit is complicated by the ambiguity of defining “basic skills,” and the difficulty in specifying costs that result as a lack of a good education. Every stage of the analysis is based on conservative assumptions derived from the available data, meaning even the final estimates may be low. What is clear, however, is that the education deficit has serious implications for the future of Texas in terms of personal costs, business productivity, social programs, and higher education.

IMPACT ONE: THE EDUCATION DEFICIT’S PERSONAL COSTS

How much earning potential is lost when a person lacks basic skills? According to the U.S. Census, a person seeking a full-time job with no high school degree can expect to earn a little over \$23,000 a year. A high school graduate can expect to earn a little over \$30,000 a year. The lifetime difference between the two is a little over \$270,000 over an average 40-year work period.⁸ The collective loss to the state depends on the number of dropouts.

The TEA reports that Texas schools have a 1 percent dropout rate, or that about 17,563 students dropped out during the 2000-2001 academic year.⁹ However, the TEA’s method

of calculating the dropout rate has been questioned by numerous education experts and state officials, including many state legislators and the Texas state comptroller. The preferred methodology is that used by the National Center for Education Statistics (NCES), under the U.S. Department of Education. Using this methodology the dropout rate in Texas is almost three times higher (2.9 percent), or 50,268 students who dropped out of grades 7-12.¹⁰

While the NCES figures are generally considered more reliable than TEA figures, some independent experts put the percentage of dropouts in Texas substantially higher. Some experts put the statewide dropout rate at as high as 33 percent of all students.¹¹ Houston Independent School District's officials estimate that the dropout rate could be as high as 40 percent of all students.¹²

Part of the problem is that it is not always easy to determine who is a dropout and who isn't. For example, the state also keeps track of the attrition rate — the difference between the number of students who start in 9th grade and the number of students who finish 12th grade four years later. The attrition rate is always much higher than the dropout rate. While the NCES reports a dropout rate of 2.9 percent for Texas high schools, the attrition rate based on the difference between 9th grade enrollments and 12th grade enrollments four years later indicates a loss of 36.7 percent of all high school students over that period.

The discrepancy between the attrition rate and dropout rate is caused by the fact that dropout rates are based solely on those who “officially dropout” (usually meaning academic failure) while the attrition rate only counts missing heads. It is hard to tell why many of these students have gone missing. “Attrition that occurs because of dropouts cannot be distinguished from attrition that occurs because of retention, transfers, or early graduation,” says the TEA.¹³ Since officials cannot determine why all of these missing students have gone missing, they leave many of them out of the dropout figure. This leads many outside experts to believe that the number of students who actually drop out is much higher than the official record. In short, while the state would give the benefit of the doubt to those who have gone missing, many education experts are convinced that many of these missing students are and should be counted as dropouts.

Since there is no way to really know what the true dropout rate is, the safest way to proceed with the analysis is to use the more conservative NCES figures. This is exactly what the state comptroller does in a recently released report that calculates the economic impact of dropouts on the state. The December 2004 report estimates the wages these students lost because they failed to finish high school. The comptroller's report finds that a staggering \$6.3 billion a year in earning potential is lost because these students fail to acquire the basic skills that come with a high school diploma.

TABLE 2: NCES Dropout Rates Versus State Reported Attrition Rates, Grades 7-12, 2000-2001 Year		
<i>Group</i>	<i>NCES Dropout Rate</i>	<i>State Attrition Rate Class of 2001</i>
African Americans	5.4%	28.7%
Latino	6.1%	32.3%
White	2.5%	19.3%

Texas Education Agency, *Secondary School Completion and Dropouts in Texas Public Schools, 2000-2001*, p. 13 (March 2004).

The comptroller makes this calculation by looking at the total number *high school* dropouts during the 2000-2001 academic year. During this year there were 26,963 male dropouts and 20,010 female dropouts for a total of 46,973 students who left high school without having acquired basic skills. Data from the U.S. Census Bureau indicate that men with a high school diploma will earn \$365,707 more during their lifetime than their counterparts who dropped out of school. The same data indicates that women with a high school diploma will earn \$236,111 more during their lifetime than women without a diploma. Multiplying the difference in earnings by the number of people who did not finish high school provides a quick indication of the difference in lifetime earnings. The comptroller then takes into consideration the employment rate of people with a high school diploma and the amount of earnings that can be directly attributed to the basic skills that should have been learned in high school.¹⁴

If Texas dropout rates are even higher than reported by NCES, as is believed by many researchers, then the total amount of lost earnings becomes even greater. A more accurate picture of the dropout rate may be provided by the attrition rate of Texas public schools. While there were 46,973 dropouts reported by the TEA for the 2000-2001 school year, state attrition data indicate that there were 127,769 total students missing from the class of 2001.¹⁵ Subtracting the 46,973 official dropouts from that number leaves 80,796 students “missing” from Texas public schools. Assuming that just half of these “missing” students are indeed dropouts, the estimate of lost earnings should be adjusted upwards an additional \$5.3 billion.

In calculating the long-term financial impact of dropouts on the state, the calculation must account for an increase in the level of earnings (due to inflation), as well as an increase in the number of dropouts (due to demographic projections of population growth).

If the annual \$6.3 billion estimate of lost wages increases at merely the rate of inflation (3 percent) over the next 20 years the economic loss is close to \$182 billion (a difference of \$56 billion from the comptroller’s projection of \$126 billion). Based on demographic

projections developed by the state demographer's office, the number of dropouts will likely increase over the next 10 to 20 years, not remain static. Latinos will become the dominant student group in Texas public schools before 2020. If the current dropout rate for each ethnic group in the state (Table 2) holds steady, then Texas should see the number of dropouts increase by roughly 1,500 students a year.¹⁶

Using the comptroller's formula for calculating the cost of dropouts — but taking into account inflation and a conservative increase in the number of dropouts each year — the cost of the education deficit in 10 years is closer to \$80 billion rather than \$63 billion. Over 20 years, the cost is closer to \$213 billion rather than the \$126 billion reported by the comptroller. Even these figures, while they account for inflation and an increase in the number of dropouts over the years, assume that the dropout *rate* itself remains steady. If the dropout rate increases, so will the costs.

IMPACT TWO: THE EDUCATION DEFICIT'S BUSINESS COSTS

To solicit feedback about the quality of employees in the state, we mailed out 1,000 surveys to a random selection of Texas employers. We received 72 responses to our survey (a 7.2 percent response rate, which falls within the range considered good).¹⁷ The employers who responded to our survey maintain 23,940 employees in Texas.

To encourage honest responses, employers were promised anonymity. However, we can disclose that respondents represent a wide cross-section of the Texas business community — retail stores, construction companies, industrial manufacturers, high tech companies, health care companies, professional services, and more. The businesses range in size from one employee to over 14,000 employees. The median size of the companies surveyed was 20 employees. Several companies had been doing business in Texas for over for 100 years, while others had been in business for less than five years. The average length of time these companies had been in business is 28 years. In short, the employers are a good cross-section of the Texas business community.

The survey indicates that for many employers finding quality employees is a major problem. Texas employers note that on average about a third of their employees (30 percent) lack basic skills in math, reading, and writing. Several employers commented on the poor math skills of many applicants. “Many of them cannot perform basic math,” says a restaurant owner in San Antonio, “not even with a calculator.” Employers also commented on the poor writing skills of applicants, citing bad grammar, incorrect spelling, and an inability to convey ideas. “It's hard to find qualified people,” noted the owner of a Houston advertising agency. A Dallas hotel representative commented that “the problem seems to be getting worse.”

To understand better the challenges faced by employers, we asked them to rate their employees' reading, writing, and math skills using the standards set forth by the TEA.

The Financial Impact on Texas When Students Fail to Learn Basic Skills

The TEA identifies the standard for writing skills as “using effective word choice, structure, and sentence forms with emphasis on organizing logical arguments with clearly related definitions, theses, and evidence; organize ideas in writing to ensure coherence, logical progression, and support for ideas; produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization such as italics and ellipses; demonstrate control over grammatical elements such as subject-verb agreement, pronoun-antecedent agreement, verb forms, and parallelism; compose increasingly more involved sentences that contain gerunds, participles, and infinitives in their various functions; and produce error-free writing in the final draft.”¹⁸

According to the survey, approximately 26 percent or about one of four of employees fail to meet the state’s standard for writing.

The TEA identifies the standard for reading skills as the ability to: “use reference material such as glossary, dictionary, thesaurus, and available technology to determine precise meanings and usage; identify main ideas and their supporting details; summarize texts; draw inferences such as conclusions, generalizations, and predictions and support them from text; locate appropriate print and non-print information using texts and technical resources, periodicals and book indices, including databases and the Internet; adapt researched material for presentation to different audiences and for different purposes, and cite sources completely; and draw conclusions from information gathered.”

According to the survey, 22 percent or about one in five employees fail to meet the state’s standard for reading.¹⁹

The TEA identifies the standard for math skills as the ability of the student to understand “how algebra can be used to express generalizations and recognizes and uses the power of symbols to represent situations. The student understands the importance of the skills required to manipulate symbols in order to solve problems and uses the necessary algebraic skills required to simplify algebraic expressions and solve equations and inequalities in problem situations. The student understands that linear functions can be represented in different ways and translates among their various representations. The student understands the meaning of the slope and intercepts of linear functions and interprets and describes the effects of changes in parameters of linear functions in real-world and mathematical situations.”

About 43 percent of the workers employed by the survey respondents met the state’s standard for math, while 57 percent failed to meet it.²⁰

Many employers tell us that employees who lack basic skills are frequently the worst employees in terms of job performance. One employer provided the example of employees in a restaurant who are expected to make change for customers. These employees struggle to do it correctly. Other employees commented on the poor work ethic of employees, citing difficulty in finding employees who will “even show up on time.” In short, employees who lack basic skills may be less productive than other employees. These losses are masked by the overall productivity of other employees.

Nonetheless, they represent a real loss to the state's business community in terms of lost productivity.

Lower productivity of workers without a high school diploma now costs Texas businesses \$5.1 billion a year, according to the state comptroller's recent report. This figure is derived by using 2001 U.S. Census data that indicate that earnings account for about 55 percent of the Texas gross state product. Since the lost earnings of employees without a high school diploma amount to an annual loss of \$6.3 billion (Impact One), dividing that number by 55 percent reveals an amount of lost productivity to the tune of an additional \$5.1 billion. This means Texas actually suffers an annual loss of \$11.4 billion as a result of lost earnings and productivity by people who fail to graduate from high school.

The real loss to business productivity is significantly higher when accounting for inflation and the increased dropout rate reported in Impact One. When population growth and inflation are considered, the real loss to business productivity is likely to be close to \$65.2 billion over the next 10 years and \$173.9 billion over 20 years.

But the problem doesn't end there. A growing number of employees who lack basic skills are high school graduates. In fact, most of the employers in our survey require a high school degree for employment. Even so, they still noted that almost a third of their employees lack basic skills. One employer summed up his frustration, commenting to us that he simply would not hire graduates right out of Texas high schools because "a Texas high school diploma does not indicate competence in basic reading, writing, and math."

As a result, many Texas employers actively screen their applicants using some sort of basic skills tests. One employer noted that 25 percent of applicants, most with high school diplomas, fail the exam. As a result, many employers have taken to using company money to teach basic skills like reading, writing, and math to high school dropouts and graduates alike.

Employers in our sample report spending money to remediate 1.5 percent of their employees. What this tells us is that most employers, even though they report that almost a third of their employees lack basic skills, either are not willing or are not able to pay for remediation. The decision is understandable. The average cost of remediation per employee is reported to be about \$872. Obviously some employees will cost most and some less.

If all employers in the state experience the same conditions and the same average expense per employee, Texas employers spend over \$106.8 million a year to re-teach employees basic reading, writing, and math.²¹

An additional expense for businesses is the purchase of technology to compensate for employees' lack of skills. Businesses in our sample reported spending \$320,100 on technology during the last fiscal year to assist employees who struggle with basic reading, writing, and math.

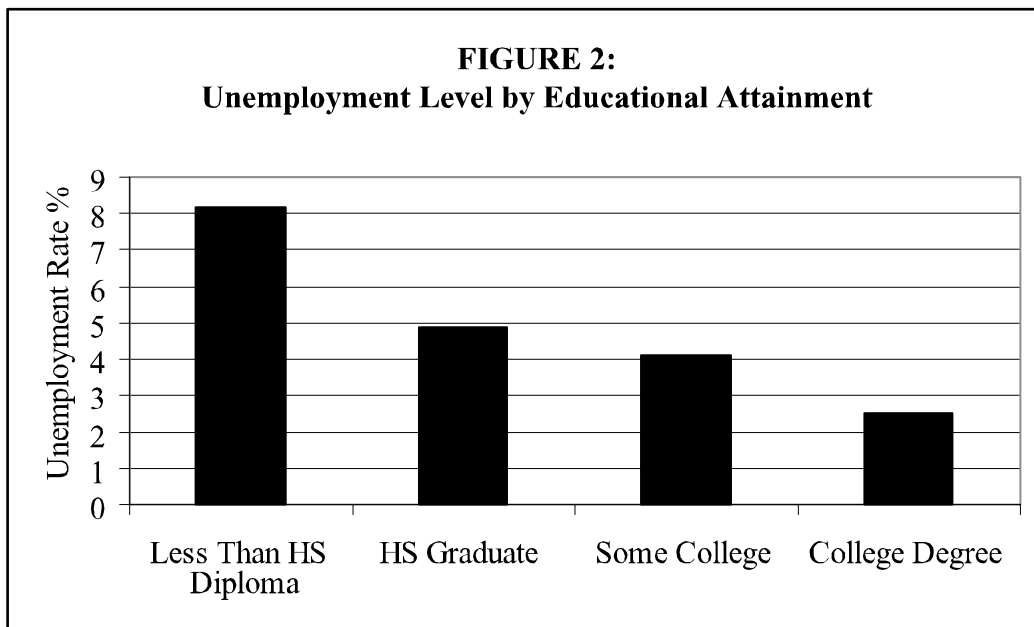
These expenditures included things like cash registers that make change because the employees cannot add or subtract correctly. Some companies purchase touch screen computers with pictures of food items on them so that employees do not have to read the computer screens. Using the data provided by employers indicates that these businesses spend \$13.34 per employee on technology to compensate for lack of skills. Some employees will have very high technology expenses while others will be very low. Again, this is merely an average in order to generalize to the larger population.

Texas employers pay almost \$109 million a year in technology to compensate for their employees lack of basic skills. The total direct cost to Texas's business community is over \$5.5 billion in the last fiscal year as a result of poor reading, writing, and math skills among their employees.

IMPACT THREE: THE EDUCATION DEFICIT'S SOCIAL COSTS

A student who lacks basic skills may ultimately cost society more than just the lost earnings of a productive citizen. The impact of students leaving high school without basic skills has costs that are difficult to quantify but that have tremendous social and personal implications — illiteracy, unemployment, welfare, prison — which might ultimately cost the state money in addition to what it loses in productivity and earnings.

Finding solid work is hard for people who lack a formal education. The Bureau of Labor Statistics indicates that as of October 2004, persons lacking a high school diploma were almost twice as likely to be unemployed as those who have a high school degree. As shown in Figure 2, the unemployment rate for dropouts is 8.2 percent — versus a rate of 4.9 percent for high school graduates.



Those who drop out of high school without basic skills often face low-paying jobs and a life fraught with financial difficulty. In addition to lost earning potential and productivity, many high school dropouts rely on government programs to help make ends meet. According to the state comptroller, “High school dropouts are 2.7 times more likely to receive Temporary Assistance to Needy Families than those with a high school diploma and 3.7 times more likely to receive food stamp assistance.”²² The state and federal government spend a total of \$920 million a year in welfare to high school dropouts.²³

Even more troubling is the high rate of incarceration among those who fail to complete high school. Through a complex formula, the state comptroller estimates that it costs the state and federal government \$1.4 billion a year to incarcerate high school dropouts.²⁴ While it is impossible to tell how many of these dropouts would have avoided prison if they had merely finished high school and acquired some marketable skills, the reality is that when students drop out of school they are more likely to wind up in prison. “If Texas dropouts in 2004 had been incarcerated at the same rate as high school graduates, 84,695 fewer persons would have been in Texas prisons.”²⁵ In Texas, dropouts are six times more likely than high school graduates to end up in prison.

The total cost to the state of welfare and incarceration, minus federal contributions, is about \$1.48 billion a year.²⁶ The long-term costs are more difficult to project. Even though we know that dropouts are more likely to need welfare or wind up in prison, there is no way to know how many of them will actually fall into such a predicament.

Therefore, the most conservative means of estimating the long-term impact is simply to take the annual cost and account for inflation. Doing so means that Texas will face a minimum expense of \$19 billion over the next 10 years and \$42.8 billion over the next 20 years.

IMPACT FOUR: THE EDUCATION DEFICIT AND INSTITUTES OF HIGHER EDUCATION

A recent survey by the Texas Higher Education Coordinating Board found that 99 percent of the community colleges and universities in the state reported offering some form of developmental education classes to re-teach high school graduates basic reading, writing, or math.²⁷ The process for determining who needs remedial education is the same at most institutions. Incoming students are screened using some form of standardized test to determine if they need remediation. Students who fail to pass the test will take one or more remedial classes. Students are not usually awarded college credit for the completion of these courses. To the contrary, the completion of these classes is usually required before students can enroll in college-level courses. English and math are the most common remedial subjects.

Most remediation occurs at the community college level, with much less occurring at comprehensive universities like the University of Texas or Texas A&M. In fact, state records indicate that 88 percent of developmental instruction in Texas takes place at

The Financial Impact on Texas When Students Fail to Learn Basic Skills

two-year colleges.²⁸ “For a variety of reasons many kids who finish high school simply aren’t prepared for college,” says Bob Akin, a professor of developmental English in the Houston Community College system. “For many, developmental education is viewed as a means of preparing students for college level work.”²⁹

State records confirm that many first-time college students do indeed need help with basic academic skills. During the fall of 2001 there were a total of 119,789 first-time freshmen in Texas community colleges. Of these, 48,629 freshmen were required to take remedial classes. This represents 41 percent of the freshmen class for that year.³⁰ The vast majority of these students are in remedial education for academic reasons, with less than 5 percent citing language barriers or disabilities.³¹

**TABLE 3:
Percent of Houston Area High School Graduates
Needing Remediation in Junior College**

<i>District from which Students Graduated</i>	<i>Graduates Enrolled in Community College, Fall 2004</i>	<i>Graduates Enrolled in Remedial Classes, Fall 2004</i>	<i>Percent of Graduates Needing Remediation</i>
Aldine	482	349	72.4
Magnolia	114	81	71.1
Spring	410	287	70.0
Houston	1290	887	68.8
Spring Branch	292	201	68.8
Tomball	118	78	66.1
Alief	428	282	65.9
Katy	385	252	65.5
Conroe	454	282	62.1
Cypress-Fairbanks	1011	613	60.6
Fort Bend	549	330	60.1
Klein	473	284	60.0
Willis	47	28	59.6
Splendora	44	25	56.8
Humble	366	196	53.6
New Caney	89	42	47.2

Reprinted from *Houston Chronicle*, September 26, 2004, p. A1 “It’s Back to Basics for Many in College.”
Data Source: North Harris Montgomery College District, Houston Community College System.

While the statewide rate for remediation is about 41 percent of all community college freshmen, some faculty members indicated that remediation rates in urban areas are probably much higher. “We see many more kids from the metropolitan areas who need remediation than from outlying areas,” says Professor Akin of Houston. Houston ISD, the largest school district in the state, reports that of its recent graduates who went to community college, 68 percent were required to take remedial classes. Even some of the more affluent Houston-area school districts, such as Katy ISD and Spring Branch, report similar numbers.³²

Community college faculty are quick to point out that while a high percentage of new students require remediation, such classes actually constitute a very small percentage of the total number of hours taught at the junior college level. “We don’t view ourselves as grades 13 and 14 after students leave high school. Most of my colleagues focus on offering demanding, college level coursework,” concludes Professor Akin. “Developmental education is only a small part of what we do.”

There is some statistical evidence to support this claim. During the 2000-2001 academic year, Texas’ community college system reported that only 11 percent of all contact hours offered at two-year colleges in the Texas community college system were remedial hours. Given the size of the Texas community college network, however, this translates into millions of contact hours (22,171,593 hours as reported by the state) to teach college students basic reading, writing, and math skills.³³ Therefore, while developmental education is only a small part of what Texas community colleges do, a substantial amount of time and money is spent on such programs.

State records indicate that a total of \$154 million in state funds was committed to developmental education at the community college level during the 2000-2001 academic year.³⁴ This is roughly 10 percent of the state funds allocated for all lower-division community college hours. This figure does not represent the true costs of remediation, however, because appropriations only cover 37 percent of the actual expense of educating students. The remaining 63 percent of the cost is financed through tuition, fees, and local taxes used to supplement the real costs of a junior college education.³⁵ If \$154 million is the state’s share of developmental education, then the real cost is closer to \$415 million when all the sources of funding are taken into consideration.

This \$415 million figure represents about 14 percent of the \$2.9 billion Texas junior college’s spent during the 2001-2002 academic year.³⁶

While developmental education is found primarily at the junior college level, a survey of college catalogs for many of the state’s four-year colleges and universities indicates that most offer remedial classes in basic reading, writing, and math as well.

State data indicate that a total of 140,355 total remedial hours were completed by students at state colleges and universities during the 2000-2001 academic year.³⁷ The classes are almost always three-hour courses. Assuming each student in need of remediation takes two classes would mean that 23,392 students completed remedial classes during the fall of 2000.³⁸ As a percentage of the freshmen class for that year,

approximately 27 percent of the 87,182 freshmen at state universities during the fall of 2000 needed some assistance with their reading, writing, or math skills.

During the 2000-2001 academic year, the state committed \$22 million to remedial education at four-year colleges and universities.³⁹ These state appropriations cover about 47 percent of the cost of education. The remaining 53 percent is covered by charges to students (tuition and fees) and other sources (endowments and grants).⁴⁰ What this means is that the real cost of developmental education at state universities and colleges is closer to \$47 million when all funding sources are included.

TABLE 4:
Examples of Developmental Math and English Courses
at Public Universities (2004)

University of Texas at Austin

Basic Reading Skills (DEV 300R) ... The emphasis of this course is on increased proficiency of comprehension skills, vocabulary development, and strategies for reading improvement. Topics include main ideas, supporting details, patterns of organization, mapping, summarizing, roots, prefixes, suffixes, inferences, the authors point of view, fact versus opinion, denotation and connotation, bias, figurative language, note-taking strategy, and specific reading strategies.

Basic Math and Algebra Skills Review (DEV 300M) ... This review course is designed for students who want the structure of a classroom setting and who do not need extensive remediation.

Basic Writing Skills (DEV 300W) ... The emphasis of this course is on methods of composition, review of grammar, sentence structure, punctuation and spelling. Attention is on planning, writing, and revising works. Topics covered are thesis statements, topic, sentence development, paragraph development, essay development and draft process, the revision process, sentence patterns and punctuation, summarizing, and peer editing.

(Table 4 ... continued on next page)

(Table 4 ... continued)

University of Houston

ENGL 1300: Basic Writing ... Cr. 3. (3-0). May not be substituted for ENGL 1303 or 1304 or equivalents. May not be used to satisfy any degree requirements at the university. Work in the development of basic expository writing skills.

ENGL 1300: Fundamentals of Mathematics ... Cr. 3. (3-0). A survey of pre-college algebra. Topics include signed numbers, operations with algebraic expressions, first-degree equations and inequalities in one variable, factoring, the Cartesian coordinate system, systems of first-degree equations in two variables solved by graphical and algebraic means, exponents and radicals, an introduction to quadratic equations, and stated problems. This course may not be used to satisfy any degree requirements.

University of North Texas

1200. Developmental Writing ... 3 hours. Covers sentence formation and skills needed for argumentation and exposition within introduction, body and conclusion. Emphasizes audience, purpose and occasion. Does not apply to degree. Pass/no pass only.

1010. Fundamentals of Algebra ... 3 hours. Basic algebraic operations, linear equations and inequalities, polynomials, rational expressions, factoring, exponents and radicals, and quadratic equations. Prerequisite(s): consent of department. Students may not enroll in this course if they have credit for any other UNT mathematics course. Credit in this course does not fulfill any degree requirement. Pass/no pass only.

Texas State University

ENG 1300 Developmental Writing ... Basic composition skills. Offered to students who have failed the TASP writing test or for those who need developmental work before taking English 1310.

MATH 1311 Basic Math ... A preparatory class for college algebra.

Remedial education also occurs at private colleges and universities, but it is more difficult to identify. Only a few private school catalogs list remedial classes in “basic

The Financial Impact on Texas When Students Fail to Learn Basic Skills

writing” or “fundamental math.” This does not mean, however, that remedial education does not occur at private institutions. A recent study by the U. S. Department of Education found that nationally 12 percent of all private university freshmen enrolled in some sort of developmental class.⁴¹

Operating on the safe assumption that Texas private schools are no better or worse than other schools throughout the nation would mean that 12 percent of the entering class during the fall of 2001, or 3,064 of the 25,540 freshmen, enrolled in developmental courses.⁴² Assuming each student takes only one three-hour class means that 9,192 hours of developmental classes occurred at private schools during the fall of 2001. At an average tuition and fees rate of \$431 per hour the total student expenditures for developmental education would be close to \$4 million. This is an extremely low estimate because it assumes students only take one remedial class and excludes students who take remedial classes in the spring or summer.

<i>Institution of Higher Education</i>	<i>Percent Needing Remediation</i>
Community Colleges	41%
State Colleges and Universities	27%
Private Colleges and Universities	12%

Adding the combined sums for all institutes of higher education in Texas — \$415 million for community colleges, \$47 million for four-year colleges and universities, and \$4 million for private schools — shows that Texas institutes of higher education spend roughly \$466 million a year to teach high school graduates basic reading, writing, and math.

There are a number of reasons why this figure, while substantial, probably underestimates the true costs of remedial education. First, developmental education programs are typically more expensive to run than traditional college classes. Most rely heavily on expensive diagnostic exams and computer assisted learning, and they often have additional administrative costs associated with such programs. It is not unusual for colleges to have some form of a developmental education center, usually staffed with several advisors, councilors, and a director. These support services may or may not be included as part of a school’s developmental education spending, since many involve capital improvements that may not be covered by funds allocated to developmental education. Interviews with program coordinators at two major state universities confirmed that much of their developmental efforts are housed in “study” or “tutoring” centers with dedicated staff, space, and resources.

THE EDUCATION DEFICIT IN THE LONE STAR STATE:

Second, the estimate only includes funding to courses designated as developmental. It is inevitable that some remedial education occurs in classes labeled as “college level.” In part, this is a function of dedicated teachers making sure that students hone their reading, writing, and math skills. There is a difference, however, between professors helping students polish their skills and professors having to bring students up to speed. When asked how much time was spent in college level courses teaching basic skills, faculty members interviewed responded anywhere from “very little” to “maybe 5 percent or 10 percent.” In short, there is always going to be some time devoted to teaching basic skills, even in classes labeled as “college level,” and the time spent doing this is not included in the cost estimate here.

TABLE 6: College Courses that Fulfill Math Requirements (2004 Catalogs)	
The University of Texas	<i>302. Introduction to Mathematics ...</i> Intended primarily for general liberal arts students seeking knowledge of the nature of mathematics as well as training in mathematical thinking and problem solving.
Texas A&M	<i>Philosophy 240. Introduction to Logic (counts as 3 hours Math) ...</i> Methods and principles used to distinguish between correct and incorrect reasoning; uses of language, informal and formal fallacies, Venn diagrams, truth-tables, symbolic notation, formal deductive proof, induction.
University of Houston	<i>1312: Introduction to Mathematical Reasoning ...</i> Cr. 3. May not apply toward a degree from the College of Natural Sciences and Mathematics. Principles of logic and proof, set theory, formal and informal geometry.
University of North Texas	<i>1400. College Math with Calculus ...</i> 3 hours. An applied mathematics course designed for non-science majors. All topics are motivated by real world applications.
Texas State University	<i>MATH 1316 A Survey of Contemporary Mathematics ...</i> A study of the uses in Mathematics today. Emphasis is on concepts rather than technical details.

More disturbing is the possibility that the true costs of remedial education are cloaked by a declining standard as to what constitutes “college level work.” A number of colleges and universities now offer classes such as “Math for Students with Math Anxiety,” or “Science for Liberal Arts majors.” These courses, examples of which are shown in Table 5, offer students with the weakest skills a chance to earn college credit for what are essentially watered-down versions of more demanding college classes. Many of these classes, such as the courses at UT and Texas State, offer a “conceptual orientation” towards math rather than problem solving. These courses might explain how and why math is useful and explore careers or scenarios in which mathematic skills come in handy. Table 5 provides the actual catalog descriptions of these courses.

A final reason why the initial figure may underestimate the true costs of remedial education is that it assumes all students needing remediation take remedial classes. For instance, while the Texas Association of Community Colleges requires placement tests of all students seeking a degree, there are exceptions. Community colleges can exempt students from remediation who are not seeking degree credit (even though they might want to take college-level classes) or students who are in certification programs that require less than one year of study. Students that meet the minimum academic standards set by one institution (or who complete what passes for developmental education at one institution) are exempted from remediation in any college to which they might transfer.

This is true even if the new college has more stringent standards. In rare cases, students with deficient basic skills may postpone remediation until the second semester while taking college-level course work the first semester.⁴³ Hence, while state records indicate that 41 percent of community college freshmen in the state take some form of remedial class, the percentage of students in need of remediation may actually be higher than the percentage of students who get it.

In many ways, remedial education is the state’s largest jobs program. The benefits of a college education are clear, and providing the opportunity for as many students to go to college is surely a step in the right direction. There are, however, two problems with this approach. The first is that many students will never take advantage of it. A much smaller percentage of black and Latino students who graduate from high school enroll in college.

Of the 66,637 Latino students who graduated from high school in the spring of 2003, only 20,912 of them, or 31 percent, applied to college. One explanation for this may be that students who struggle with basic skills in high school never have the academic disposition or confidence to even consider college. In other words, the better students apply to college (and even about a third of those need remediation) and the less-prepared students do not. While this is hardly a novel conclusion, the result is that the weakest students who graduate from high school may never get help with their basic math, reading, and writing skills. As a result, their career opportunities and earning potential are limited.

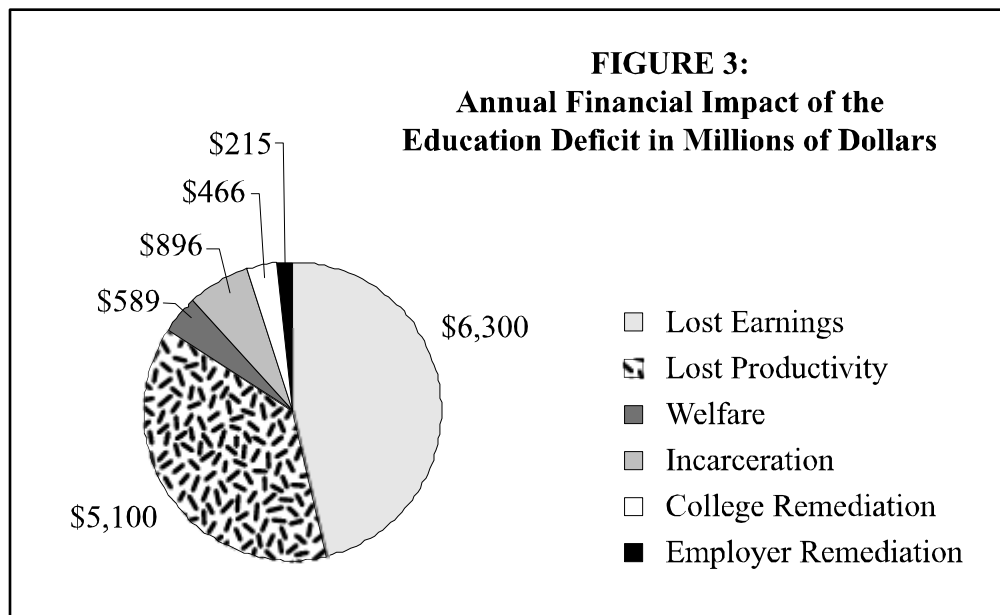
The second and more troublesome aspect of remediation is that its effectiveness is debatable. There are doubtless many students who benefit from remedial education.

THE EDUCATION DEFICIT IN THE LONE STAR STATE:

Some of them might just need a few pointers or a quick review, or maybe they have been out of school for several years and need a refresher. The problem is that students with poor basic skills are the least likely to graduate from college, even if they successfully complete remedial courses. Research indicates that an extraordinarily low percentage of students who complete remedial courses will ever finish college. One study places this number as low as 10 percent of remediated students.⁴⁴ The reality is that remediation for most students is more about ensuring a minimal level of competency rather than proficiency. The problem is that a student with minimal reading and writing skills does not have the same foundation for success as a student who is a proficient reader and writer. While there are doubtless many students who benefit from developmental education, most students who receive remediation will struggle through their college classes before they eventually drop out or flunk out.

BEST ESTIMATE OF THE ECONOMIC IMPACT WHEN STUDENTS FAIL TO OBTAIN BASIC SKILLS

How much does it cost Texas when students fail to learn basic skills like reading, writing, and math? Adding the costs of lost earnings, lost productivity, welfare, incarceration, college and employer remediation provides the best estimate. The state of Texas loses over \$13.6 billion a year when students leave high school but fail to acquire basic skills. To provide some context regarding this size of this figure, the \$13.6 billion loss is sufficient enough to more than double the pay of every teacher in Texas.



The Financial Impact on Texas When Students Fail to Learn Basic Skills

Most troublesome is that the long-range projections of the education deficit only paint a bleaker picture.

Throughout the course of the next two decades, the education deficit could cost Texas \$174.2 billion during the next 10 years, and more than \$390.8 billion during the next 20 years.

These figures are substantially higher than the state comptroller's estimates of \$114 billion and \$228 billion respectively. Even so, these projects are based on the conservative assumptions that the rate of inflation (figured as 3 percent annually) will not be higher, that the dropout rate in Texas is not actually higher than what the NCES reports, and that the dropout rate will not increase over the next two decades. In sum, these are minimal projections as to the long-term impact of the education deficit.

TABLE 7: Estimated Annual and Long-Term Impact of Texas Education Deficit, in Millions of Dollars			
<i>Expense</i>	<i>Annual Cost</i>	<i>10-Years</i>	<i>20-Years</i>
Lost Earnings	\$6,300	\$80,900	\$181,472
Lost Productivity	\$5,100	\$65,459	\$146,906
Welfare	\$588.8	\$7,547	\$16,937
Incarceration	\$896	\$11,500	\$25,810
College Remediation	\$466	\$5,981	\$13,423
Employer Remediation	\$216	\$2,772	\$6,221
TOTAL COSTS	\$13,567	\$174,159	\$390,769

SOLUTIONS FOR THE TEXAS EDUCATION DEFICIT

Why do so many Texans lack basic reading, writing, and math skills? This is a difficult question to answer. Educators are often the first to say that the problem isn't schools, but that the changing demographics of Texas have made public education more challenging. Perhaps they are right. There is certainly some truth that students from diverse backgrounds bring with them issues such as language barriers, cultural pressures, family demands, or poverty that make formal education more difficult. The high number of dropouts could certainly be a product of such forces. But rather than trying to place blame for the problem, and given the tremendous expense dropouts impose on the state, it is more productive to consider ways in which public education can innovate to reduce the number of students who drop out.

Percent of Texans without a High School Degree	23%
Employees in the Private Sector	30%
Community College Freshmen	41%
State College and University Freshmen	27%
Private College and University Freshmen	12%

Indeed if there is evidence that the public school system is in trouble, it is more likely to be found in the growing number of high school graduates who still lack basic skills reading, writing, and math skills after receiving their diploma. There are varied explanations as to why so many of them struggle with basic skills. Some educators we spoke with blame the maturity level of the students. “Between ages 15-18, students just aren’t interested in learning. There is a real lack of maturity when they are in high school,” says Bob Akin, of the Houston Community College system. “Many of them will grow up later, and with a little help [remediation] they will do okay.”

Some people blame age for the growing number of college students who require remediation. Dr. Contance Elko, Chair of the Math Department and Professor of Developmental Math at Austin Community College, says that about half of the freshmen at her institution require some remedial help. Dr. Elko points out that of students at her institution who require remediation, about 60 percent are in their mid-20s and just returning to their education. “How much algebra can they remember after being out five years?”⁴⁵

Elko, as well as other educators, also expressed concern about the quality of instruction students receive in high school. Dr. Elko notes that the remaining 40 percent of her institution’s remedial students come right out of area high schools. “High schools do a

terrible job of preparing students for college math,” she notes. Elko suggests the problem stems from poor academic advising, the ability of students to substitute easy math courses for hard ones, and in some cases really bad teachers. “Good students will survive the system, but average and weak students really suffer.”

The director of a writing center at a major state university, who asked not to be identified by name, said that closer to 50 percent of the freshmen at her institution need help with reading and math skills, but only about 5 percent of the freshmen will be required to take remedial classes. “The work of students coming right out of high school is pretty spotty. The truth is that many of them get really poor instruction,” she notes. “Some of the local high schools are really bad. Students leave with all sorts of misinformation about rules of grammar and composition.”⁴⁶

Alan Constant, the director of the learning center at the University of Texas at Austin, says that the number of students in developmental classes at UT is pretty small. He attributes this to the “top 10 percent rule” which makes it difficult for weaker students to get into UT. UT records show only about 200 students enrolled in developmental classes out of a freshmen class of around 7,000 students.

“Even though we get the best students in the state, they are often weak in their fundamentals,” says Mr. Constant. “Around weeks 3 or 4, we are floored with students who come in panicked about their coursework.”⁴⁷

Constant says that while UT gets some of the best students in the state, college freshmen are simply overwhelmed by the demands of college. “There is a disconnect or gap between high-school level work and college expectations,” he says. Constant says that many of the students he sees simply did not have a very challenging high school experience. “So much of the reading students get now in high school is watered down and not very challenging. When they get to college, they are shocked by the reading requirements of most professors.”

So what is required to produce high school graduates who have the basic skills they need to survive college and the workplace? More money will not fix the problem. In 1970, Texas spent approximately \$551 per public school student (approximately \$2,600 in today’s dollars), according to the National Center of Education Statistics. Texas taxpayers spent \$6,771 per student in 2001.⁴⁸

Despite the fact that spending almost tripled on a per student, inflation-adjusted basis between 1960 and 2000, Texas public schools still struggle to produce students with solid academic skills. In 2003, results of the National Assessment of Educational Progress (NAEP) exams indicated that 29 percent of Texas 8th graders possessed “below basic” skills in reading and 31 percent possessed “below basic” skills in math. In fairness, these scores are on par with the national average. However, Texas minority students fair much worse. Among black 8th graders, 44 percent did not possess basic reading skills and 53 percent did not possess basic math skills. Among Latino 8th graders, 41 percent did not possess basic reading skills and 42 percent did not possess basic math skills.

THE EDUCATION DEFICIT IN THE LONE STAR STATE:

The same exam indicates that in Texas 45 percent of all 8th graders possess “basic skills” in reading and 44 percent possess basic skills in math. While this initially seems positive, “basic skills” is a category described by NAEP as “partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.” In short, these are students who are going to need remediation in order to become proficient.

Part of the problem is that Texas schools aim for “basic” skills rather than “proficiency,” shortchanging students into believing they have acquired the skills necessary to succeed in college or the workplace. State curriculum standards and assessment tests foster this problem. In 2004, for instance, almost 80 percent of Houston ISD high school students passed the TAKS reading and math exams. Of Houston’s students who went on to take the SAT or ACT College entrance exam, three out of four students scored below average.⁴⁹ Keep in mind that these are supposedly the better-educated, “college-bound” students. Worse performing students are not likely to even consider college. The problem is that a passing score on TAKS is not an indicator of proficiency – only basic understanding. In short, students leave high school believing they are ready for college, until they actually take a college-level test or get to college and find out otherwise.

Efforts to address the Texas education deficit and ensure that more Texans graduate from high school with the academic skills they need should focus on two steps.

STEP ONE: All high schools, public and private, should require students to pass a rigorous skills test that aims for proficiency (not minimal comprehension in reading, writing, and math before receiving a diploma.

While this is no panacea in terms of resolving the education deficit, it would benefit Texas schools in three ways. At the very least, it helps confirm that Texas high schools have rigorous academics standards that are expected of students seeking a diploma. A reputation for being demanding and difficult would create a different set of expectations among students entering high school. As many educators know from experience, most students will live up to the expectations placed on them, and the quality of work they produce is a product of the quality of work demanded from them.

In addition, a more rigorous graduation exam adds value to a Texas high school diploma. Certification from the state in the form of a diploma should ensure that a student has a solid set of academic skills, not a minimal understanding. Employers and college admission boards should not be so quick to dismiss a high school diploma as meaningless. It is unfair to the students, parents, and teachers involved.

Most importantly, a more rigorous graduation exam helps high school ensure that students who receive a diploma possess the academic skills to succeed in college or the workplace. A key weakness of the existing TAKS test is that the demands are too low.

Depending on the subject area, standards set for passing scores range from a minimum of 50.9 percent to a high of 58.9 percent. The minimal passing scores for each subject area are listed in Table 9. On a typical grading scale in almost any classroom in the United

The Financial Impact on Texas When Students Fail to Learn Basic Skills

States, these scores would translate into the equivalent letter grades of an ‘F’ for math, science, and social studies and a ‘D’ for English. It should be noted that these scores are for the fully implemented TAKS test that will cover students graduating in 2007 or later. Until then, the requirements are actually less stringent. The result of these low standards is that even though students pass the test, they simply are not learning what they need to learn to succeed in college or the workplace.

<i>Subject Area</i>	<i>Total Test Items</i>	<i>Minimum Number Correct to Pass</i>	<i>Passing Score</i>	<i>Teacher’s Gradebook Standard</i>
English	73	43	58.9%	D
Mathematics	60	33	55%	F
Science	55	30	54.5%	F
Social Studies	55	28	50.9%	F

Another key weakness of the existing TAKS test is that it only tests students through the 11th grade, or the “exit level” as the test refers to it. If the student passes the test, there is no further assessment necessary for graduation. This has led many critics (and students) to claim that the senior year of high school is either a “blow-off” year or a “remedial” year designed to teach students what they should have already learned. The result is that the senior year of high school, which should be critical to preparation for college or employment, is either spent re-learning lower level material or filled with electives like band, choir, theater, and sports.

STEP TWO: Empower families to choose their children’s elementary and secondary schools.

What is commonly referred to as “school choice” in other states empowers parents to make important decisions about their children’s education. Implementing school choice is really quite simple. The way it works in most states is that the state gives coupons to parents that can be redeemed for enrollment at a public or private school of their choice within the state. The monetary value of these coupons or “vouchers” is usually the same amount it would cost to educate the child at a public school or less. The vouchers can only be spent on education.

Allowing parents to choose where their children go to school has three major advantages. First, it allows parents to select schools that meet their children’s needs. Parents might

consider the quality of the educational programs, the dedication of the teachers and staff, the curriculum, or the safety and condition of the school environment. These sort of choices are particularly important to Latino and African-American parents, who are often among the states poorest and find themselves trapped in some of the worst school districts. Wealthy families in the state already have school choice. They can seek out high-performing public schools for their children by paying to live in more exclusive school districts or by paying private school tuition. Such options do not exist for less affluent parents.

Six states — Colorado, Florida, Maine, Ohio, Vermont, and Wisconsin — and the District of Columbia currently offer voucher programs that allow parents to use public funds to send their children to private schools. In Wisconsin, the Milwaukee Parental Choice Program allows families at or below 175 percent of the poverty level to use vouchers to attend schools of their choosing. The program serves about 10,000 students. In Ohio, the Cleveland Scholarship and Tutoring Program allows parents of K-8 school students to use vouchers worth up to \$2,250 for tuition expenses. The voucher program was implemented by Ohio to help parents living in a school district where 72 percent of the students fail to graduate.

Recently the U.S. Supreme Court confirmed the constitutionality of school vouchers, even if parents choose a private, faith-based school for their children. The Supreme Court ruled that as long as parents and not the government choose the schools, vouchers cannot be construed as an attempt by the government to establish religion with public funds.

The Supreme Court decision clearly shows that school vouchers are no different than the GI Bill, which allows soldiers to use public funds to pay for their education at a public, private or religious university of their choosing.

The second advantage of school choice is that it creates healthy competition for students among public and private schools. Since parents have a choice as to where their children will go to school, both public and private schools have a powerful incentive to improve their programs. This has been the experience in Florida. Under the Florida program, public schools are assessed using standardized test scores and other factors and then assigned a letter grade of A through F. If a school receives a failing grade for any two years in a four-year period, students who have been assigned to that school for at least a year may receive vouchers to go somewhere else. Not unexpectedly, low-scoring schools that suddenly face voucher competition from other area schools show the strongest gains in standardized test scores.⁵⁰ In short, the fear of losing students and funds to other schools makes failing and weak schools beef up their academic programs. The effects of school competition have been similarly documented in studies on Vermont, Maine, Milwaukee, and Cleveland.

The third benefit of school choice programs is that they save money. In Washington, D.C., for example, private schools actually have a lower per pupil cost for education than the public schools. The result is that parents are actually able to purchase more education with their voucher dollars than they could through the public school system. Part of this is

a function of competition among private schools that helps keep tuition prices down. In addition, since private schools are more cost-conscious, they tend to monitor their expenditures more carefully. The D.C. public school system has not only been burdened with debt, but has made many additions to school facilities that critics decry as both unnecessary and wasteful.⁵¹

Florida has had a similar experience. Florida, in addition to its voucher program, provides tax credits to businesses that donate money to scholarship funds helping low-income families send their children to private schools. The non-partisan Collins Center for Public Policy studied the Florida tax credit program and concluded that the credit will save Florida \$3,844 per student using a scholarship credit voucher. The Collins Center estimates that the tax program will save Florida taxpayers more than \$55 million per year, and more than \$600 million over the next decade because private schools tend to spend money more efficiently than public schools.

The education deficit currently costs Texas about \$13.6 billion a year. If something is not done, the changing demographics of the state will result in a larger education deficit and an even greater financial loss. To remain competitive in the 21st century economy, Texas cannot fail to produce students with basic reading, writing, and math skills. To do so is unfair to parents, unfair to taxpayers, and unfair to the students who often don't know they are being shortchanged until it is too late.

If Texas is going to resolve the education deficit and make the most of its education dollars, promoting healthy competition among schools and requiring greater proficiency of academic skills are the two most effective and proven means of doing so.

ENDNOTES

¹ U.S. Census Bureau, *Educational Attainment in the United States, 2003* (June 2004).

² Texas Education Agency, *Secondary School Completion and Dropouts in Texas Public Schools, 2000-2001*, p. 13 (March 2004).

³ Ibid.

⁴ Jay P. Greene and Greg Forester, *Public High School Graduation and College Readiness Rates in the United States*. Manhattan Institute for Policy Research (September 2003).

⁵ "\$1 Million to Target Dropout Problem." *Houston Chronicle*, 7 December 2004, p. B1.

⁶ Steve Murdoch. *The Texas Challenge in the Twenty-First Century: Implications of Population Change for the Future of Texas*, Office of the State Demographer, available at <http://txsdc.tamu.edu/pubsrep/pubs/txchal.php> (2004).

⁷ Steve Murdoch, *The Texas Challenge in the Twenty-First Century: Implications of Population Change for the Future of Texas*, Office of the State Demographer, available at <http://txsdc.tamu.edu/pubsrep/pubs/txchal.php> (2004); and Carole Keeton Strayhorn, *The Cost of Underpaying Teachers*, Special Report from Office of Texas Comptroller (December 2004).

⁸ U.S. Census Bureau, "The Big Payoff: Educational Attainment and Synthetic Estimates of Work-Life Earnings" (2002).

⁹ Texas Education Agency, *Secondary School Completion and Dropouts in Texas Public Schools, 2000-2001*, p. 13 (March 2004).

¹⁰ Ibid.

¹¹ Jay P. Greene and Greg Forester, *Public High School Graduation and College Readiness Rates in the United States*. Manhattan Institute for Policy Research (September 2003).

- ¹² “\$1 Million to Target Dropout Problem.” *Houston Chronicle*, 7 December 2004, p. B1.
- ¹³ Texas Education Agency, *Secondary School Completion and Dropouts in Texas Public Schools, 2000-2001*, p. 27 (March 2004).
- ¹⁴ The employment rate is calculated at 77 percent for men and 59.9 percent for women as reported by the U.S. Census Bureau’s Current Population Survey for years 2002, 2003, and 2004. The value of skills learned in high school is operationalized as an “alpha factor” measuring the share of lifetime earnings that can be due solely to educational attainment. The comptroller’s report multiplies lifetime earnings by .60 to take into account the value of a high school degree. In sum, the comptroller’s calculation for each gender is *number of dropouts x employment rate x lifetime wage difference x .60 education share*.
- ¹⁵ That is, public school enrollment for the 12th grade class of 2001 was 127,769 students smaller than the 9th grade class four years earlier. These 9th graders should have all made it to the 12th grade, but the discrepancy between the two figures — the missing students — is referred to as the attrition rate.
- ¹⁶ Projections taken from Steve Murdoch. *The Texas Challenge in the Twenty-First Century: Implications of Population Change for the Future of Texas*, Office of the State Demographer (2004). The projections assume a rate of growth the same as during the 1990-2000 growth period. The projections provide data for all public school students broken down by ethnicity, elementary, and secondary combined. The calculations made here consider about a third of all students (31 percent) to be high school students, the same percentage reported in 2000-2001. Dropout rates from NCES were then used to determine the number of high school dropouts for each ethnic group over the next 20 years.
- ¹⁷ We mailed out 1,000 surveys to Texas businesses. Our response rate of 7.2 percent is fairly typical for a mail-out survey. Anywhere between 5 percent and 10 percent return is considered a good response.
- ¹⁸ Excerpted from Texas Education Agency, *Texas Essential Knowledge and Skills*, Chapter 110. English Language Arts and Reading Subchapter C. High School, Section 42.
- ¹⁹ *Ibid.*
- ²⁰ Excerpted from Texas Education Agency, *Texas Essential Knowledge and Skills*, Chapter 110. Math Skills Subchapter C. High School, Section 111.32.
- ²¹ Estimate derived by assuming 1.5 percent of Texas’ 8,161,321 employees, or 122,420 employees, were taught at an average expense of \$872 per person.
- ²² *Ibid.*
- ²³ The comptroller’s report adjusts this figure downward using the .60 “alpha factor” for a total of \$552 billion a year. This is the portion that the comptroller argues is reasonably attributable to the education level of the person. The higher figure is used here because it better reflects the true level of government spending on dropouts. While the argument that dropping out is not the only thing that might led a person to wind up on welfare makes intuitive sense — natural ability, work ethic, ambition, socioeconomic status, etc. all make a difference — the government doesn’t have the real world option to reduce its expenditures based on the personal background of each recipient. An expense is an expense, regardless of why it occurs.
- ²⁴ The comptroller’s report only attributes \$816 million a year of this expense as a direct result of dropping out of high school; the use of that .60 “alpha factor” used elsewhere in the report. However, the cost to the state and federal government is \$1.4 billion regardless of why these dropouts land in prison. At this point, placing blame doesn’t seem to make any sense when calculating the total costs. For this reason, this report uses the higher number provided by the comptroller’s office.
- ²⁵ Carole Keeton Strayhorn, *The Cost of Underpaying Teachers*, Special Report from Office of Texas Comptroller, p. 27 (December 2004).
- ²⁶ Approximately 36 percent of state spending on social programs is funded with federal aid. Office of the State Comptroller, Revenue Overview (2004-2005).
- ²⁷ *Institutional Developmental Education Plans and the Texas Success Initiative*, Texas Higher Education Coordinating Board, Division of Participation and Success, Appendix A (July 24, 2004).
- ²⁸ *Appropriations for Developmental Education in Texas Public Institutions of Higher Education*, Texas Higher Education Coordinating Board, Division of Finance, Campus Planning, and Research (April 2002).
- ²⁹ Telephone interview, 27 September 2004.
- ³⁰ *2003 Statewide Fact Book for Public Community, State, and Technical Colleges of Texas*, Texas Higher Education Coordinating Board (2004).
- ³¹ *Ibid.*, p. IV-12.

- ³² “It’s Back to Basics for Many in College.” *Houston Chronicle*, 26 September 2004, p. A1.
- ³³ *Appropriations for Developmental Education in Texas Public Institutions of Higher Education*, Texas Higher Education Coordinating Board; Division of Finance, Campus Planning, and Research, p.4 (April 2002).
- ³⁴ *Ibid*, p. 7.
- ³⁵ *Financing Higher Education: The Appropriate Balance among Appropriations, Tuition and Fees, and Financial Aid to Achieve the Goals of Closing the Gap*, Texas Higher Education Coordinating Board, p. 18 (March 2003).
- ³⁶ *2003 Statewide Fact Book for Public Community, State, and Technical Colleges of Texas*, Texas Higher Education Coordinating Board, p. X-1 (2004).
- ³⁷ *Appropriations for Developmental Education in Texas Public Institutions of Higher Education*, Texas Higher Education Coordinating Board, Division of Finance, Campus Planning, and Research, p. 3 (April 2002).
- ³⁸ It is common that students who have poor basic skills usually need help in both math and English. Of course, the estimate here is just an assumption. If students are taking fewer developmental classes it would mean that number of students in developmental education is higher than estimated here.
- ³⁹ *Appropriations for Developmental Education in Texas Public Institutions of Higher Education*, Texas Higher Education Coordinating Board; Division of Finance, Campus Planning, and Research, p.7 (April 2002).
- ⁴⁰ *Financing Higher Education: The Appropriate Balance among Appropriations, Tuition and Fees, and Financial Aid to Achieve the Goals of Closing the Gap*, Texas Higher Education Coordinating Board, p. 18 (March 2003).
- ⁴¹ *Remedial Education at Degree Granting Postsecondary Institution in Fall 2000*, National Center for Education Statistics, Department of Education (November 2003).
- ⁴² Enrollment data for private colleges and universities collected from IPEDS through National Center for Education Statistics.
- ⁴³ *Texas Association of Community Colleges Policy Reference Manual, Education Code 51.3062(b); 19 TAC 4.5*.
- ⁴⁴ Allan Parker Jr. and Stephen Ratliff. *Paying for Public High School Education Twice: Remediation in Texas Public Higher Education*. Texas Public Policy Foundation (May 1997).
- ⁴⁵ Telephone interview, 14 September 2004.
- ⁴⁶ Telephone interview, 23 September 2004.
- ⁴⁷ Telephone interview, 18 October 2004.
- ⁴⁸ Figures from the *Digest of Education Statistics*, available on the Internet at <http://nces.ed.gov/programs/digest/d03/tables/dt170.asp>.
- ⁴⁹ Source data for the SAT and ACT results comes from HISD RESEARCH, *College-Bound Assessment Report, 2003-2004*, published by the Houston ISD Department of Research and Accountability (Spring 2004). Data reports on Class of 2004 (12th graders in 2004).
- ⁵⁰ Jay P. Greene and Marcus A. Winters. *When Schools Compete: The Effects of Vouchers on Florida Public School Achievement, Education Working Paper*, Manhattan Institute for Public Policy (August 2003).
- ⁵¹ Casey J. Lartigue Jr. *School Choice in the District of Columbia: Saving Taxpayers Money, Increasing Opportunities for Children*. The Heartland Institute. Study available at <http://www.heartland.org/Article.cfm?artId=13282> (2003).



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