

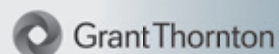
The Business Case for Education Reform

Colorado's education-to-workforce pipeline is broken.

The strength of our economy depends on a solution.

**ACTION
REQUIRED**

Report by Colorado Succeeds with support from Grant Thornton



Colorado schools are producing only half the workers needed to fill our increasingly high-skills jobs.

Colorado Succeeds Thanks Our Partners

This report is made possible by the generous financial support of JPMorgan Chase & Co. and Policy Innovators in Education Network (PIEⁿ).

We would also like to acknowledge our project partner, Grant Thornton LLP, and our research partner, Augenblick, Palaich and Associates, Inc., for their instrumental contributions to this report.

Finally, we thank our Business Advisory Council for providing guidance and expertise throughout the project.


James B. Hayes, Business Advisory Chair
Former Publisher, FORTUNE Magazine
Former Chairman & CEO, Junior Achievement

Tom Clark
Chief Executive Officer, Metro Denver Economic Development Corporation

Rocky Scott
Director, Business Development-Intellectual Property, Woodward, Inc.
Former Principal, McWhinney Enterprises
Former Chief Executive Officer, Greater Colorado Springs Economic Development Corporation

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 Grant Thornton

Letter from the President

March 2012

Many individuals and institutions make very compelling arguments supporting education reform based on the moral imperative, or the ethical duty, or the social justice assurance that is supposed to be a birthright of all Americans. Those are critical considerations, and an important lens through which to view the current education conditions.



There is, however, another critical vantage point from which to look at education—from an economic perspective. In this report, we illustrate how our education system impacts our workforce and economy, making the case for education reform in simple, practical, dollars-and-cents terms.

We look at systemic shortcomings and quantify the impact they have on the workforce pipeline, operating conditions for businesses, and the larger, long-term economic consequence for Colorado. We complement our data with vivid commentary from CEOs and industry leaders who provide insight on the skills, talent, and educational demands of the current or future workforce, and the tremendous career opportunities available for educated candidates.

This report duly acknowledges where Colorado performs better than other states and higher than the national average. It is equally important to learn from, and expand upon, the things that work well in Colorado's education system.

Ultimately, this is really all about the students, and their transformation into educated, qualified workers. As this report demonstrates, there are plenty of high-skill, high-wage jobs available—the state's employers are in search of talented young people.

To parents and students, we offer the same message that we offer policymakers and business leaders: it is imperative to provide high-quality schools that prepare our students for jobs. And, it is imperative for students to take advantage of every available opportunity.

Here, we examine the education system and calculate its impacts on the economy. But, for the individual student, the need for progress is even more important, and more urgent. For students, the effectiveness of our educational system—or lack of it—is a crucial fork in their road.

This report serves as a tool for policymakers, educators, taxpayers, parents, and students to better understand how our current policies, practices, and performance affect our economic future.

Sincerely,

Tim Taylor
President
Colorado Succeeds

Colorado schools
are producing only half the workers
needed to fill
our increasingly high-skills jobs.

49%

Making the Business Case for Education Reform

Quality education drives our economic system. Colorado earns a top ranking in the nation in terms of residents who have earned bachelor's degrees and beyond. However, there is a large disparity in rankings for Colorado in terms of graduation rates, college matriculation rates, and education funding. That tells us that Colorado is importing a large portion of its workforce, especially for the highly technical and highly paid positions that demand a post-secondary education.

Colorado's current education-to-workforce pipeline isn't flowing efficiently. Working with clients across many of Colorado's prominent industries, such as telecommunications, manufacturing, aerospace, and energy, we see a pervasive need for a long-term pool of well-developed, qualified, local employees. There is a strong business case to be made for bolstering the workforce pipeline: it is much more cost-effective to educate future employees and cultivate talent locally to feed the education-to-workforce pipeline.

In our business of accounting and consulting, we value data and use it to inform our decisions. In the same way, information, such as the data available in this report, is a valuable tool as state officials, educators, and business and community leaders consider and plan for transformations to our education system. Most will agree that improvement and more expedient progress are needed. Before we can design any modifications, we must understand the current state of education and business needs in our state.

Attracting people to Colorado is not a challenge, but it is not a reliable solution either. We need to place greater emphasis on improving our education system so that more of the people filling Colorado's many job opportunities that require advanced degrees and skills are also products of Colorado schools.

A strong education system attracts and retains new business. We should demand more from our education system and focus our efforts on quality improvement, which will have a direct impact on the vitality of Colorado's economy. Our economy cannot thrive if businesses remain dependent on employees relocating from out of state.

This report provides objective measures, and thereby valuable insight, into Colorado's current and projected workforce needs and how our education system can continue to meet those needs.

Sincerely,

Jim Burton
Denver Office Managing Partner
Grant Thornton LLP

Executive Summary

Half Full or Half Empty?

Colorado's education-to-workforce pipeline: a damage assessment and repair plan.

The facts are alarming and consequences dire: Colorado's schools fail, year after year, to graduate enough students to provide the skilled workforce needed to fill the jobs produced by Colorado businesses.

Data shows the education pipeline that supplies our workforce is broken, leaking precious human capital, and leaving Colorado businesses short of qualified workers at a time when they are creating a surplus of jobs.

In fact, Colorado is on pace to create over 600,000 high-skill, high-wage jobs between 2008 and 2018, but over the same period, will only produce half the educated workers needed to fill them. ^[1]

Unfortunately, this forces businesses to fill these jobs with workers relocated from out-of-state, and Colorado citizens will move down the economic ladder—resulting in lost opportunity and increased business and social welfare costs.

Our Challenge: Plugging the Leaks.

The challenge is to find a way to repair our educational system and ensure that it prepares enough workers to fill the jobs. To that end, this report examines Colorado's education-to-workforce pipeline, assesses the damage that prevents its efficient flow, and lays out the consequences for Colorado's economy.

Importantly, this report presents the first annual publishing of ten critical Pipeline Performance Indicators. This ten-point metric, gathered from Colorado Department of Education data, describes the health of our school system, provides a clear measure of efforts to fix the system, and enables us to see where to invest for the greatest return.

Our goal is to sound the alarm and enlist business and community leaders to address the unsatisfactory education-to-workforce pipeline. It's not enough to acknowledge the problem; we need all Coloradans to actively participate in the hard work of fixing it.

The Pipeline Is Seriously Broken.

Colorado produces an average of 61,000 jobs annually, created by retirements and new demand, requiring some level of college education. These high paying jobs exist across many different sectors and industries. But, only 30,000 students each year—half of those needed—will exit our educational system with the qualifications to fill these jobs.

Just as bad, Colorado K-12 schools matriculate only 82% of the high school graduates needed to fill jobs in thriving industries like retail, manufacturing, and others. Annually, there are 22,000 new jobs in Colorado that only require a high school diploma. But with the 28% high school dropout rate, the education system only produces 18,000 diploma-carrying candidates to fill these jobs.



"The state's education pipeline will determine how

Tisha Schuller, President & CEO, Colorado Oil & Gas Association

On the other end of the spectrum, our educational system is churning out twice as many high school dropouts as there are jobs for students who fail to graduate.

The Economic Implications Are Staggering.

According to a 2011 report from the Alliance for Excellent Education, when students stay in school and earn a diploma or college degree, it means hundreds of millions of dollars in increased earning, spending, gross state product, and state tax revenue.

In gross state product alone, a more efficient pipeline would gain nearly \$300 million annually—if only half the dropouts from the class of 2010 earned a diploma, and 60% of those completed some college.

On the expense side, when high school graduation rates go down, the resulting low-wage and -impoverished living causes the public tax bill for healthcare, social services, and criminal justice to rise dramatically.

In addition, businesses incur more costs when they hire workers from afar, and economic growth is stifled, as Colorado's attractiveness pales as a place for out-of-state businesses to move.

Recommendations for Repairing the Pipeline

Effective and timely pipeline fixes require deliberate focus, rigorous monitoring, and accountability tools in order to ensure proficiency for each school, subject, grade-level, and student.

Policy reforms, implementation, and investments must be ongoing, with results closely and specifically monitored, and adjustments quickly made to achieve continuous improvements.

Conclusion

From an economic perspective, Colorado's education-to-workforce pipeline must be fixed. Business and community leaders have a unique opportunity to provide leadership by endorsing and closely monitoring the ten Pipeline Performance Indicators. By repairing the pipeline, every child can learn and earn their way to success—for their own benefit *and* the benefit of the state's economy.

PIPELINE PERFORMANCE INDICATORS

1. Students in Full Day Kindergarten
2. 4th Grade Reading Proficiency
3. 4th Grade Math Proficiency
4. 8th Grade Reading Proficiency
5. 8th Grade Math Proficiency
6. College Readiness in Four Core Subjects on ACT
7. On-time High School Graduation
8. Matriculation from High School to College
9. College Enrollment Without Remediation
10. College Graduation Rate



well Colorado's economic engine performs."



PART I

Pipeline Performance

Introduction: The Economic Engine that Could.

Colorado is known for its can-do attitude and considerable progress in creating a vibrant business climate. This optimistic view is reflected in the business community's consistently held belief that Colorado's economy will outperform the nation's.^[2]

And why not be bullish? Our state is picture-perfect for business in many ways and has succeeded in attracting new businesses and growing our own. Even *Forbes Magazine* ranked Colorado in 2011 as the 5th best state for business.

But, those accolades and points of attraction will vanish, unless we improve the output of our schools.

While Colorado's economic engine is chugging along, one of the critical components for success is falling short—the in-state availability of a ready, qualified workforce.

And, that is where our positive economic reality turns south.

Data shows Colorado's education pipeline currently does not supply the workforce needed. And, without effective change, the workforce shortage will get worse—soon.

But, why worry? Colorado has always lured highly qualified workers from all over the world. By leveraging our state's great assets—good jobs, sunshine, and snow-capped peaks—businesses will fill jobs with imported workers, and keep on progressing.

Colorado benefits from the substantial migration of educated workers into the state. However, native workers and consumers with college-level education are still necessary to achieve strong and lasting economic growth.

The implications of our poorly performing education-to-workforce pipeline are far-reaching. And, if it is not repaired to keep pace with demand, our economic vitality will decline.

The Education Pipeline

On first look, Colorado's educational landscape appears promising: more than a third of Colorado residents held a bachelor's degree or higher in 2010, eight percent higher than the national average.^[3]

Is it fair and accurate to categorize the current state of Colorado education as a crisis?

The state's relatively new goal is to graduate all of its students from high school prepared for college and the workforce. Based on current outcomes, the state succeeds less than half the time. By any measure, this performance earns a failing grade.

To reverse the negative trend and ensure progress, the next critical step is to establish closely monitored metrics that reliably track the results of corrective actions and reforms.

“The most serious workforce challenge is finding workers with science, technology,

This high ratio of degree-holders implies that Colorado's educational system is a point of pride, and in some cases it is. Many Colorado schools are exemplary, producing exceptional outcomes.

However, the outlook is less impressive when compared to the performance goals of Colorado schools, and when outcomes are considered holistically, across all schools.

Goals vs. Results

State leaders recognize the importance of an effectively performing pipeline.

Case in point, ‘educating and training the workforce of the future’ is one of the six core objectives of the Colorado Blueprint published in 2011 by the Colorado Office of Economic Development and International Trade.

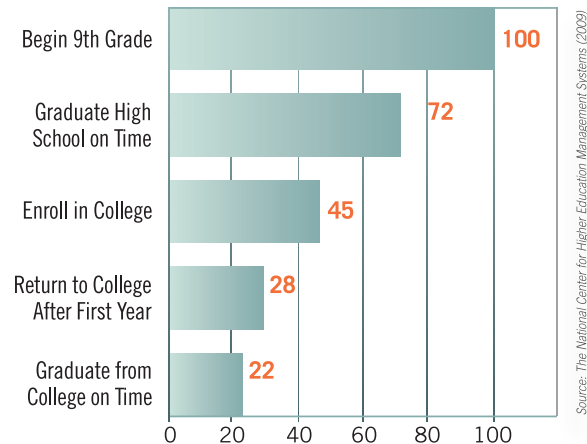
Governor John Hickenlooper, Lieutenant Governor Joe Garcia, and Commissioner of Education Robert Hammond, all have expressed their commitment. Their stated goal for the state’s K-12 public education system is to *graduate all students from high school prepared for college and the workforce.*

Yet, data shows, we fail to prepare a third of students: only 68% of students graduating from high school are able to enroll in college without the need for remediation.

Most students never achieve the level of education required by Colorado’s increasingly high-skills job market. As a supplier of workers, the pipeline is failing.

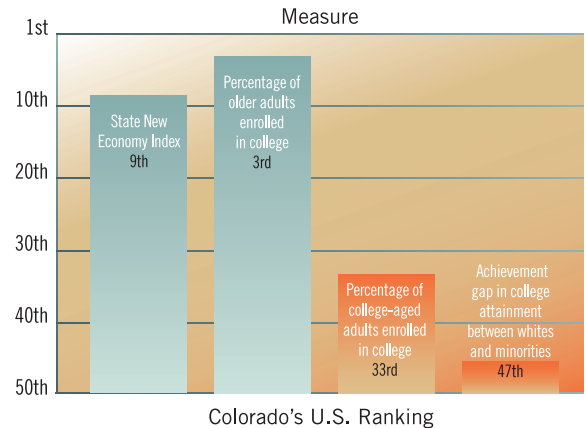
Colorado is ‘upside down’ in its workforce-to-education needs. Colorado ranks 9th in the nation on the new economy index, which is the measure of components that are knowledge- and innovation-based, globalized, entrepreneurial, and IT-driven. Yet, the state is 33rd in the percentage of our college-aged population attending college, and near last in closing the college-attainment achievement gap.

Colorado’s Annual Average Pipeline Performance



For every 100 students entering high school only 22 will earn an associate’s or bachelor’s degree.

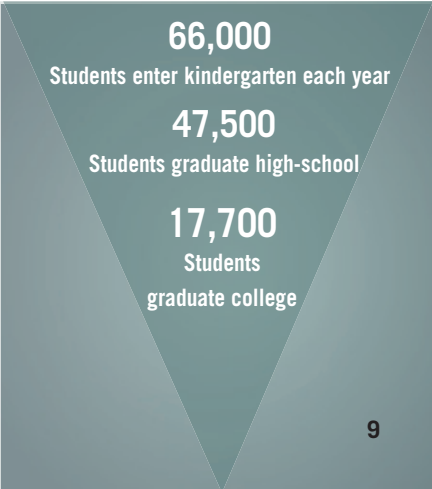
National Rankings: A Workforce-to-Education Mismatch



Source: The Education Commission of the States (ECS) and The National Center for Higher Education Management Systems (NCHEMS), College Completion in Colorado: The Impact on the Workforce and Economy (2010)

allenge we face is a dearth of capable engineering and mathematics skills.”

Elliott Pulham, CEO, Space Foundation



Assessment Points & Pipeline Failures

Early Indicators--Fourth Grade NAEP Scores

Long before Colorado students enter high school, early warning signs show whether a student is on track to succeed academically.

One strong indicator of student progress is the internationally benchmarked National Assessment of Educational Progress (NAEP) scores. NAEP is a more rigorous and reliable proficiency assessment than Colorado's state test, the CSAP, and therefore, considered to be a key performance indicator.

As early as 4th grade, NAEP math and reading scores show Colorado students are falling short.

In 2011, results were discouraging: Only 47% of 4th graders and 43% of 8th graders scored proficient in math. Reading proficiency levels were even lower, with 39% in 4th and 40% in 8th grade.

Although Colorado's NAEP scores have increased modestly over time, they illustrate known problem points in our system and illuminate areas that need attention and innovative solutions.

High School Success & College Readiness Indicators

Upon entering high school, students who have already failed to meet proficiency standards typically fall further behind.

Consequently, annual high school graduation rates have shown no real growth over the past decade, vacillating between 74% and 79%. The lack of growth is significant, especially since considerable resources have been spent to improve the trend.

In fiscal year 2010-2011, Colorado spent 46% of its general fund—\$4.3 billion—on its 843,000 students. This level of investment reflects the high priority placed on education by state leaders, but yielded only a 72% high school graduation rate and 22% college graduation rate.^[4] These unimpressive completion rates have been mostly stagnant for the past five years.

Many of the students who did complete high school failed to meet college readiness standards. Only 23% of students met 2011 ACT college readiness standards in all four core subjects. Interestingly, nearly the same number, 22% of an average cohort of students entering 9th grade, ultimately earn an associate's or bachelor's degree.

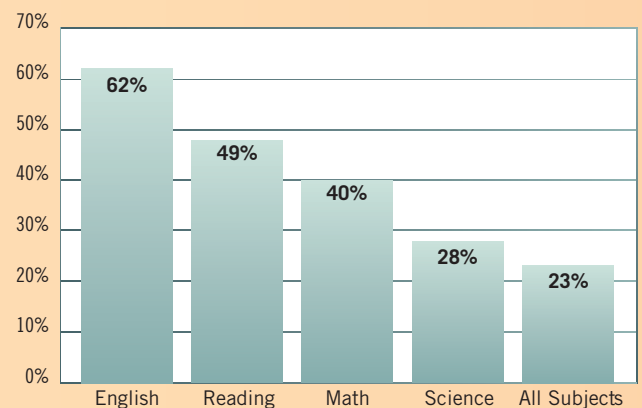
These numbers foretell the problem many Colorado employers have in hiring workers needed from within the state.

BROKEN PIPELINE

In Colorado, nearly 66,000 students enter kindergarten each year, but only a fraction of them earn the diploma or degree they will need to succeed in the globally competitive workforce.

- Only 23% demonstrate college readiness on the ACT
- Only 72% graduate from high school
- Only 45% transition to college, but less than a quarter of those will earn a degree
- Less than 50% of the high-skilled jobs have Colorado-educated workers prepared to fill them

Percentage of Colorado High School Graduates Meeting ACT College Readiness Benchmarks by Subject



Source: Act, Inc., The Condition of College and Career Readiness (2011)

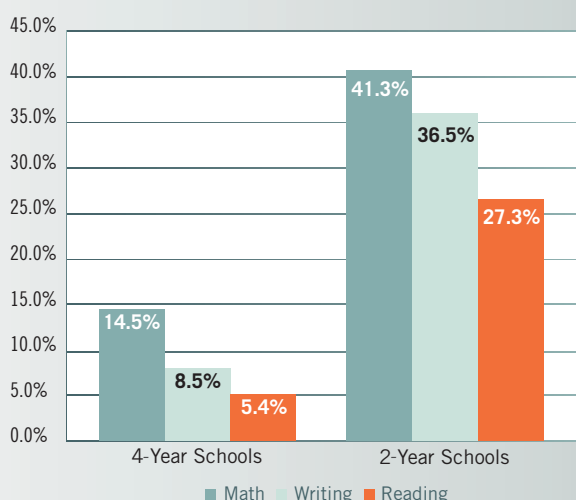
Only a small portion of Colorado graduates is prepared to succeed in entry-level college courses.

"Colorado's education pipeline is so damaged that it doesn't even produce enough high school graduates to meet the workforce demands for entry-level positions."

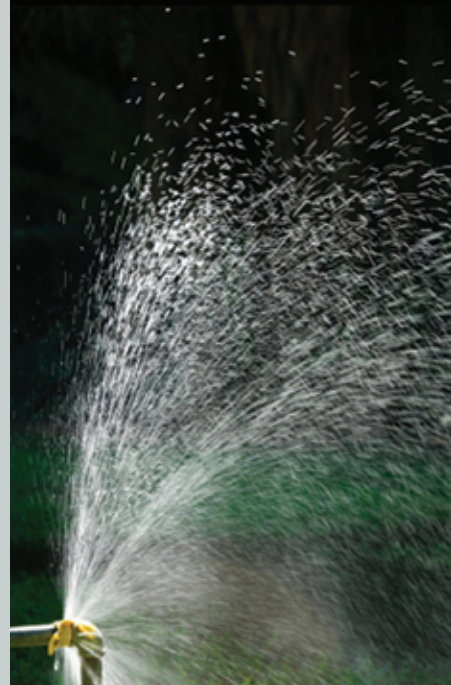
Pete Coors, Molson Coors Brewing Co.

Percent of Colorado High School Graduates Assigned to Remediation in College, by Subject and Post Secondary Institution Type (2009-10)

Poor preparation in high school is negatively affecting students who progress to 2- and 4-year colleges, but is most significant for those in 2-year schools.



Source: Colorado Commission on Higher Education, 2010 Legislative Report on Remedial Education (2011)



COLLEGE REMEDIATION

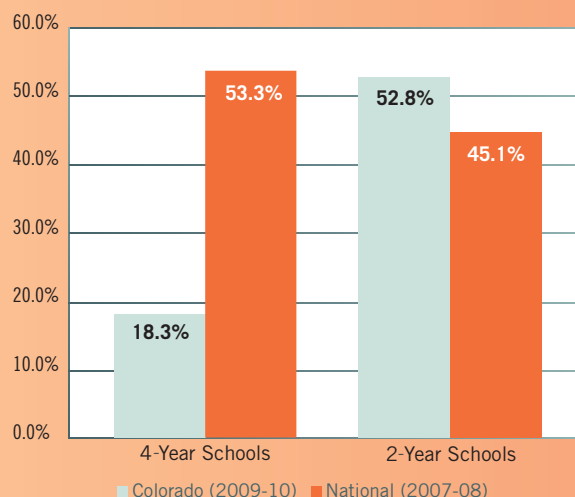
Poor preparation for college impacts students in 2-year colleges most acutely. Approximately 53% of those enrolled in 2-year colleges take at least one remedial class, compared with 18% in 4-year colleges.

At 4-year colleges, taking even one remedial course substantially reduces the likelihood of graduation within 6 years. Students who did not take a remedial course have a 30.1% chance of graduating within 6 years, while this drops to 9.7% among those who took a remedial course.

Many colleges do not award credit for remedial courses. This often delays the completion of credit-bearing courses and can have a negative effect on retention and graduation. In both 2- and 4-year schools, students who had taken a remedial class were less likely to return for a second year of college.

Colorado students in both 2- and 4-year colleges were more likely to take remedial math, suggesting required high school math courses are not adequately preparing students to succeed in college.

Percent of Students Assigned to at Least One Remedial Post Secondary Course During the School Year, by Post Secondary Institution Type



Source: Colorado Commission on Higher Education, 2010 Legislative Report on Remedial Education (2011)

More than half of Colorado students in 2-year colleges take at least one remedial course, while less than 20% of those in 4-year schools require remediation.

A Bad Trend Will Get Worse

Demographics and the Achievement Gap

To get the full picture of performance, we must look at the demographics of students who are not progressing, compared to those who are.

The data reveals a convincing story and, again, it is not an encouraging one.

In Colorado, academic performance varies widely by demographic subgroup and results in a significant achievement gap that is pronounced for African-American and Hispanic students. These students' NEAP scores, and high school graduation and college completion rates are dramatically lower than those of white counterparts.

For example, when viewed by ethnic group, on-time high school graduation rates are:

- 80% for white students
- 64% for African-American students
- 56% for Hispanic students

In addition, white students are more likely to meet three or more ACT college benchmarks each year than African-American students or Hispanic students. According to 2011 data, those meeting at least three out of four college readiness benchmarks are:

- 47% of white students
- 23% of African-American students
- 14% of Hispanic students

Shifting Demographics

Today, Colorado's population as a whole is predominately white, with 74% Caucasian, 17% Hispanic, 4% African-American, and 5% other groups reported in 2010.

However, the make-up of our state is shifting, adding to the Hispanic population by 4% by 2020. The U.S. Census Bureau predicts in 2020 Colorado's population will be 70% Caucasian and 21% Hispanic.

While the state's K-12 students are currently 43% minorities, the percentage of minority students will increase as the population changes. Soon, minorities will be the majority of students in Colorado's public schools.

Significantly, minority students are the most underserved students in the pipeline today, which results in the achievement gap. When changing demographics and the current disparity in achievement is factored in, even fewer workers will gain the skills needed to fuel our largely knowledge-based economy.

The net: Colorado's workforce shortage is ramping up, underscoring the need to close the achievement gap in order to assure college and workforce readiness for all students.

Benefits of Education

Not surprisingly, one of the clearest benefits of higher education is decreased unemployment. Individuals without a high school diploma are most likely to be unemployed—nationwide, the rate for that group is 15%; while individuals with professional degrees had a national unemployment rate of only 2.4% in 2010.

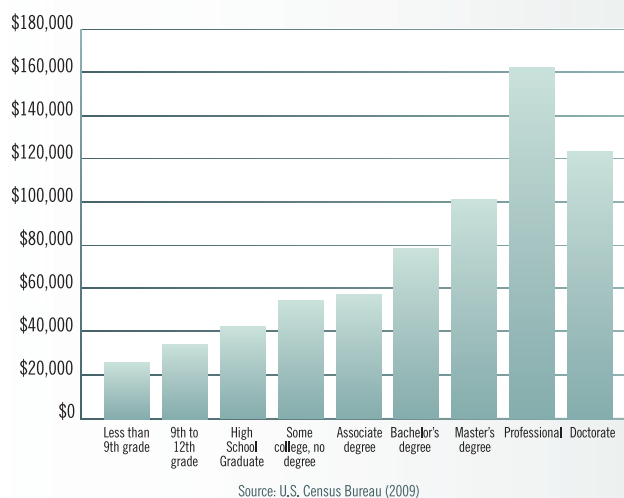
Furthermore, annual earnings increase with education. Individuals without a high school degree earned about \$26,000 annually, while a professional degree increases earnings to about \$163,000 annually.

"Not every student in Colorado will decide to go to college, but absolutely every student should graduate high school properly prepared to succeed in their chosen college or career pathway."

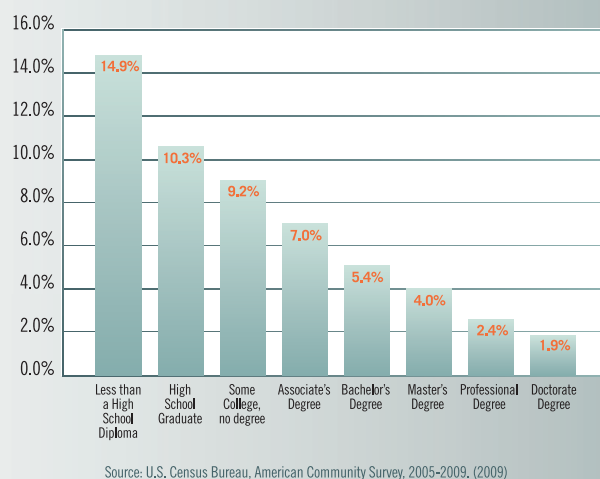
Pete Coors, Molson Coors Brewing Co.



**Annual Earnings by Highest Educational Attainment
(Year-Round Full-Time Workers, Age 18+ 2009)**



National Unemployment Rate By Highest Educational Attainment, 2010



Viewed together, these graphs illustrate the converse relationship between rate of annual earnings and unemployment as educational level increases.

JOB MARKET TOUGHER THAN EVER

In today's global economy even military service requires a high school diploma or equivalent, so it is no longer an option for those who do not achieve that level of education. Nationwide, the U.S. State Department reports:

- Only one in four students complete high school in four years
- 75% of young adults don't qualify to serve, largely due to inadequate levels of education
- Among those who do graduate, 30% don't do well enough on aptitude tests in math, science, and English to serve

Source: Council on Foreign Relations, U.S. Education Reform & National Security Report (2012)

"...without comprehensive and dramatic improvement in most under-performing schools, all of our kids will be working at a striking international competitive disadvantage in 20 years."

Kent Thiry, Chairman & CEO, DaVita, Inc.



PART 2

Workforce Demands & Economic Impact

Colorado's Labor Force, Industries & Jobs

In the coming years, Colorado's economic engine is expected to keep chugging along, with population growth and the demand for a skilled labor force continuing at a steady pace.

The state's overall population is projected to increase by one million people, to more than six million by 2020, from five million in 2010.

Currently, no single industry dominates, and that trend will continue. According to the Colorado Department of Labor & Employment, Colorado's largest industry is wholesale and retail trade, providing approximately 16% of jobs.

Other industries providing 10% or more of Colorado jobs are:

- Mining/Utilities/Construction/Manufacturing
- Management of Companies & Enterprises
- Health Care and Social Assistance
- Accommodation and Entertainment

High-profile and fast-growing industries expected to add high-wage jobs are:

- Aerospace & Satellite
- Bioscience
- Renewable Energy
- Telecommunications and Digital Media

By 2018, the largest industry employers in Colorado are projected to be health care and social assistance, at over 300,000 employees. The retail trade industry is projected to employ just over 250,000.^[5]

Colorado's Workforce Supply & Educational Productivity

Currently, Colorado generates only half the educated workers needed to meet workforce demand.

According to the Center on Education and the Workforce at Georgetown University, in 2018, 67% of the 3.2 million jobs in Colorado will require some postsecondary education. Based on an average annual growth, Colorado will need to fill about 92,400 jobs each year. Over the same period of time, about 67,000 people annually will move from the education pipeline into the workforce.

COLORADO'S NEED FOR EDUCATED WORKERS BY 2018

- 924,000 job vacancies will be created between 2008 and 2018, due to new jobs and retirement
- 67% of jobs will require some college education—more than the 63% national average
- Nationally, Colorado will rank
 - 3rd in the portion of jobs requiring a bachelor's degree
 - 5th in the portion of jobs requiring some postsecondary education

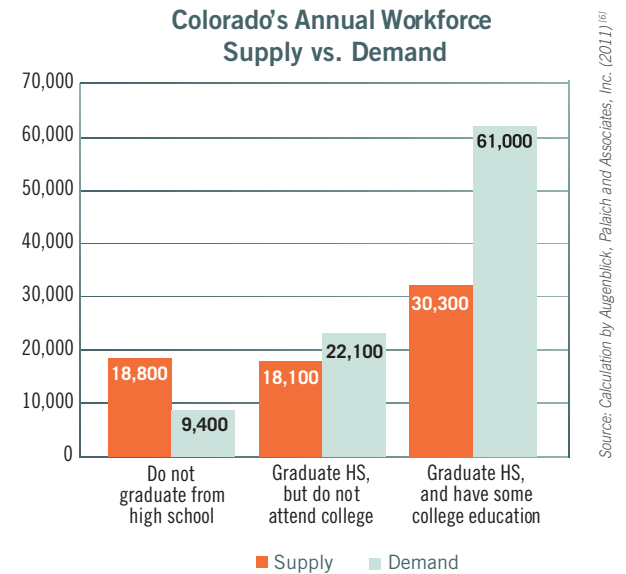
“The health care industry will add years in Colorado...by continuing we can build a pipeline of workers

This evolving job market demands 61,000 new workers each year with some postsecondary education, but only 50% of those will be produced in Colorado; and 22,100 workers with at least a high school diploma, but only 82% will be produced.

By contrast, there will be 9,400 jobs available for workers who did not graduate from high school, but 18,000 dropouts will be produced—twice the number needed—to compete for those spots.

To keep up with the demand, Colorado needs to double production of college-educated workers. Since 2018 is right around the corner, fast action is needed to repair the education pipeline. Only by significantly improving output, can we ensure that businesses and civic institutions have the human capital needed to further the economic strength and quality of life synonymous with Colorado.

Naturally, some of this demand will continue to be met by people choosing to relocate to the state. Colorado's ability to attract educated workers is, in a sense, a competitive advantage. But, it is also an expensive practice for local businesses, and provides another practical, dollars-and-cents argument for increasing the pool of locally educated workers.



Colorado is producing half the workers with some college education needed; yet two times those without a high school diploma needed.

THE CURRENT EDUCATION PIPELINE PRODUCES THE FOLLOWING RESULTS WITH EACH COHORT OF 9TH GRADERS:

- 28% (18,800) drop out without earning a diploma – 2 times more than workers needed
- 27% (18,100) earn a high school diploma but do not go to college – 18% less than workers needed
- 45% (30,300) continue into postsecondary education – 50% less than workers needed
- 22% (14,500) earn a college degree

about 300,000 jobs in the next 10
to improve academic performance...
for this industry."

Donna Lynne, Colorado President, Kaiser Permanente

66,000
Students enter kindergarten each year

47,500
Students graduate high-school

17,700
Students graduate college

Economic Consequences: Colorado's Supply and Demand Are Upside Down

Lost Opportunity

In many ways, Colorado's education-to-workforce pipeline looks good compared to other states.

Colorado is above average in high school academic performance, and the number of people who enter college, return after a year, and obtain a degree. Our high school dropout rate is below the national average.

Unfortunately, our 72% on-time graduation rate simply puts Colorado among the best of the bad.

According to estimates by the Alliance for Excellent Education, the annual and cumulative fiscal impact of those 17,000 Colorado students who drop out of high school each year is extreme. The lost lifetime earnings in Colorado for the 2010 class of dropouts alone total more than \$4.5 billion.^[7]

Conversely, when citizens have higher levels of education, the entire state economy benefits. Increased earnings result in increased gross state product, consumer spending, and taxable revenue. There are also significant cost savings associated with reduced healthcare, social services, and criminal justice expenses.

One of the main assessments companies make in evaluating places for relocation is the supply of qualified workers. As businesses grow and relocate in Colorado, the competitive landscape toughens, and the impact of the qualified worker shortage worsens.

Cost of College Remediation

Whether the cost is born by the state or individuals, the costs of remediation are considerable: approximately \$10 million annually at 2- and 4-year public colleges in Colorado.

To be clear, this means that students and taxpayers are paying college tuition rates for unprepared students to learn basic academic lessons in college that they should have mastered in high school as a condition of earning a diploma.

When the impact of remediation on graduation rates is included, the annual unrealized earnings lost in Colorado are \$25.7 million.

Due to the impact of remediation on students in 4-year colleges and the earnings effect of a 4-year bachelor's degree, this cost is attributed largely to students in 4-year colleges. The aggregate annual cost of remediation in Colorado is more than \$35 million.^[8]

Currently, each cohort of students moving through the education pipeline produces a negative economic impact. The net loss to the state caused by the current dropout rate is more than \$6 million per year. This cost accumulates across every cohort moving through the education pipeline.

However, if Colorado's high schools graduated all of their students fully prepared for college, the Alliance for Education Excellence estimates that the state would save almost \$52.1 million a year in community college remediation costs and lost earnings.



NEEDED: MONEY BETTER SPENT

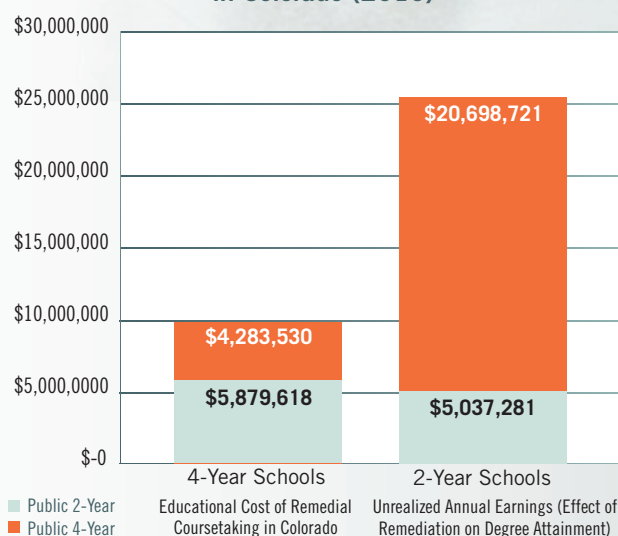
How effectively are our educational resources being used?

What is the impact of the \$4.3 billion spent annually on K-12 education?

A system that graduates only 72% of students, with only 45% matriculating to college, and of those, 29% requiring remediation, is not an acceptable return on investment for the citizens of Colorado.

If the education pipeline was modified so that it produced the workforce needed for expected jobs, the fiscal impact would switch from negative to positive. Even partial progress would realize huge benefits.

Costs of Remedial College Coursetaking in Colorado (2010)



Source: Calculation by Augenblick, Palaich and Associates, Inc. (2011). Delta Project (2009) / U.S. Department of Labor, Bureau of Labor Statistics (2011) / Colorado Commission on Higher Education, 2010 Legislative Report on Remedial Education (2011) / U.S. Census Bureau, Income Poverty and Health Insurance Coverage in the United States (2009)

WHAT IF THEY STAYED IN SCHOOL?

If half of Colorado's 17,300 dropouts stayed in school and earned a diploma, the impact would be:*

- \$92 million more earnings
- \$72 million more spending
- \$117 million more gross state product
- \$6.3 million more state tax revenue

If 60% of those 8,650 new high school graduates complete some college or a degree, then:

- \$130 million more earnings
- \$95 million more spending
- \$165 million more gross state product
- \$9.1 million more state tax revenue

Source: Alliance for Excellent Education, *The Economic Benefits of Helping High School Dropouts Earn both High School Diplomas and College Degrees* (2011)
*based on the class of 2010

"A nation's—or, in this case, a state's—strength can be measured by its intellectual wealth, which is determined, in large part, by how much we are willing to invest in the education of our children."

Elliott Pulham, CEO, Space Foundation



PART 3

Findings & Conclusions

Education: Mission Critical

The findings are troubling: Colorado is under performing at nearly every critical junction in the education pipeline. Of the 66,000 kids that enter kindergarten annually in Colorado, only 17,700 exit the education system with a college degree. That leaves 48,000 unprepared to succeed in the competitive global job market and economy.

Our examination reveals a growing shortage of qualified, local workers, which leads to serious consequences for state businesses and economy.

Clearly, this is a growing crisis. Our workforce pipeline needs repair—and fast.

Failure Is Not an Option

Improving educational outcomes is not an easy task—but, with the state's economic future at stake, it is mission critical to succeed.

Every stakeholder—policymakers, public servants, teachers, school leaders, parents, students, business and civic leaders, and the general public—must take action. If we work together, we can accomplish this critical mission and ensure a productive educational system throughout the state.

Which Comes First, Money or Performance?

Taxpaying individuals and businesses often say that education must demonstrate progress and feasible improvement in order to warrant additional funding.

However, the reverse can also be argued: public education needs more funding to raise performance. Ultimately, the fates of these seemingly opposite camps are intertwined.

There is little hope of making the case for additional funding without improved outcomes for all kids. At the same time, additional funding with proper accountability could spur innovation and accelerate progress.

To strike the right balance, Colorado must monitor, measure, and maintain the critical components of the education pipeline that correlate with long-term student success. Investments in education must be based on progress made toward closing the achievement gap, raising ACT scores, increasing graduation rates, and lowering college remediation rates.

Equally important, constructive consequences must be levied when targets are not met. Each measured outcome needs awards and consequences attached.

**COLORADO'S ECONOMIC
SUCCESS IS WHOLLY RELIANT ON
THE STATE'S ABILITY TO FIX ITS
BROKEN EDUCATION PIPELINE.
EVERY CITIZEN:**

- Has a vested interest in repairing the system
- Can take action to define and support change
- Must work to adopt and achieve clear, ambitious goals

“The responsibility for developing
fulfill workforce needs

If additional funding is not on the condition of accomplishing these goals, with rigorous accountability tools in place, it will be impossible to make the case that any additional investment is necessary.

Repairing the Education-to-Workforce Pipeline

There are several pipeline repair efforts underway, many focused on analyzing and updating Colorado's school funding model. The School Finance Partnership, led by the Colorado Children's Campaign – co-chaired by Chris Watney, Cary Kennedy, and Bob Deibel – is working to address the school funding challenge. An initiative led by Don Kortz and Don Elliman, in partnership with Colorado Forum and Governor Hickenlooper's TBD Task Force, are hard at work on the issue.

At the heart of each of these repair efforts is a complex dilemma. The challenge is striking an effective balance between granting schools additional funding in order to improve performance, and requiring schools to demonstrate improved performance before additional funding is granted.

Increasingly, it is apparent that to improve the educational outcomes, our funding model must be updated to allocate funds more effectively. Success requires the state make high-impact, results-driven investments in Colorado students and the system.

Any increase in funding must be integrally linked to specific, targeted outcomes, and concrete signs of improvement on specific timelines.



young people into individuals who can
lies with all of us—schools, parents,
businesses, taxpayers.”

Elliott Pulham, CEO, Space Foundation

66,000
Students enter kindergarten each year

47,500
Students graduate high-school

17,700
Students
graduate college

Pipeline Performance Indicators

Ten-Metric Checklist Points the Way

The ten *Pipeline Performance Indicators* reflect the holistic health of Colorado's education pipeline. This report establishes this ten-metric checklist, which, for the first time, can be easily viewed in one place.

Annually, Colorado Succeeds will compile and publish the ten indicators, enabling each of us to track progress and make adjustments as needed. This monitoring and reporting mechanism shows successes and failures in our educational system. Each year, we will clearly see whether the state is performing better, worse, or the same.

The ten Pipeline Performance Indicators are:

1. Students in Full Day Kindergarten
2. 4th Grade Reading Proficiency—NAEP scores
3. 4th Grade Math Proficiency—NAEP scores
4. 8th Grade Reading Proficiency—NAEP
5. 8th Grade Math Proficiency—NAEP
6. College Readiness in Four Core Subjects on ACT
7. On-time High School Graduation
8. Matriculation from High School to College
9. College Enrollment Without Remediation
10. College Graduation Rate

Compiled from information made available through the Colorado Department of Education and the Department of Higher Education, seven of the ten indicators were priorities in Colorado's Race to the Top application, which won broad support from education stakeholders statewide.

Also, the college graduation rate used by the state counts the number of students who begin their freshman year and earn a 2- or 4-year degree, a much higher number than counting how many 9th graders persists through college (22%).

More of the Same Worsens Crisis

The Pipeline Performance Indicators show over the last five years, Colorado's educational performance has not gotten much better. Basically, it is stagnant—stuck in low performance mode. Continuing to do the same thing will only exacerbate the ongoing shortage of educated workers needed to fill our increasingly high-skills jobs.

PIPELINE PERFORMANCE INDICATORS TREND DATA

INDICATORS	2007	2008	2009	2010	2011
1. Students in Full Day Kindergarten	34%	40%	53%	60%	64%
2. 4th Grade Reading Proficiency- NEAP	36%	-	40%	-	39%
3. 4th Grade Math Proficiency- NEAP	41%	-	45%	-	47%
4. 8th Grade Reading Proficiency- NEAP	35%	-	32%	-	40%
5. 8th Grade Math Proficiency- NEAP	37%	-	40%	-	43%
6. College Readiness in Four Core Subjects on ACT	20%	20%	22%	23%	23%
7. On-time High School Graduation	-	70.7%	73.3%	72.4%	73.9%
8. Matriculation from High School to College	-	-	-	66.8%	-
9. College Enrollment Without Remediation	70.3%	70.1%	70.7%	71.4%	68.2%
10. College Graduation Rate					
2-Year Colleges	23.2%	25.4%	23.3%	20.9%	-
4-Year Colleges	56.0%	58.3%	57.7%	57.7%	57.2%

Pipeline Performance Indicators show, over the last five years, our overall educational performance has not improved. Doing more of the same is not an option.

Return on Investment Falls Short

Each year Colorado spends a staggering sum on K-12 public education—nearly half of the state’s general fund budget, funded

by Colorado taxpayers. Citizens have every right and reason to expect our money be put to optimal use.

COST OF K-12 EDUCATION	2007	2008	2009	2010	2011
State Spending on K-12 Education	\$7,635,777	\$8,012,467	\$8,262,667	\$6,456,649*	-
Per Pupil Spending	\$8,167	\$9,079	\$8,321	\$8,178*	-

Source: United States Census Bureau: Public Education Finances 2009, 2008, 2007. *Colorado School Finance Project: Per Student Current Spending and Revenue for K-12 Public Education (2011)

A 72% high school graduation rate is an unimpressive return on our investment, and will not sustain our education-reliant economy.

Call To Action

Legislators, educators, and business and civic leaders across the state must adopt and implement a unified effort to improve student performance on each of these indicators. Every student deserves—and the economy needs—an educational system that delivers successful outcomes.

In the interest of all Coloradans, college and career readiness must be the standard by which our education system is measured. Assessing and monitoring progress is the first step toward reaching this goal.

Recommended Steps for Success

1. Make Colorado's educational performance your business.

It is time act like our success depends on educational outcomes. According to the data, it does. Billions of dollars of economic growth are at stake, and billions of dollars of reduced spending can be realized.

2. Demand excellent outcomes for students—from start to completion.

The standard of excellence must be nonnegotiable—beginning with early childhood education; continuing through elementary, middle, and high school; and permeating every college and university.

3. Get behind the serious work needed.

Each of us must support, encourage, and applaud serious efforts toward systemic improvements. The state is off to a good start. The Governor’s Office, Department of Education, and business leaders have defined the goal clearly—prepare all of Colorado’s students to succeed in college and the workforce.

4. Measure, monitor, and adjust.

Each year, Pipeline Performance Indicators clearly show whether our educational outcomes are better, worse, or the same. Each of us can track the progress and support adjustments to improve performance.

“This is no longer about
someone else’s kids.
This is about all kids...”

Kent Thiry, Chairman & CEO, DaVita, Inc.



About Colorado Succeeds

Colorado Succeeds is a non-profit, non-partisan coalition of business leaders committed to improving the state's education system. The organization was founded on the premise that the business community has the obligation, opportunity, and capacity to increase the college and workforce readiness of all students through an ambitious, aggressive and comprehensive reform agenda.

We believe:

- Colorado has systemic education problems
- Those shortcomings threaten the economic vitality of the state and businesses operating within the state
- Business has multiple reasons to take a leadership role in aggressively pursuing reforms

Our vision is that every student in Colorado has access to a high-performing school and graduates with the knowledge, skills, and behaviors necessary to succeed in a competitive global economy. Colorado Succeeds provides the aggressive policy, advocacy, and accountability work to make this ambitious goal a reality.

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ENDNOTES

[1] Georgetown University, Center on Education and the Workforce, *"Help Wanted: Projections of Jobs and Education Requirements Through 2018"* (2010)

[2] Leeds Business Confidence Index; p. 11; *47th Annual Colorado Business and Economic Outlook 2012*; ©2011; Business Research Division, Leeds School of Business, University of Colorado Boulder

[3] U.S.Census Bureau (2010), *Educational Attainment 2010 American Community Survey 1-Year Estimates*, Table S1501; <http://factfinder2.census.gov/faces/tableservices>.

4] Tom Mortenson --Public high school graduation rates, Tom Mortenson --College-going rates of students directly from HS, *ACT Institutional Survey* --Freshmen to sophomore retention rates, *NCES-IPEDS Graduation Rate Survey*, <http://www.higheredinfo.org> (2009).

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[6] Calculation by Augenblick, Palaich and Associates, Inc. (2011). Data from Georgetown University, Center on Education and the Workforce, *"Help Wanted: Projections of Jobs and Education Requirements Through 2018"* (2010); Colorado Department of Education (2011), Colorado Commission on Higher Education (2011)

[7] Alliance for Excellent Education, *Potential Economic Impacts of Improved Education on Colorado: 2009, Fact Sheet*, © Alliance for Excellent Education, Washington, DC 20036

[8] Calculation by Augenblick, Palaich and Associates, Inc. (2011) Data from Delta Project (2009); U.S. Department of Labor, Bureau of Labor Statistics (2011); Colorado Commission on Higher Education, *2010 Legislative Report on Remedial Education* (2011); U.S. Census Bureau, *Income, Poverty and Health Insurance Coverage in the United States* (2009)

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BUSINESS LEADER SUPPORT: FULL TEXT OF QUOTES

"A nation's—or, in this case, a state's—strength can be measured by its intellectual wealth, which is determined, in large part, by how much we are willing to invest in the education of our children. The most serious workforce challenge we face is a dearth of capable workers with science, technology, engineering and mathematics skills. The responsibility for developing young people into individuals who can fulfill workforce needs lies with all of us—schools, parents, businesses, taxpayers. The problem has been growing since the end of the Apollo era and it's time we stopped wringing our hands and did something about it."

– Elliott Pulham, CEO, Space Foundation

"The oil & gas industry is the fuel that keeps so many other industries in Colorado running strong, powering the state's economic engine. Our work relies on a constant and sufficient flow of skilled high school and college graduates into the workforce. The state's education pipeline will determine how well Colorado's economic engine performs."

– Tisha Schuller, President & CEO, Colorado Oil & Gas Association

"We have a simple saying at DaVita that is embedded in our culture: "This is not a dress rehearsal, this is your life." It conveys our passionate commitment to excellence and a sense of urgency for what we do in healthcare, bioscience. It's fitting for educators and policymakers as well. This is no longer about someone else's kids. This is about all kids, no matter how good some schools are for the kids lucky enough to attend them. Because without comprehensive and dramatic improvement in most under performing schools, all of our kids will be working at a striking international competitive disadvantage in 20 years."

– Kent Thiry, Chairman & CEO, DaVita, Inc.

"Health care is one of the few sectors where employment increased during the recession and the demands for qualified professionals continues to grow. The health care industry will add about 300,000 jobs in the next 10 years in Colorado. There are likely to be shortages in certain professions—including primary care physicians—and challenges in getting many health care professionals into our rural communities. By continuing to improve academic performance and link students to the needs and opportunities of the health professions, we can build a pipeline of workers for this industry."

– Donna Lynne, Colorado President, Kaiser Permanente

"Manufacturing and retail sales are thriving, growing industries in Colorado and account for well over 10% of the state's current jobs. These industries, unlike most, still have a significant number of jobs that don't necessarily require a college degree. However, Colorado's education pipeline is so damaged that it doesn't even produce enough high school graduates to meet the workforce demands for entry-level positions. We simply must provide every child an excellent K-12 education. Not every student in Colorado will decide to go to college, but absolutely every student should graduate high school properly prepared to succeed in their chosen college or career pathway."

– Pete Coors, Molson Coors Brewing Co.



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