

Investing In The Next Generation:

How Education Drives Colorado's Economic Future



“Education is not only the foundation of opportunity and social equity – it is the infrastructure on which our economy is built.”

John Hickenlooper
Mayor
City of Denver

pe+bc
Minding our future.
**Public Education &
Business Coalition**

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WHO WE ARE ...

*The Public Education & Business Coalition
is a partnership of business and education
leaders joining forces to support and encourage
excellence in Colorado's public schools.*

OUR MISSION ...

*... is to cultivate excellence in public schools so
all students succeed in learning and in life.*

WHAT WE DO ...

We accomplish our mission through

- *front-line initiatives in Colorado schools that promote teacher quality, school leadership, and school reform*
- *policy initiatives promoting support for system-wide excellence in public schools*
- *collaborative partnerships between business and education*

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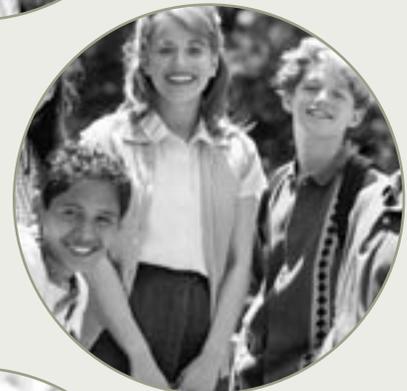
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Investing In The Next Generation:

HOW EDUCATION DRIVES COLORADO'S ECONOMIC FUTURE

“It’s simple - good schools are good for business. We all have an interest in making sure that our schools are the best they can be for Colorado’s children. As business leaders, we must commit to giving our schools the expertise, resources, and long-term support they need to meet our expectations for all students.”

Joseph R. Swedish
President and CEO
Centura Health

What does education have to do with the economy?

The best way to grow our state and regional economies is to ensure the quality of our greatest resource: our public schools. Thinking and acting strategically about the quality of education in Colorado is essential to our economic future. If we can improve our schools to meet the needs of our economy and provide opportunities to all students, we will thrive. Neglect the quality of our schools, and our economic advantages will begin to vanish. We all have a stake in building a world-class public education system in Colorado.

Education is directly linked to economic outcomes in a number of ways:

- Educated individuals are more likely to be employed and to earn more. They contribute to the economy by spending more money and paying more in taxes.
- As education levels rise, the costs of social programs go down. Higher levels of education mean lower levels of spending on welfare, unemployment, health care, and criminal justice.
- Business relies on quality K-12 education and higher education institutions to create a highly-qualified workforce that can serve the needs of a diverse economy.
- The condition of the local school system is a major quality-of-life consideration for relocating businesses and employees. In the New Economy, attracting and retaining individual talent is key to success.
- Higher education provides specialized training and essential partnership opportunities for business.
- Quality public schools stabilize communities and increase housing values.

Paying attention to the canaries in the coal mine

Strategic planning around education requires an assessment of our current situation. In some ways, the state is doing well. We have one of the most highly educated workforces in the country. Many of our schools are performing very well, and our children tend to score highly on national assessments compared to other states. We have numerous public institutions of higher education.

But scratch beneath the surface, and there are troubling facts masked by these strengths – facts that demand our immediate attention if we are to maintain our competitive advantage.

- Our workforce is highly educated in large part because of the influx of highly educated workers from other states, not because we have consistently educated all of our own children to high levels.
Fact: *The college-going rate for our students is lower than the national average, and among the lowest in the nation for low-income students.*
- Graduation rates in our own high schools are lower than most people think, disturbingly so for minority and low-income children.
Fact: *Less than 70% of our 9th graders graduate from high school four years later.*
Fact: *Less than half of our black and Hispanic 9th graders will graduate.*



- Far too many of our children are not reaching the levels of proficiency mandated by state and district standards.
Fact: According to the most recent CSAP scores, just two-thirds of our 10th grade students read at grade level.
Fact: Black and Hispanic students typically score around 30 percentage points lower than Asian and white students, across grades and subjects.
- Our state colleges and universities have been left reeling by budget cuts and risk losing not only their competitive quality but also their status as publicly-funded institutions.
Fact: We rank 48th in the country for state appropriations to higher education per \$1000 of personal income.
Fact: Our state universities are warning that they may privatize by the end of the decade.
- Overall, we are doing education on the cheap, with little money available to invest in promising practices.
Fact: We rank 48th in the country for funding K-12 education per \$1000 of personal income.
Fact: According to Education Week, we rank 40th in the country for average per-pupil spending.

These are the canaries in the coal mine, warning of danger ahead. As we look for ways to improve our economy, we do not have the luxury of ignoring these issues. We are in a competitive economic environment, in a state with ever-diminishing public funds. We must be proactive. We must think strategically about education and take the actions now that will assure our economic vitality later.

What does Colorado need to do next?

Educating all of our children well in today's society is a complex endeavor, particularly when the challenges faced by education reflect back to us the challenges that exist in our society. As a result, building this world-class system will be hard work. It will take the long-term commitment of all of us – political and community leaders, educators, parents, and the business community – to achieve success. There won't be any easy answers, but there are goals we need to pursue consistently and relentlessly.

At the Public Education & Business Coalition, we believe that Colorado must act on the following strategic priorities to address the weaknesses in our education system:

- All of our educational systems, from preschool through post-secondary education, must be deliberately aligned to achieve our goals.
- We must continue to emphasize the importance of standards, assessments, and accountability in ensuring high achievement for all children.

- We must ensure that our teachers are well-prepared for the work of helping all children learn, and are supported by quality professional development throughout their careers.
- We must institute reforms in our middle and high schools to ensure that students stay engaged and graduate from high school prepared for work or college.
- We must take steps to understand what is causing the achievement gap in our schools and design targeted programs to reduce the gap.
- To accomplish our goals, we must be willing to invest in our children's schools. Education must be consistently and adequately funded across all levels.

We are starting from a place of strength. We are a wealthy, well-educated state interested in maintaining and growing our economic advantages. This provides an excellent platform for recognizing our mutual goals and joining together to ensure our future prosperity by building a world-class education system. But we must not be lulled by past success. The time for strategic action is now.



Colorado By the Numbers

2

Rank of Colorado in concentration of high-tech jobs

3

Rank of Colorado in percentage of adults with college degree

\$42,237

Median annual year-round wages for a college graduate in Colorado, 1999

10

Rank of Colorado in median household income, 2003

Sources: Progressive Policy Institute, U.S. Census Bureau, Colorado Office of State Planning and Budgeting

\$4.10

Estimated return to society for every \$1 spent to equalize the graduation rate across ethnicities and race

Source: RAND Corporation

48

Rank of Colorado in total taxable resources spent on K-12 education, 2001

40

Rank of Colorado in average per-pupil spending, 2001

Source: Education Week

35

Rank of Colorado in percentage of students graduating from high school

68

Percentage of Colorado 9th graders graduating from high school four years later

48

Percentage of Hispanic 9th graders in Colorado graduating from high school four years later

\$21,757

Median annual year-round wages for a high school dropout in Colorado, 1999

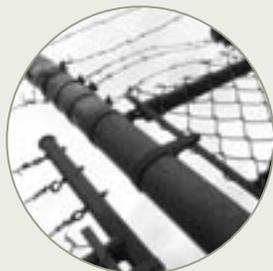
68

Percentage of state prison inmates nationwide in 1997 who did not have a high school degree

6

Rank of Colorado in growth of prison population, 1995-2002

Sources: Manhattan Institute, Urban Institute, Colorado Office of State Planning and Budgeting, U.S. Department of Justice



65

Percentage of Colorado 10th graders reading at grade level, 2004

27

Percentage of Colorado 10th graders performing math at grade level

8

Percentage of Hispanic 10th graders in Colorado performing math at grade level

Source: Colorado Department of Education

37

Rank of Colorado for high school graduates continuing to higher education

42

Rank of Colorado for low-income graduates continuing to higher education in 2001

Sources: National Information Center for Higher Education Policymaking and Analysis, Center for the Study of Opportunity in Higher Education



47

Rank of Colorado in FY 2004 state appropriations for higher education per capita

48

Rank of Colorado in FY 2004 state appropriations for higher education per \$1000 of personal income

-12.6

Percentage change in Colorado state funding for higher education over last five years

+14.1

National average % change in state funding for higher education over last five years

Sources: National Information Center for Higher Education Policymaking and Analysis, Measuring Up, Illinois State University

D

Grade received by Colorado from the Corporation for Enterprise Development for investment in human resources, 2003

The Economic Benefits of Education

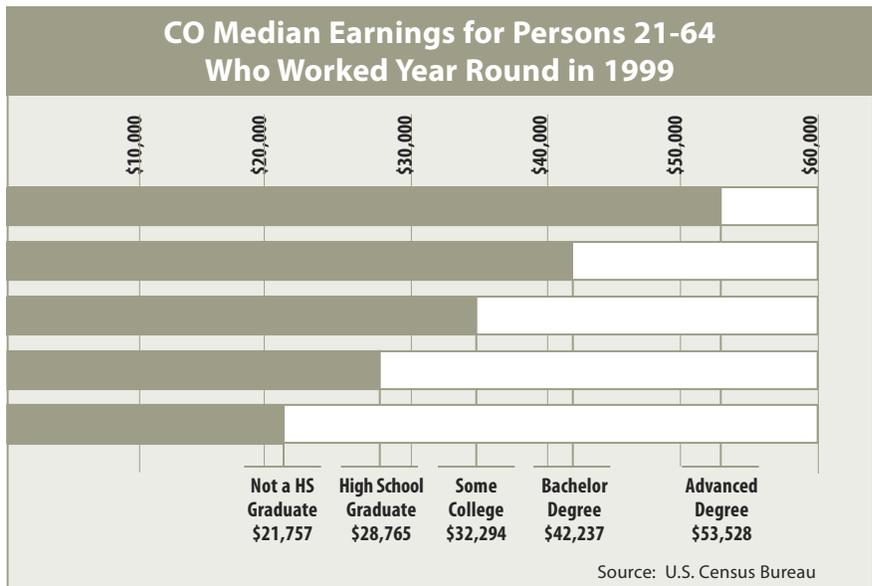
FOR INDIVIDUALS AND SOCIETY

Key Points:

- Higher education levels lead to greater employment rates and higher wages for individuals
- The benefits of education for individuals flow to society through increased personal spending and revenue and decreased social costs
- These effects are particularly important for Colorado, because we rely heavily on individual personal income for state revenue and because we have limited state and local funding available to alleviate social costs

Why do politicians, policy makers, and business and community leaders devote so much time and attention to education? Why, in poll after poll, do citizens in Colorado list education as a top concern? Because quality education benefits not only the person being educated, but also his or her family and the society in which the person lives. Ensuring that everyone receives a quality education is not just morally right. It is the most effective and efficient way to operate a democratic society like ours. *We all have a stake in good education.*

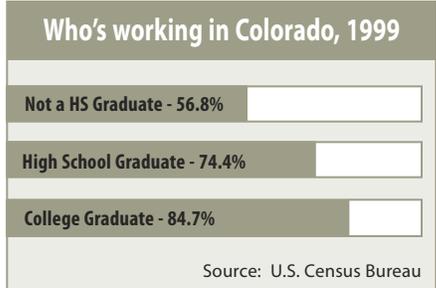
The well-educated person enjoys access to more employment opportunities and greater lifetime earnings potential, while society benefits from a skilled workforce, increased productivity, increased revenue in the economy, and greater social stability. In fact, given the work-based nature of American society, the ability of our children to contribute to our democracy and our culture may be dependent upon their ability to become productive members of our economy.



For all these reasons, education is more than just another line-item in the budget. It is *strategic*, as Purdue University president Martin Jischke puts it, and we need to be thinking strategically about it in terms of its benefit to the state, to local communities, to families, and to individuals. Investing wisely and strategically in education yields benefits now and for future generations.

Both in Colorado and nationally, education is correlated directly to participation in the workforce and lower levels of unemployment. People are more likely to be employed and to earn more as they obtain higher levels of education. The positive effects of higher education levels are intergenerational. The children of more highly-educated individuals live in households with higher incomes, and do better in school.

This individual economic benefit, multiplied over many people and families, helps drive an economy. People who are employed and earning higher wages tend to spend more, contributing to the overall size of the economy. Census Bureau researchers report that on average, college graduates will earn nearly \$1 million more than high school graduates over the course of their careers (Day, 2002).



“The inescapable reality is that ours is a society based on work and knowledge. If educators cannot fulfill their economic mission to help our youth and adults become successful workers, they also will fail in their cultural and political missions to create good neighbors and good citizens.”

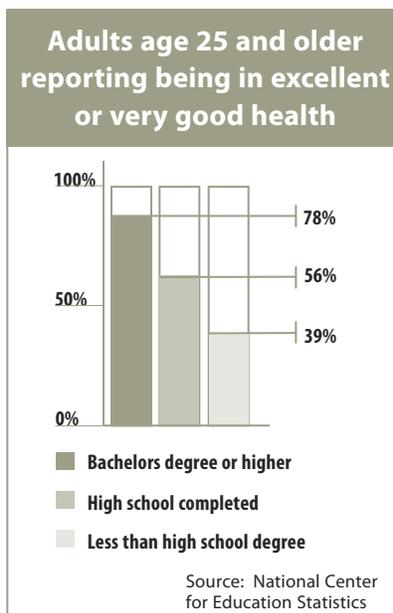
Anthony Carnevale
Educational Testing Service

The relationship between higher education levels and higher individual income has profound implications for the ability of state and local governments to provide public services. People who make more pay more in taxes. But it is not just in tax revenue that education levels make a difference to government. Higher education levels relieve social costs associated with under-education.

Under-educated people are more likely to cost society money in a number of other ways, including unemployment benefits, welfare benefits, other subsidized assistance programs, and costs associated with increased health problems. Researchers in Colorado found that

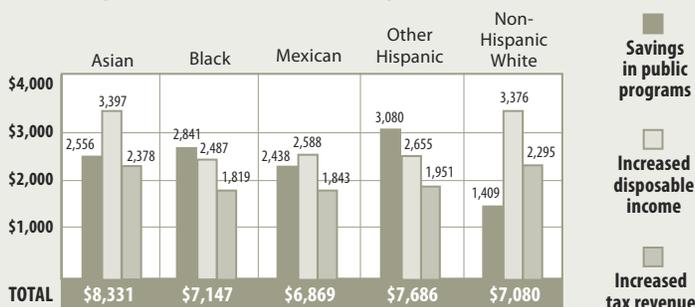
families in Colorado’s Front Range in which adults did not graduate from high school were very unlikely to earn enough to be self-sufficient – that is, to be able to meet their needs without public or private assistance (CLRI, 2001). When researchers at the RAND Corporation looked at the effects of educational attainment on costs associated with ten different social programs, they found that “the amount of public expenditure per person declines dramatically as educational attainment increases for all ages up to retirement age” (Vernez, 1999).

The relationships between individual education on the one hand, and personal income and public costs on the other, are particularly important in Colorado. According to *Governing Magazine*, we are one of five states that derives more than half of its revenue from taxes on personal income, making us very sensitive to changes in individual income. We also are not a state that historically funds social programs at high levels, and our tax and expenditure limitation, popularly known as TABOR, encourages an even greater constriction of government services. For our state, finding ways to reduce the need for state-funded programs will become more and more important. Increasing education levels is one very effective way to increase individual self-sufficiency and decrease social costs. We can invest now, or we can pay later, and possibly at a time when we no longer have the state funds to address our problems.

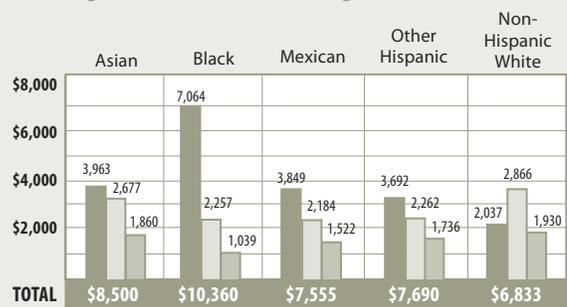


Rand Corporation Research: Going from high school dropout to high school graduate

Annual returns associated with obtaining a high school degree for native-born women age 30 (1997 dollars)



Annual returns associated with obtaining a high school degree for native-born men age 30 (1997 dollars)



Sources: Adapted from Vernez (1999)

The Economic Benefits of Education

EDUCATION AS A FORCE FOR ECONOMIC DEVELOPMENT

*“At its core,
‘economic
development’
is nothing more or
less than the pursuit
of intelligence – how
to attract it, nurture
it, and sustain it.”*

Tom Clark
Executive Vice President
Metro Denver Economic
Development Corporation

Key Points:

- **A high-quality education system is essential to economic development in a competitive environment.**
- **High-quality education delivers:**
 - **A well-qualified workforce able to meet the labor needs of a diversified economy**
 - **An attractive quality of life for key employees and their families**
 - **Partnership opportunities with higher education**
 - **Stable communities and increased housing values**

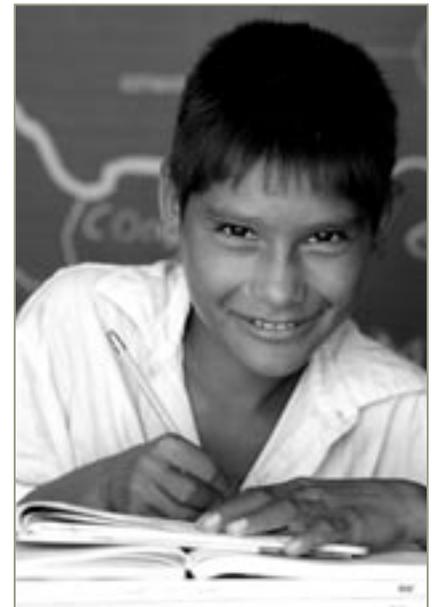
The art and science of economic development focuses on deliberately shaping our economic future. What kind of industries do we want to attract and keep in the state? What kind of jobs will our citizens hold?

Colorado is facing a highly competitive economic environment, in which we must maximize all of our considerable assets to compete effectively on the national and global stage. We must be very savvy about investing wisely in economic development, particularly as state and local governments have less and less money to spend on traditional economic development strategies such as subsidies and other economic incentives.

In this environment, our support for quality education will be key to maintaining and improving our competitiveness, because quality education delivers competitive advantages that businesses need in today’s economy:

- A high-quality workforce
- A high quality of life to attract key employees
- Partnership opportunities with higher education
- Stable communities

Local education quality is by no means the only factor in maximizing economic development, but investing in quality education can yield great returns in combination with other economic development strategies.



COLORADO'S ECONOMIC PICTURE

COLORADO'S BUSINESS CLIMATE: POISED FOR TAKE-OFF

Ranked 4th nationally in 2002 New Economy Index (Progressive Policy Institute)

Ranked 3rd nationally in 2004 National State Technology and Science Index (Milken Institute)

Straight A's (1993-2002) and Honor Roll (2003) (Corporation for Enterprise Development)

4th most business-friendly tax climate (State Business Tax Climate Index 2003)

Where we've been: A bumpy ride

In the 1990's, we enjoyed an amazingly robust economy. Our highly educated population, well-regarded research institutions, low taxes, and beautiful environment allowed us to attract high-tech and other emerging industries. Telecommunications, manufacturing, tourism, and construction drove economic growth, and resulted in increased growth in retail sales, business services, and local government (DiPersio, 2004).

The state was dealt a serious setback during the recent recession. Although we ranked 5th in the country for jobs added between 1995 and 2001, by the end of July 2002, the struggling high-tech, telecom, and tourism industries had caused Colorado to lose more of its job base than any other state (Couch, 2002). The lagging economy was reflected in newer rankings: we fell from 4th to 11th in the Beacon Hill Institute's 2003 Metro Area and State Competiveness Report, and 2003 ended our nine-year "straight A" streak with the Corporation for Enterprise Development.

The latest indicators, however, show that Colorado is moving back on track, albeit more slowly than the rest of the country. The FDIC projects that by 2005, we will see employment at the 2000 level.

Where we want to go: Focusing on the future

Researchers at the University of Colorado's Leeds School of Business have identified current economic development opportunities in the following areas:

- Maintaining and increasing our high-tech presence, with new efforts to build biotechnology, nanotechnology, and photonics sectors
- Maintaining and increasing our role in aerospace, satellite, and defense technologies
- Revitalizing and expanding telecommunications
- Expansion in transportation, financial and health-care services, and R&D
- Outside the Front Range, increasing tourism, new technologies in agriculture and energy, and developing high-tech capacity
- Continuing to support small business development and entrepreneurial efforts
- Expanding international trade

Sources: Wobbekind, 2004; Business Research Division, 2003.

Colorado's Ten Largest Private-Sector Employers, 2003

Company	Description	Employees
Wal-Mart Stores	Retail	20,100
Kroger	Grocery Retail	15,404
Qwest Communications	Telecommunications	13,500
Centura Health	Health Care	12,330
Safeway, Inc.	Grocery Retail	11,250
Vail Resorts	Resorts	11,072
Columbia/HealthOne	Health Care	9,140
Lockheed Martin	Aeronautics/Defense	8,900
Target Corporation	Retail	7,513
United Airlines	Air Transportation	7,000

Source: Denver Post

Our Entrepreneurial Spirit

Colorado ranks 2nd nationwide in the establishment of new companies.

(Corporation for Enterprise Development, 2003).

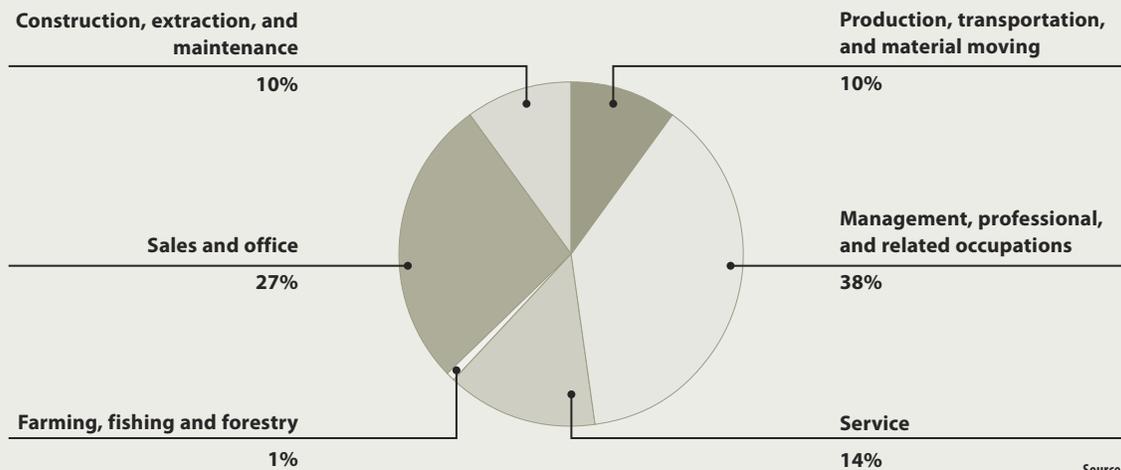
Small Business is Key

Of Coloradans employed in businesses with employees, 78% work in businesses with less than 10 employees.

(National Federation of Independent Business, 2003).

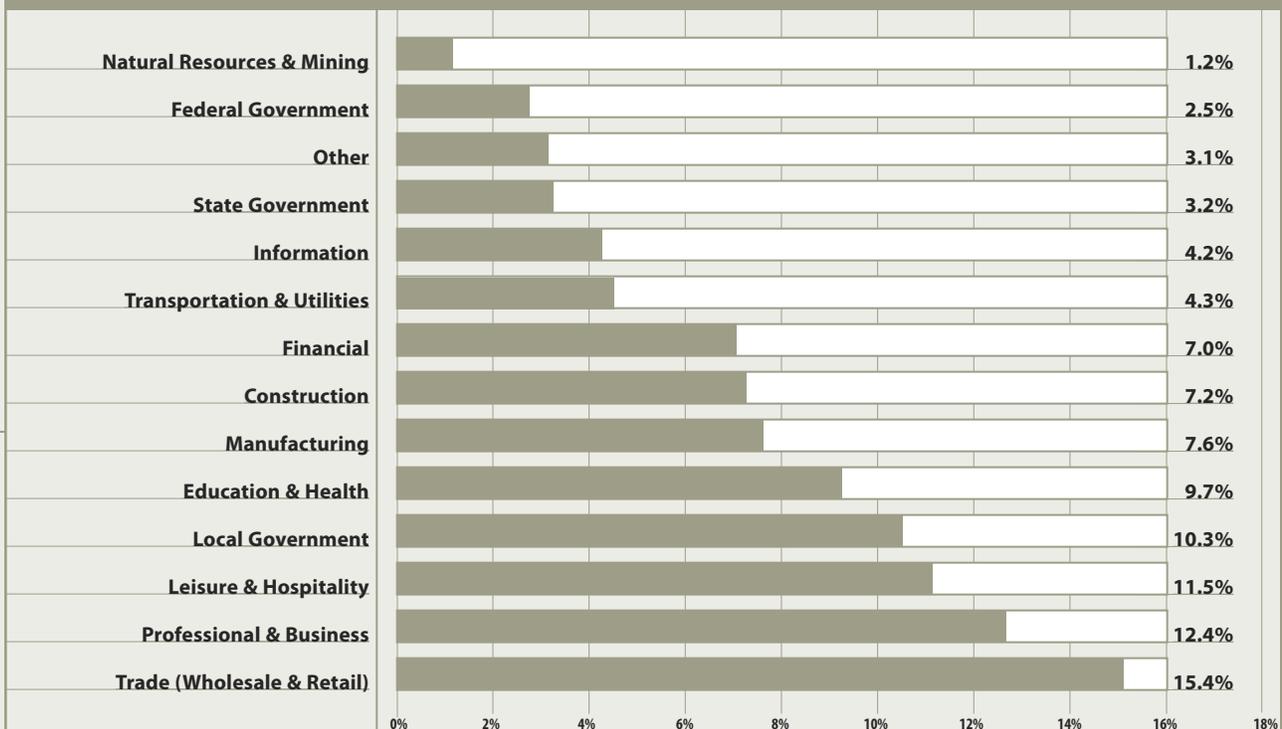
PAST AND FUTURE

Selected Occupational Groups as a Percentage of the Employed Civilian Population 16 years and over in 2000



Source: Fronczek, 2003

Share of Colorado Employment Held by Each Sector In 2003



Source: OSPB, 2003

What Business Needs

A HIGHLY QUALIFIED WORKFORCE

EDUCATION AND PRODUCTIVITY

According to the National Center on the Educational Quality of the Workforce, increasing the average education level of all workers by 10% is more productive than:

A 10% increase in worked hours

A 10% increase in capital stock

Key Points:

- In today's economy, the quality of a state's workforce is its most important source of competitive advantage
- To maintain an elastic labor supply in a diversified and changing economy, states must produce high school graduates with meaningful diplomas who are ready for work or higher education
- Quality higher education is key to supplying specialized knowledge and skills for the labor force

As economists at the Milken Institute put it, "today a state or region's most important source of competitive advantage is the knowledge embedded in its people ..." (DeVol, 2004). In this New Economy, educational levels and quality have become much more essential as employees in both high-skill and lower-skill occupations are required to work with information and collaboratively with each other (Carnevale, 2002). A state whose high schools consistently produce graduates who are literate, numerate, and ready for either the workplace or higher education will enjoy a decided competitive advantage over other states.

"There is a clear consensus among researchers that education enhances productivity."

Source: KnowledgeWorks Foundation, 2004



The importance of quality K-12: Laying the groundwork

Quality K-12 creates the building blocks for a qualified workforce. It is in our public schools where the vast majority of our children will learn essential academic skills as well as the character and teamwork habits necessary for success in a workplace environment. Ninety-two percent of school-age students in Colorado are enrolled in our public schools, making public schools the de facto training ground for many of our future employees.

A state looking to be competitive in the New Economy should ensure that each of its students can and does obtain a meaningful high school diploma. A high school diploma is now the entry point for many jobs that were previously available to workers who did not graduate from high school, and the manufacturing jobs that sustained a prior generation of high school dropouts are disappearing fast. Not only are few jobs available for high school dropouts, but wages for high school dropouts have actually dropped between 1975 and 2002 (Carnevale, 2003).

The majority of jobs available today do not require higher education, but they do require a solid mastery of the knowledge and skills graduating high school students should possess. A rigorous K-12 education and a meaningful high school diploma provide students with the ability to make their own choices in the economy, and provide business with a supply of workers who are responsible, adaptable, and grounded in basic skills.

According to Federal Reserve chairman Alan Greenspan, quality K-12 education allows a state to have the widest possible supply of workers who are able to adapt to changing business and personal circumstances and sort themselves into available openings. Workers who have choices, thanks to a good basic education, do not just benefit themselves, they provide an elastic labor supply for a diversified economy.

The importance of higher education: Providing specialized knowledge and skills

A solid high school diploma provides a qualified workforce for many jobs in a state's economy, and also provides the foundation for those students who choose to continue their education in community colleges and four-year institutions. The fastest-growing jobs require some advanced training in addition to a high school diploma.

Ensuring that students are ready to proceed to higher education is particularly important in a state like Colorado, where we are actively looking to maintain our dominance as a high-tech center. A ready-made workforce of college-educated employees will help keep these high-paying jobs in Colorado.

Growing our own: The "economic gardening" approach

We are an entrepreneurial state. Some Colorado communities have begun to take advantage of this mindset and encourage "economic gardening." This approach to economic development, pioneered in Colorado by Littleton and Steamboat Springs, focuses on nurturing homegrown entrepreneurship rather than trying to compete for existing businesses. This is a particularly appealing approach for rural communities, which lack some of the competitive advantages enjoyed by metro regions. Obviously, a community that has quality education will have greater success creating the kind of innovative, talented entrepreneurs that economic gardening needs.

There will always be a wide range of jobs in our society, from the entry-level job at the fast-food restaurant to the head of neurosurgery at the local hospital. A state like ours, looking to meet the needs of a diversified range of businesses, from a one-person start-up to a Fortune 500 company, needs a diversified pool of potential employees. This requires both high-quality K-12 education, which provides solid employees for lower-skilled industries and feeds well-prepared students into higher education, and high-quality post-secondary institutions, which provide graduates ready to work at highly-skilled jobs (Weiss, 2004).



*“We need to
be forward
looking in order to
adapt our educational
system to the evolving
needs of the economy
and the realities of our
changing society.”*

**Alan Greenspan
Federal Reserve
Chairman**

What Business Needs

A HIGH QUALITY OF LIFE TO ATTRACT KEY EMPLOYEES

Key Points:

- As business relies more and more on employee talent, it looks for regions with high “quality of life” factors to attract and retain talent
- The importance of “quality of life” considerations is particularly true for high-tech industries
- The quality of the local education system is a key “quality of life” factor

“Quality of life” factors are increasingly important in business location decisions. In the New Economy, businesses rely on talent – educated, creative people who can dream up new ideas and innovative processes. But talent is highly mobile. Star performers are choosy, making their employment decisions based not only on the qualities of their employers, but also on the quality of life available in the area where they will be working.

Businesses that rely on well-qualified employees are thus highly motivated to make decisions that allow them to recruit talent nationally and to encourage star employees to remain in their employ. As a result, in making location decisions, more and more businesses consider not only the quality of the workforce in proposed locations, but also the quality of life available to employees in the area based on available cultural, recreational, housing, and educational opportunities.

Among these factors, education is right at the top of the list, as employees are very interested in the quality of schools where they will be sending their children. Site selection professionals are well aware of this. The editor of *Expansion Management* magazine states, “In our opinion, the ability to afford a decent place to live and to be able to send one’s children to quality public schools are by far the two most important categories in evaluating a metro’s overall quality of life” (King, 2004).

This emphasis on keeping employees happy through quality of life considerations like K-12 education is particularly true for technology-related companies who rely heavily on key employees. As one biotech business leader told *Site Selection Magazine*, “You ask companies what’s important to their success and more and more it’s talent. And talent demands quality of life. States are putting a strong focus on retaining their top graduates and attracting earlier graduates back. One way is through strong K-12 programs. Top biotech talent wants to live where their kids can get a good education” (Jan. 2004).

“The ability to afford a decent place to live and to be able to send one’s children to quality public schools are by far the two most important categories in evaluating a metro’s overall quality of life.”

“Recent research emphasizes the increasing importance of locating businesses in places with a high quality of life that will attract future workers, and the quality of public schools has increasingly begun to fit in under the rubric of a community’s general quality of life.”

Source: KnowledgeWorks Foundation, 2004

What Business Needs

PARTNERSHIP OPPORTUNITIES WITH HIGHER EDUCATION



Key Points:

- Access to higher education research institutions fuels business research and innovation
- Community colleges are important partners in developing a local workforce responsive to the needs of local employers

Partnerships between business and academia have become commonplace in the New Economy. Research universities now supply much of the research and development that used to occur in-house. With many economists suggesting that R&D will be the United States' strength in the global economy, the importance of higher education partnerships to business continues to grow. According to Richard Florida's popular book, *The Rise of the Creative Class*, "[t]he presence of a major research university is a huge advantage in the creative economy – more important than the canals, railroads, and freeway systems of past epochs – and a huge potential

source of competitive advantage." By drawing in research dollars, creating companies built from university-generated intellectual property, and attracting business partners, universities generate much more benefit to the economy than they cost the state.

Community colleges also play a significant role in the New Economy. Many of the fastest-growing jobs require associate's degrees – specialized training for high school graduates. Community colleges also tailor their programs to the needs of local industries, ensuring a qualified local workforce. A strong community college system thus serves many needs by:

- Providing an affordable route to higher education for students who otherwise would not attend college
- Providing avenues for working adults to ascend into higher-paying fields without a full four-year degree
- Providing specialized training grounds for the needs of local industries

"University research labs could be the catalyst to recharge Colorado's lagging tech economy, according to state and business leaders." (Denver Post, 3/29/2002)

A partial list of companies using intellectual property developed at Colorado universities:

Amgen

CDM Optics

Phiar Corp.

Aurogen, Inc.

Myogen

Gonex, Inc.

Numerica Corp.

Ribozyme Pharmaceuticals

Astralux, Inc.

Barofold, Inc.

Efectka Technologies

Knowledge Analysis Technologies

Eyetech

Sentry Biosciences

Dharmacon, Inc.

What Business Needs

STABLE COMMUNITIES

Key Points:

- **Good local schools help stabilize communities, leading to a reliable infrastructure for business investment**
- **The quality of the local school system is positively correlated with housing values**

Quality public education contributes not only to a qualified workforce, but also to stable communities that invite business investment. Well-maintained public schools with high achievement levels boost community economic health and housing prices.

Creating innovative new schools or revitalizing older schools can have a significant effect on the economic health of a neighborhood or community, creating conditions that are favorable to business investment. The National Association of Realtors (2002) reports: "More and more community leaders are recognizing the power of schools to attract and keep residents in a neighborhood. Leaders in many urban communities are building or renovating schools as part of broader strategies for revitalizing blighted areas." In its new Stapleton housing development in Denver, housing developer Forest City Stapleton actively incorporated quality public schools into the neighborhood as part of a conscious effort to attract family homebuyers (Baker, 2003). Developers in Adams County School District 27J have funded a foundation to help build schools in the district's fast-growing communities. According to Joel Farkas of Gateway American Properties, "Schools are critically important . . . The first thing we looked at is how to help schools" (Johansen, 2004).

Good schools can also stabilize a community by actually increasing housing values. A recent review of the academic research concluded that the link between public school quality and property values has been consistently demonstrated, and holds true for urban and suburban communities, low-income and high-income areas, and for homebuyers with and without children (Weiss, 2004). People are willing to spend more for housing located in areas with quality schools, as realtors selling in the Cherry Creek Schools district know.

"School quality has a direct and positive influence on residential property values."

Source: KnowledgeWorks Foundation, 2004

"No community can develop successfully and hold its population, especially its upwardly mobile families, over the long run if it does not provide a form of education that is good enough to prepare children for college."

Gary Orfield
Professor of Education and Social Policy
Harvard University



ASSESSING THE SITUATION:

BUILDING ON OUR STRENGTHS AND ACKNOWLEDGING OUR CHALLENGES

As a state, we have many strengths that should not be underestimated. But if we are to think strategically about education's role in achieving a sound economic future for Colorado, we must also be clear about our challenges.

The Colorado Paradox – our highly educated population is not home-grown

One of our state's strongest drawing points is our highly educated workforce. According to the 2000 census, Colorado ranks 7th in the country in the percentage of adults with advanced degrees, 3rd in the percentage of adults with a college degree, 1st in the percentage of adults with at least some college, and 8th in the proportion of adults with a high school diploma (Bauman, 2003). According to the Milken Institute, we have the highest

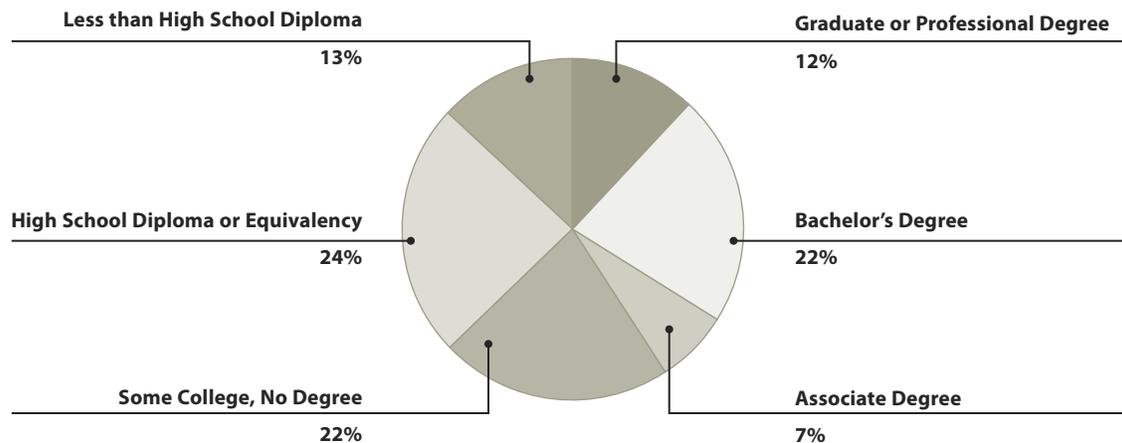
concentration of high-tech workers in the country, and we are ranked 2nd nationally in recent degrees in science or engineering as a percent of the civilian workforce (DeVol, 2004). There is no doubt but that this strength has driven our economic expansion over the past decade and given us an essential competitive advantage over other states.

But these encouraging statistics mask an interesting dilemma for Colorado. It is widely understood that our dominance in the number of adults with college degrees has resulted from in-migration. As Tom Mortenson of the Pell Institute for the Study of Opportunity in Higher Education says, "Colorado has produced relatively few of its college graduates – they have moved here from other states and brought with them the prosperity they have generated." To date, we and other

states in the West have managed to "net export" our high school dropouts while "net importing" individuals with college degrees (CLRI, 2004). This is the so-called "Colorado Paradox."

"Colorado has produced relatively few of its college graduates – they have moved here from other states and brought with them the prosperity they have generated."

Distribution of Education Levels in Colorado



Source: American Community Survey, 2002

HOW COLORADO COMPARES

% of 9th graders graduating four years later

In Colorado	68%
National average	70%

% of Hispanic 9th graders graduating four years later

In Colorado	48%
National average	53.2%

% of high school graduates continuing directly to higher education

In Colorado	53%
National average	56.7%

% of low-income graduates continuing to higher education, 2001-02

In Colorado	17.2%
National average	24%

This has potentially major implications for the future of our workforce if current migration trends shift. Are we willing to bet our economic future on these trends continuing? A far more prudent course would be to improve the odds of economic stability by improving the number of homegrown highly-educated workers. Factored into this decision should be the substantial public expenditures we incur by leaving behind a significant number of Coloradans who do not attain a basic level of education.

To understand this issue, we need to examine K-12 outcomes within Colorado. Recent studies have pegged our high school graduation rates at around 68%. In other words, of the students who enter 9th grade in Colorado, an estimated one-third will not graduate four years later. This places us 35th in national rankings for high school graduation rates – below the national average of 70%, not a particularly good showing for one of the most highly-educated and affluent states in the nation (Greene, 2003; see also Swanson, 2004).

Even this number masks another problem. When graduation rates are disaggregated by race, we see that less than half of our black and Hispanic children are graduating (Swanson, 2004). Far too many students, particularly black and Hispanic students, will not have even a high school diploma, the most basic entry-level qualification for the decent-paying

jobs of the future. Unless addressed, this problem will grow in magnitude. A 1996 Census Bureau projection predicted that Hispanics would comprise 17% of Colorado's population in 2015 (Campbell, 1996). We reached that number by 2002.

In addition to the moral implications, this achievement gap has significant economic repercussions. According to a RAND study, simply raising national high school graduation rates to the same levels across race and ethnicity would result in government savings of \$3.30 for every additional \$1 needed to achieve the goal, and the benefits increase to \$4.10 when societal benefits from increased individual disposable income are considered (Vernez, 1999).



“Society pays in many ways for failing to take full advantage of the learning potential of all its children – from lost economic productivity and tax revenues, to higher crime rates, to diminished participation in the civic and cultural life of the nation.”

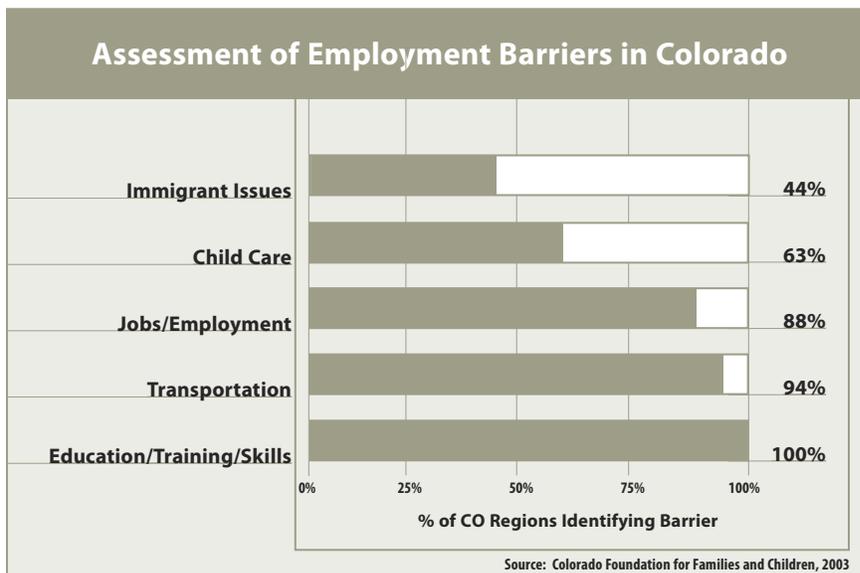
The Committee for Economic Development

Surprisingly, for such a well-educated state overall, our students who graduate from high school go on to college at a fairly low rate. According to the National Information Center for Higher Education Policymaking and Analysis, approximately 53% of Colorado's high school graduates continue directly on to higher education, below the national average of 56.7% and ranking us 37th nationwide. If this situation continues, relying on homegrown college graduates will not allow us to continue our dominance as one of the most highly-educated states in the country. Disaggregation of college-going rates also shows another troubling statistic: we rank very poorly in the number of low-income high school graduates who choose to continue on to college, far below the national average (Ludwick, 2003).



“There are structural changes going on in our economy ... Like Colorado, Massachusetts and arguably the rest of the country’s economy is going to depend on how innovative we can be. The challenge now is finding a way for the labor force to be prepared for the opportunities.”

Michael Goodman
 Director of Economic and Public Policy Research
 University of Massachusetts Donahue Center
 (Quoted in the Denver Post, July 26, 2004)



We may be starting to see the implications of this stratification of our workforce. In a recent assessment involving more than 500 persons statewide representing community organizations, public agency employees, workforce development professionals, employers, and jobseekers, 100% of the regions surveyed listed *inadequate education and job skills as a major barrier to finding employment for job-seekers*, ranking this factor even above the scarcity of jobs in a troubled economy (Colorado Foundation for Families and Children, 2003).

HOW COLORADO COMPARES ON THE NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS (NAEP)

Grade 4	CO Scaled score	% Proficient and above	National average	Nat. % Prof. and above	High state	Low state
Reading	224	46%	216	39%	228 (CT)	203 (NM)
Math	235	38%	234	36%	243 (NH)	223 (AL, MS, NM)
Grade 8	CO Scaled score	% Proficient and above	National average	Nat. % Prof. and above	High state	Low state
Reading	268	40%	261	35%	273 (MA)	251 (HI, CA)
Math	283	42%	276	34%	291 (MN)	261 (MS)

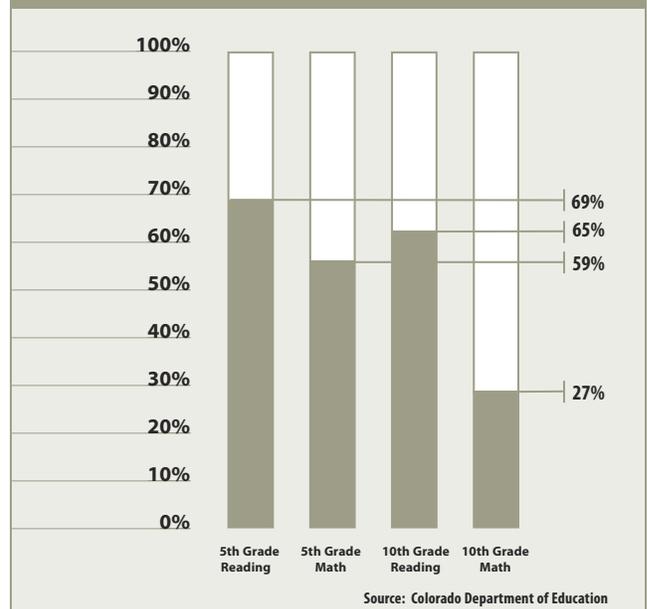
Source: National Center for Education Statistics

Colorado students are performing at above average levels nationally – but not well enough according to our own state standards

The National Assessment of Educational Progress (NAEP) provides a picture of how a state's students perform in reading and mathematics relative to students in other states and nationwide. According to the 2003 NAEP, Colorado 4th and 8th graders are doing relatively well.

While NAEP provides a useful picture of how Colorado students are performing relative to other students nationwide, Colorado's state accountability system, the Colorado Student Assessment Program (CSAP), provides an objective measurement of how Colorado students are doing relative to the standards that have been set for their learning. Colorado's Model Content Standards, which articulate what students at each grade level should know and be able to do in a variety of academic areas, have been in place since 1994. The CSAP measures whether students are meeting these standards. Because students must meet objective standards, CSAP provides a different picture than NAEP, which is a relative measurement of student achievement. The graph to the right shows the number of 5th and 10th graders meeting or exceeding all state grade-level standards for reading and math in 2003.

Percentage of Students Scoring Proficient or Above on CSAP 2004



Only about two-thirds of Colorado 5th and 10th graders are meeting state grade-level standards in reading. Math scores are even worse – in the tenth grade, only about one-quarter of our students can meet grade-level standards. This poses a serious problem for our high-tech economy, which depends on employees with solid math skills. Even Colorado’s impressive performance on the NAEP tests must be tempered with the realization that the percentage of Colorado 4th and 8th graders who were considered proficient in reading and math hovers between 38 - 46%.

In addition, the same achievement gap that plagues our graduation statistics is present in test scores – low achievement levels that are likely setting the stage for disengagement with school. The chart below shows the achievement gap just for 5th and 10th graders, but it is persistent across grades and subjects. The achievement gap represents an enormous waste of individual potential and economic possibilities.

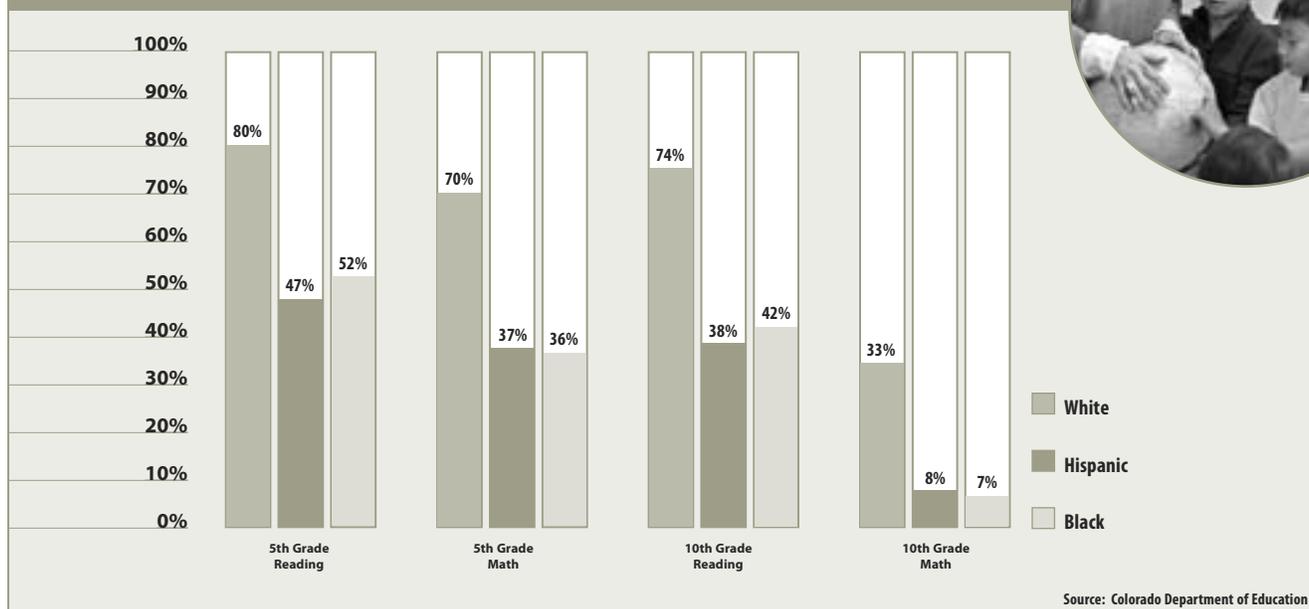
Quality of public schools worries area businesses.

Denver companies ranked the city’s public school system...among their biggest concerns about doing business in the metro area...

**Rocky Mountain News
September 24, 2004**



**Colorado’s Achievement Gap 2004
CSAP Proficiency by Race/Ethnicity**



**FY 2004 STATE
APPROPRIATIONS FOR
HIGHER EDUCATION
PER \$1000 OF
PERSONAL INCOME**

National Average = \$6.80

Colorado = \$3.96

Colorado's Rank =
48th Nationally

Source: Mortenson, 2003.

“This lack of funding also holds significant consequences for Colorado’s economy and for the well-being of our entire state. Colorado’s research universities are economic drivers, and their health matters to our citizens and to the global competitiveness of Colorado companies.”

**Larry Penley
President
Colorado State University**

We have an abundance of higher education institutions – but we are perilously close to crippling them through budget cuts

Our state has an abundance of community colleges, four-year colleges, and research institutions. The University of Colorado, Colorado State University, the University of Northern Colorado, and the Colorado School of Mines are key resources for business, particularly as we continue to expand our high-tech sector. Our universities’ contribution to the state economy is enormous. For example, for every dollar in unrestricted state general fund support, the University of Colorado system generates \$16.64 for the state economy in research dollars, intellectual property, employment, tuition, taxes, and the like (Hoffman, 2004). Colorado State University calculates its 2002 return on state investments at \$9.59 of additional state economic activity per \$1 of state funds (Colorado State University, 2002). Our four-year colleges, such as Adams State College in Alamosa and Western State College in Gunnison, are primary economic drivers in their rural areas.

But the recent recession hit higher education harder than any other category of state General Fund expenditures. Funding for higher education was cut more than 21% from FY 2002 to FY 2004. Colorado spent 20% of General Fund appropriations on higher education in 1990; it now spends just 11% of the General Fund on higher education. Due to these cuts, our ranking for public funding of higher education has plummeted. Because of the provisions of TABOR, we cannot quickly restore these cuts as our economy improves.

As it stands, we are allowing one of the major drivers of our state’s economy to take the brunt of state budget cuts now and in years to come. CU President Elizabeth Hoffman predicts that without reforms to TABOR and Amendment 23, “public higher education in Colorado will not survive in its current form.”

The economic implications of this lack of public investment are potentially enormous. Our colleges and universities may be undergoing a structural upheaval

“The long-term economic vitality of Colorado depends upon an excellent higher educational system.”

**George Sissel
Former Chairman
Ball Corporation**



at a time when Colorado needs to be economically competitive. A lack of publicly-funded higher education institutions could leave our high school graduates without affordable higher education options, further exacerbating our struggles to “grow our own” highly educated workforce. At the same time, our businesses could be left uncertain about the resources flowing from higher education institutions.

Colorado citizens are committed to education, yet we have very little public funding available for strategic investment in quality

In 2000, Colorado voters passed Amendment 23, which ensured that state education funding, which had failed to keep pace with inflation, would be restored to prior levels. Coloradans consistently tell pollsters that education is a top priority.

But struggles continue over dwindling public funds. Amendment 23 has been accused of contributing to our state's recent economic crisis by mandating additional money for K-12 education at a time when we had no additional money to spend. Higher education, as one of the very few categories of significant discretionary expenditures in the state's budget, took the brunt of the necessary budget cuts. Ironically, in a state with public support for quality education, we have pitted K-12 education against higher education in a battle for limited state funds. And in this environment, with established programs struggling for funding, there is very little chance of meaningful statewide public investment in promising ideas such as targeted access to quality early

childhood education. According to the Committee for Economic Development, every \$1 spent on preschool programs returns \$7 in savings. For this reason, early childhood education is considered by the Federal Reserve Bank of Minneapolis to be the most cost-effective strategy for economic development (Rolnick, 2002).

According to *Education Week*, in the 2001-02 school year, we funded public K-12 education at the rate of \$6,662 per pupil, ranking us 40th in the country. Because we are a wealthy state, we rank very low – 48th in the country – when education spending is considered as a percentage of per capita income (U.S. Census Bureau, 2004). Our state appropriations for higher education put us in the national basement by any measure.

Our state rightfully touts our high rankings from the Corporation for Enterprise Development. But in 2003, we broke our streak of straight A's from that group. One of the reasons? Colorado received a D for investment in human resources based on our school system outcomes and expenditures.

“Ironically, in a state with public support for quality education, we have pitted K-12 education against higher education in a battle for limited state funds.”



THE FUTURE

TAKING STRATEGIC ACTION TO ENSURE A WORLD-CLASS EDUCATION SYSTEM IN COLORADO

We are starting from a place of strength. We are a wealthy, well-educated state interested in maintaining our economic advantages. This provides an excellent platform for recognizing our mutual goals and joining together to ensure our future prosperity by focusing our attention on student educational opportunities. Together, we can build a world-class educational system. If we wait too long, however, we may find that the obstacles we face have become more challenging than our economy can easily handle.

Education is a complex endeavor, particularly when the challenges faced by education reflect back to us the challenges that exist in our society. As a result, there are rarely any easy answers. But there are goals that are worth pursuing.

Deliberately align all of our educational systems to achieve our goals

There are many points of influence along the education continuum, from preschool through college. Integrating all levels of education so that they work together coherently and in logical progression is essential if we are to efficiently meet the new education standards of today. Compartmentalizing early childhood education, K-12 education, and higher education, and pitting these programs against each other in competition for limited state dollars, is self-destructive in today's economy.

What other states are doing:

- Creating P-16 councils to better align all educational systems in the state. Several states, including Georgia, Maryland, Missouri, and Oregon, have created significant P-16 agencies or initiatives. In Indiana, the governor and state superintendent are chairing the Education Roundtable, a group of business leaders, educators, legislators, parents and community members charged with adopting a P-16 plan.
- Funding early childhood education (ECE), especially for low-income children, to ensure school readiness. Low-income children often come into school already so far behind their peers that it becomes nearly impossible to catch up. A public-private partnership in Minnesota, spurred by a Federal Reserve report calling investment in early childhood education the state's most effective economic development strategy, is raising \$1.5 billion to fund an endowment that provides high-quality ECE to low-income children.
- Requiring a high school curriculum that prepares students for college work. Far too many college students (in Colorado and elsewhere) find they need to take remedial courses because they are not prepared for college level work. The Education Commission of the States reports that in Georgia, which adopted a P-16 approach in 1995, college remediation levels have dropped by 50% as the numbers of students taking a rigorous high school core curriculum have climbed (Van De Water, 2002).





Continue the emphasis on standards and accountability to ensure high achievement for all students

If the goals of a standards-based education system are to succeed, we must recognize the need for a long-term commitment to its success from the business community, educators, parents, and community members.

What other states and cities are doing:

- A 1998 RAND study exploring the reasons behind significant test score increases in North Carolina and Texas revealed that the business communities in those states were key to increasing student achievement. Business leaders provided the stability and long-term outlook needed to keep the pressure up for continued achievement, and led the charge to improve the schools through assessment, accountability, and improved teacher quality (Grissmer, 1998).
- In Washington state, the business-backed Partnership for Learning raises public awareness and support for the state's standards-based accountability system, and is spearheading a campaign to support implementation of new high school graduation requirements.
- San Diego's Business Roundtable, a project of its chamber of commerce, played a key role in helping policy makers understand the need for standards, assessment, and accountability. It now has a number of projects underway to use data and accountability to promote increased student achievement.

Ensure that our teachers are well-prepared for the work of helping all children learn

Research shows that the quality of a student's teacher is the most influential school-based factor affecting student performance. For this reason, the Public Education & Business Coalition has focused most of its attention on teacher quality initiatives. We need to redouble our efforts to get the best teachers possible for our children and make sure these teachers are supported by quality professional development throughout their careers.

What other states and cities are doing:

- San Diego restructured its district administration, schools, resource allocation, and human resource practices to make instructional improvement the focus of the district. As a result of aggressive recruiting practices, almost all teachers hired by the district have been fully credentialed. On-site professional development is a key factor in the district's reforms.
- In Illinois, State Farm Insurance employees are trained as substitute teachers to enable classroom teachers to have time for professional development.
- The El Paso Collaboration for Academic Excellence, a civic partnership, pairs school districts with scientists, mathematicians and engineers from local institutions of higher education to improve math and science instruction in the districts.

“By working to improve education in Colorado, I can help children gain a love of learning now that will benefit us all in the future. That’s important to me as a businessperson, as a community member, and as a citizen of Colorado.”

Mark Pitchford
Senior Vice President, Marketing
Qwest Communications



Institute reforms in our middle and high schools to stem the dropout rate

Our middle and high schoolers need rigorous and relevant coursework and relationships with adults who care about them. We need to support our schools in meeting the needs of these students.

What other states and cities are doing:

- In Texas, local businesses and school districts partner to implement the “Texas Scholars” program, which encourages students to take a rigorous core curriculum in high school. Businesspeople make presentations at middle schools showing students why they should be Texas Scholars, and provide support to students as they continue through high school.
- The Southern Regional Educational Board’s High Schools That Work school reform framework puts in place a rigorous curriculum and career/technical learning experiences. In one example of a HSTW school, a Maryland high school requires its students to participate in intensive work-based experiences, and the state provides a tax credit to businesses that provide these structured learning opportunities.
- To combat the depersonalized environments of traditional large high schools, many states, including Colorado, have received grants to form “small schools” – high schools which are small enough to allow real relationships between teachers and students. The Denver School of Science and Technology, a new charter high school, is one of the latest “small schools.”



Take steps to understand and reduce the achievement gap

As our state’s demographics continue to change, the achievement gap between ethnic groups and high-income and low-income students could well become a major drag on the state’s economy. It is certainly already a social justice issue. The achievement gap is a complicated problem with no easy answer, but we need to get started on resolving it.

What other states and cities are doing:

- Studies show that the neediest children are often taught by the most inexperienced and underqualified teachers – a teacher gap that contributes to the achievement gap. In Chattanooga, business leaders in the Community Education Alliance are funding a program that provides \$5,000 bonuses to qualified teachers who agree to teach in high-needs schools.
- Virginia governor Mark Warner has proposed creating elite corps of teachers and principals who specialize in working in and turning around low-performing schools.
- In Oregon, Employers for Educational Excellence is leading an outreach program to engage business, community, and education leaders in selected communities in the creation of specialized school improvement plans designed to increase community support for high student achievement.
- Quality early childhood programs like those already described are considered to be a very promising way to target the achievement gap by giving children from disadvantaged homes the skills they need to succeed in school.



Adequately and consistently fund education across all levels

A sound business climate depends on a delicate balance between low-enough taxes and high-enough public investment. Lower taxes ensure that business is not overly shackled by costs, while public investments ensure that the necessary infrastructure for business, including a qualified workforce, will be in place. Colorado must ascertain the appropriate level of public investment in education necessary to accomplish its long-term goals. The business community, with its planning and budgeting expertise and its long-term vision for investment in the state, is uniquely positioned to help in this effort.

What other states are doing:

- A number of states have funded “adequacy studies,” which attempt to estimate the amount of funding necessary for the state to meet set student performance goals.
- In Washington state, Governor Gary Locke convened a group of business and community leaders during the recent budget crisis to determine the state’s available funding, funding priorities, and the most efficient ways to spend money to meet priorities.

In Conclusion

We are all in agreement that a strong economy benefits all the citizens of our state. But too often we fail to think strategically about one of the key components of a strong economy – quality education for Colorado’s students. Quality education is essential for individuals, for families, for cities, for regions, and for the state.

Improving education is complicated, time-consuming, and often controversial. It can be frustrating for businesspeople used to quick turnarounds, logical solutions, and formulas. As one superintendent said in comparing working in education to working in business, children tend to be inefficient.

Yet business has so much to offer education in terms of support for improvement: expertise in planning, budgeting, efficiencies of scale, marketing and communications, strategic partnerships, leadership development, and employee motivation. Business financial and political support for education is invaluable. As studies of Texas and North Carolina have shown, the long-term commitment of business to school improvement can give schools the space, time, and resources they need to make real changes.

With this commitment, the schools of Colorado can be world-class, ensuring that the economy of Colorado remains healthy into the future.



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CURRENT PROJECTS AT THE PEBC

Teacher Preparation

The Boettcher Teachers Program is an intensive, highly selective licensure and master's program that trains teacher candidates for work in urban and high-needs school settings.

Professional Development

PEBC's nationally renowned Teaching and Learning Center provides high-quality professional development based on best instructional practices to teachers and schools in Colorado and nationwide.

PEBC's Coaching Initiative provides training and support services for school-based instructional coaches serving classroom teachers.

School Reform

The School Reform Initiative (SRI), a joint project of the PEBC and the Colorado Small Schools Initiative at the Colorado Children's Campaign, develops coherent reform efforts that span middle grades and high school, providing high-quality professional development for teachers, cultivating strong principal and teacher leadership, and building structures and processes that support best instructional practices.

Civic Education

The Facing History Project is a rigorous, standards-based academic and leadership program for high school students based on the nationally acclaimed Facing History and Ourselves Program.

Grants for Teachers

Teachers can apply for grants from PEBC through three different projects: The Fund for Teachers, the Facing History Student Leadership Grant Program, and the Art Venture Grant Program.

Policy and Business Engagement

PEBC's work in policy promotes excellence in public schools and support for the systems necessary to sustain best practices in the classroom. We also engage the business community in understanding the challenges of today's schools and supporting our schools in their important work.



Supporting PEBC

There are many ways to support the work of PEBC, from donations to volunteer support. To find out more, please contact our office at (303) 861-8661.



**Public Education &
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