

Education

Exploring Colorado's Educational Pipeline

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The Bell Policy Center

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The Bell Policy Center

The Bell Policy Center is a nonprofit public policy organization committed to making Colorado a state of opportunity for all. The Bell seeks to reinvigorate the debate on issues affecting the well-being of Coloradans and to promote public policies that open gateways to opportunity.

The Bell Policy Center 2005 White Paper Series:

1. Exploring Colorado's Educational Pipeline
2. Who Goes to College in Colorado, and Who Doesn't?
3. Who Finishes College in Colorado, and Who Doesn't?
4. Who Serves Low-Income Undergraduate Students in Colorado?
5. Who Serves Minority Undergraduate Students in Colorado?
6. Student Loan Default Rates in Colorado
7. The Opportunity Gap: Which Colorado Students Graduate from High School and Attend College?

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Introduction

In today's competitive and knowledge-based job market, more education means more income. Workers who want to make ends meet and provide opportunities for their family usually need an associate's degree at the least, and fare better with a bachelor's degree.

While Colorado has a highly educated workforce largely imported from other states, we do a mediocre job of graduating our own young people from college. The rates of educational success are even worse for Hispanics, blacks and young people from low-income families — those who most need the boost of a college education to avoid a life of poverty and dependence.

Colorado must counteract these shortfalls by offering all its young people an education that leads to financial opportunity and a life of self-sufficiency. The state's economic and social health depends on it.

The Bell Policy Center believes sound social and fiscal policies grow from thorough, objective research. To solve a problem, we must first understand it.

This white paper is the first in a seven-part series that uses state and national data to evaluate Colorado's performance in educating young adults, and to identify promising remedies for improvement.



Exploring Colorado's Educational Pipeline

Executive Summary

For years, Americans have thought of education as a two-part program: kindergarten through 12th grade as the first, essential part, followed by a college education as a second, optional part.

But today, education should be viewed as a “P-16” whole that starts with preschool and is completed with a college degree. “We need to have that as an expectation when a kid goes to kindergarten, not wait until they're in high school,” says Terry Farina of Grand Junction, a member of the Colorado Commission on Higher Education.

This white paper looks closely at the second half of the P-16 concept, measuring Colorado's success in moving students through an educational pipeline from high school through college. The pipeline has four segments: graduating from high school, entering college, re-enrolling for the second year of college, and graduating from college.



Executive summary continued

In Colorado, this pipeline leaks badly. This brief examines where Colorado students “leak out” along the length of the pipeline, and compares Colorado’s pipeline to those of other states. The findings include:

- In Colorado, we do a mediocre job of educating our own young people. Colorado ranks 29th in the country for graduating youngsters from high school, and 19th in moving students on to college graduation.
- Of every 100 Colorado ninth graders, only 20 will finish high school and graduate from a community college within three years or earn a bachelor’s degree within six years. This is slightly better than the national average of 18 college graduates per 100 ninth graders, but is well below the rate of 28 per 100 in the top-performing states.
- Colorado’s educational pipeline leaks the largest number of students from its first two segments. In tracking Colorado ninth graders, 29.4 percent did not graduate from high school and another 30.1 percent did not enroll in college within a year. For the 40.5 percent who did go on to college, only half graduated from a community college within three years or earned a bachelor’s degree from a college or university within six years.
- Colorado is No. 2 in the country for the percentage of working people over 25 with a college degree, largely because it attracts graduates from other states. In the dozen years from 1989 to 2001, Colorado was the country’s No. 2 importer of college graduates.



Colorado’s educational pipeline

Recently, discussion among the education policy community has been increasing about the need to re-examine the transition from secondary to postsecondary education. The goal is to create a truly P-16 policy agenda that addresses the entire set of issues affecting educational attainment from pre-kindergarten through college graduation.

A consensus has emerged on the need to integrate policy research and initiatives that share the common goal of achieving high levels of educational attainment and capital – a key element of economic development and quality of life considerations.

As a result, much attention has been paid to the concept of creating an “effective pipeline for educational attainment through an articulated system of schools and postsecondary institutions within a particular state or polity.”¹

Ewell, Jones and Kelly have conceptualized an educational pipeline in terms of a series of five successive transitions, each marking a significant stage of achievement:

1. Graduation from high school
2. Entry into postsecondary education
3. Persistence in postsecondary education
4. Completing postsecondary education
5. Entering the workforce

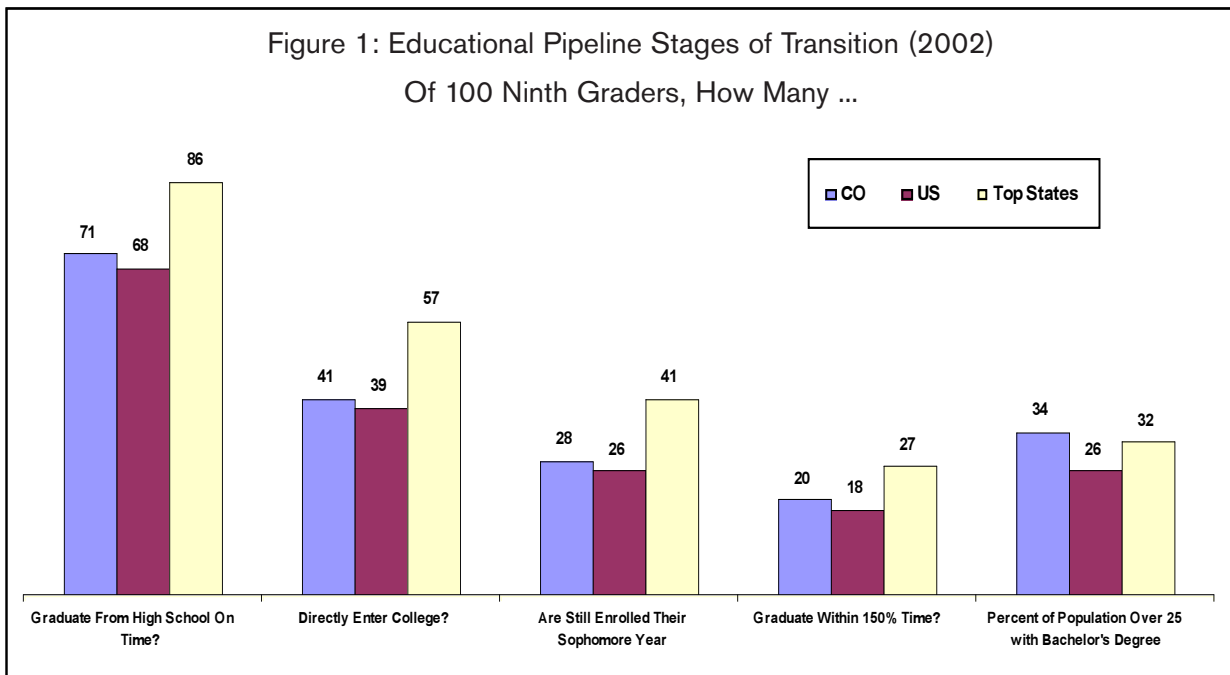
For each of these stages, Ewell et al. have identified a key statistical measure and corresponding available data that can be used to estimate state performance.²

STAGE	MEASURE	DATA
Public high school graduation rates	Percent of ninth graders graduating from high school on time	NCES Common Core Data; Postsecondary Opportunity calculations (Tom Mortenson)
Entry into postsecondary education	Percent of recent high school graduates enrolling in college	NCES <i>IPEDS Residency and Migration File</i> ; Postsecondary Opportunity calculations (Tom Mortenson)
Persistence in postsecondary education	Percent of entering first-year students enrolling for a second year	ACT <i>Institutional Survey</i>
Completing postsecondary education	Percent of enrolled college students graduating in 150 percent of time	NCES <i>IPEDS Graduation Rate Survey</i>
Entering the workforce	Percent of adults over 25 with a bachelor’s degree	U.S. Census Bureau, American Community Survey



Drawing upon the most reliable national data sources, Ewell et al. have assessed the comparative performance of all 50 states, which can be used as an initial step for identifying the most vulnerable points of transition within their respective educational pipelines. As Figure 1 indicates:

- Out of 100 ninth graders in Colorado, only 20 are expected to graduate from high school on time, enter college directly, and graduate within six years (if enrolled in four-year colleges) or three years (if enrolled in two-year colleges), as compared to 28 students in Pennsylvania, and 27 in Iowa, North Dakota and Massachusetts, the top performing states. ³In 2002, Colorado ranked 19th on this measure, tied with Ohio, and its performance is slightly above the U.S. average.



Despite its average performance in the educational pipeline, Colorado had the second highest share of state population over 25 years of age with a bachelor's degree or higher in 2002. This suggests that states yielding a relatively high number of graduates may not retain them after graduation, losing them instead to states with more vibrant economies, such as Colorado's, during the late 1990s. ⁴

- During 1989-2001, Colorado was the second largest net importer of college graduates and college freshmen. ⁵

On the basis of these stages in the educational pipeline, three main policy areas emerge as most appropriate for states to exert leverage through policy remedies and seek to improve their performance: 1) High school graduation, 2) Entry into college, and 3) Persistence and graduation from college. Figure 2, which presents the loss from an initial group of ninth grade students at each stage of transition in the educational pipeline, shows:

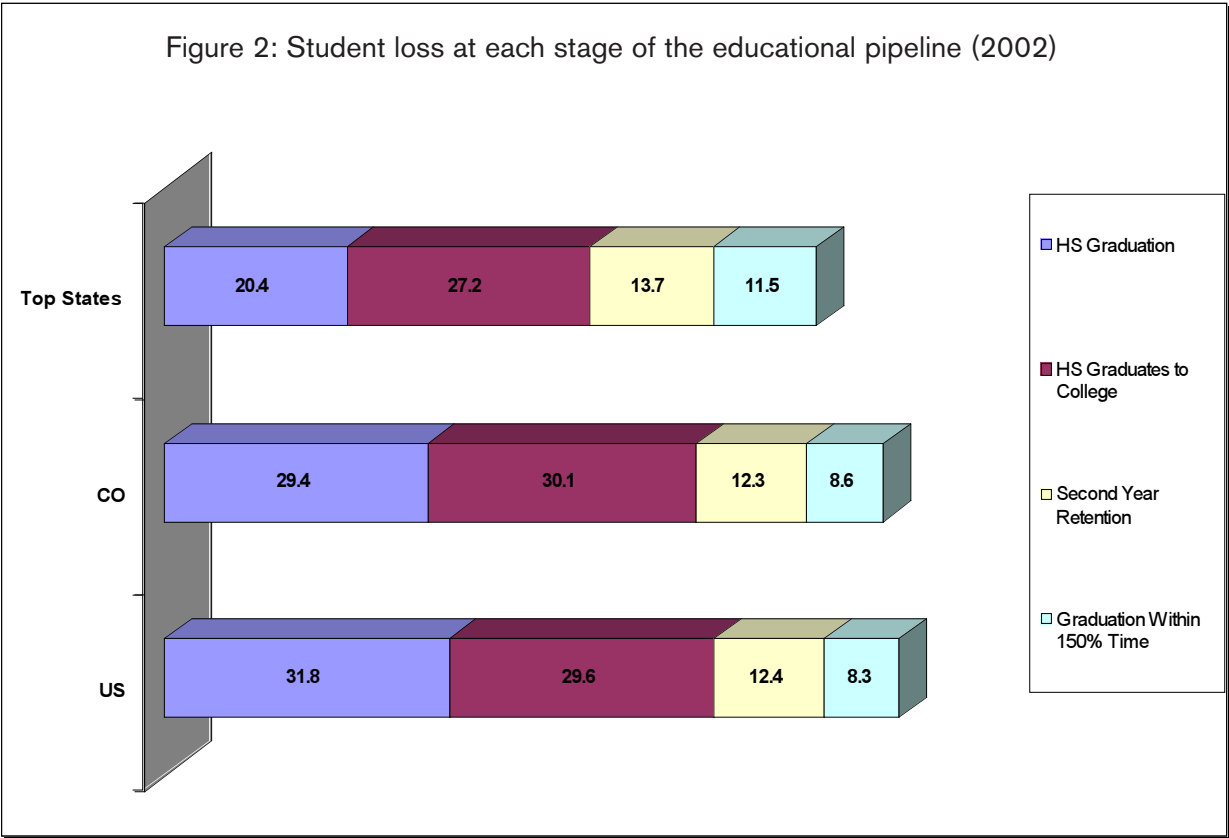
- Colorado's educational pipeline suffers its most severe leakage during the transition of recent high school graduates enrolling directly in college upon graduation.



Specifically, of 100 ninth graders, 71 graduate from high school on time (loss of 29). Of these, 41 will go directly to college (loss of another 30), 28 will return their second year (loss of another 13) and only 20 will graduate from college within 150 percent of the time it takes to complete degree requirements (a final loss of eight).

The rate of high school graduates directly entering college is the first point in the pipeline where Colorado's performance, with a loss of 30.1, is slightly worse than the national average loss of 29.6. The second point is the graduation rate within 150 percent of the time, where Colorado's performance is slightly below the national average.

The chart below compares Colorado's performance to the national average and to the states with the best overall pipeline performance, Pennsylvania, Iowa and North Dakota. A complete analysis of the educational pipeline for all 50 states can be found in Appendix 1 on pages 5 and 6.



The educational pipeline is very useful in viewing the transitional stages from entering high school through college graduation. But it is necessary to closely examine a state's performance in each stage to identify the most pressing challenges that need to be addressed for improvement of educational attainment and enhancement of a state's educational capital.



Appendix I: Educational Pipeline (2002)

Rank	State	For every 100 Ninth Graders	% Graduate from High School	% Enter College	% Are Still Enrolled Their Sophomore Year	% Graduate within 150% Time
1	Pennsylvania	100	77.9	46.6	36.3	27.6
2	North Dakota	100	83.9	61.8	44.2	27
3	Iowa	100	82.4	53	36.5	27.5
4	Massachusetts	100	74.4	48.4	37.9	26.9
5	Connecticut	100	75.6	47.1	36.4	25.6
6	Minnesota	100	84.7	53.3	37.8	24.6
7	New Hampshire	100	75.3	42.5	32.9	25.1
8	New Jersey	100	90.6	56.8	41.8	23.7
9	Wisconsin	100	78.6	45.5	33.2	23.9
10	South Dakota	100	79.2	48.2	33.1	23
11	Nebraska	100	81.6	48	33.6	23.1
12	Indiana	100	68.3	42.6	31.7	21.7
13	Virginia	100	73.8	40.1	30.6	22
14	Rhode Island	100	71.2	38	30.8	21.7
15	Wyoming	100	73.3	40.4	24.7	21.3
16	Maine	100	75.9	38.9	29.5	21
17	Delaware	100	63.1	37.8	29.8	21
18	Vermont	100	78.1	35.5	27.7	21.4
19	Ohio	100	71.4	41.1	29.3	19.6
20	Colorado	100	70.6	40.5	28.2	19.6
21	Illinois	100	72.7	41.7	29	19
22	New York	100	58.4	40.1	30.2	18.8
23	Missouri	100	73.1	39	26.6	19
24	Maryland	100	73.5	41.5	29.8	17.7
25	Kansas	100	75.9	41.4	26.4	18.4
26	Michigan	100	78.7	40.2	28.1	17.5
27	Utah	100	83.9	38.7	25.3	17.7
28	North Carolina	100	60.8	38.7	27.6	18.3
29	California	100	69.7	35.6	23.6	18.2
30	Montana	100	77.9	42.6	27.4	17.3
31	Arkansas	100	73.9	42.3	27	14.9
32	Kentucky	100	62.3	38.9	25.6	15.3
33	West Virginia	100	71.1	38.4	26.9	15.3
34	Tennessee	100	58.5	36.2	24.5	15.1
35	Oregon	100	68.8	32.7	22.3	14.7
36	Arizona	100	66.4	31	19.7	14.7
37	Washington	100	67.5	29.6	21.6	15.3
38	Oklahoma	100	72.5	37.1	23.5	13.6
39	Idaho	100	78.3	35.2	22.9	14.4
40	Florida	100	56	31	23.1	13.6
41	Mississippi	100	58.5	38.1	24.1	13.1
42	Louisiana	100	59.2	34.1	23.3	12.8
43	Alabama	100	59.4	32.8	22.2	12.8



Appendix I: Educational Pipeline (2002) continued

44	South Carolina	100	49.4	29.4	20.6	12.9
45	Texas	100	62.5	33.4	20.6	12
46	Georgia	100	53.2	31.6	22.7	12.2
47	Hawaii	100	62.9	31.3	20.8	10.8
48	Alaska	100	59.3	28.1	NA	11.3
49	Nevada	100	68.2	27.6	18.3	10.6
50	New Mexico	100	59.8	35	22.1	10.3
	Nation	100	68.2	38.6	26.2	17.9

Source: "Student Pipeline – Transition and Completion Rates from 9th Grade to College." The National Information Center for Higher Education Policymaking and Analysis. www.higheredinfo.org, Crosscutting Info section.



Endnotes

¹ Ewell, Peter T.; Jones, Dennis P. and Patrick J. Kelly. (2003). “Conceptualizing and Researching the Educational Pipeline.” National Center for Higher Education Management Systems News, Vol. 20 (May). pp. 2-9.

² Specifically, the following measures are used: 1) Public 9th graders’ high school graduation rate in four years, 2) College-going rate of recent high school graduates (public and private), 3) Percentage of first-time, full-time freshmen at two-year and four-year colleges and universities who return in their second year, and 4) Percentage of first-time, full-time students who attained an associate’s degree within three years and percentage of first-time, full-time students who attained a bachelor’s degree within six years of enrolling.

The following students are not captured in the data: 1) Students who take more than four years to graduate from high school, 2) Students who do not graduate from high school but later achieve a certificate of high school equivalency, 3) Students who delay college entry, 4) Students who are initially enrolled part time, 5) Students who transfer across institutions during college, or 6) Students who drop out of college and return several years later.

“Educational Pipeline FAQ,” www.higheredinfo.org

³ “Student Pipeline – Transition and Completion Rates from 9th Grade to College.” The National Information Center for Higher Education Policymaking and Analysis. www.higheredinfo.org (Crosscutting Info Section).

⁴ U.S. Census Bureau, American Community Survey. “Percent of People 25 Years and Over Who Have Completed a Bachelor’s Degree.” Ranking Tables: 2002 Index. www.census.gov/acs/www

⁵ Mortenson, Tom. (2003). “Interstate Migration and Geographic Mobility of College Graduates: 1997-2002.” Postsecondary Education OPPORTUNITY: The Environmental Scanning Research Letter for Postsecondary Education. No. 130 (April).

For more information on access to postsecondary education in Colorado, contact Spiros Protopsaltis, policy analyst, at The Bell Policy Center, (303) 297-0456 in metro Denver, (866) 283-8051 toll-free in Colorado, or at spiros@thebell.org.

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