Understanding the Colorado Growth Model

A Background Briefing

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Who Wrote This?

- I am a former CEO, CFO, and management consultant, who now divides his time between advising corporate boards and working to improve K12 achievement performance
  - I have been involved in K12 improvement for over a decade, for the last four years here in Colorado, and before that in Alberta and Rhode Island
- My wife and I have four children in Jeffco public schools
- I am an Advisory Council member of Colorado Succeeds, chair Wheat Ridge High School's Accountability Committee, have just joined Jeffco's Strategic Planning Advisory Council/District Accountability Committee, and was formerly a member of the Colorado State Advisory Committee for Gifted Education
- Politically, I am an Independent -- an old fashioned moderate pragmatist

Why Did I Write This?

- Before moving to Colorado, I experienced two very different K12 performance improvement processes
  - In Alberta, Canada, a long-term collaboration between K12 (including teachers unions), the business community, and politicians resulted in dramatic academic performance gains (based on the PISA global tests), which led to higher funding for K12 and substantial increases in teacher compensation. Everyone ended up a winner
  - In Rhode Island, rising conflict between K12, the business community, and politicians blocked many performance improvement initiatives and eventually led to the most heavily Democratic state in the nation voting to significantly reduce teacher pensions. Everyone ended up a loser
- I know which path I want to see Colorado follow
- I also recognize the significant challenges we face
  - Increasing pressure to fund K12 pensions (PERA)
  - The introduction of tougher (and, on a global basis, more realistic) academic standards which will undoubtedly shock a lot of people when the first testing results are published in 2016
    - In New York, which has already introduced more rigorous Common Core standards, the percent of students scoring at least proficient on state achievement tests dropped by 30% or more
- To meet these challenges, we need to accelerate the rate at which K12 performance is improving

Why Did I Write This? (cont'd)

- Accurate, timely feedback is a precondition for performance improvement in most areas of life
  - Fooling ourselves about how good we are is generally not in our long term best interest
- Unfortunately, after four years of unraveling its mysteries, I have concluded that the way data from the Colorado Growth Model (CSAP/TCAP) is being used has often lulled us into a false sense of security about how well we are doing
  - For example, I have lost track of the number of times I have heard this question: "If our median growth percentiles are so good, why aren't we seeing significant increases in the percentage of students who are scoring at the proficient and advanced levels?"

Why Did I Write This? (cont'd)

- To help parents, politicians, business leaders, and K12 professionals better understand how to use the information produced by the Colorado Growth Model to accelerate performance improvement, I launched a website, k12accountability.org
- However, the election of a new majority on the Jeffco Board of Ed, and the resignation of Cindy Stevenson after 12 years as CEO/ Superintendent of Jeffco has triggered many fervent assertions that Jeffco's achievement performance has been outstanding in recent years, and that the new Board should not make changes
- Unfortunately, this view of Jeffco's achievement track record is very badly mistaken. Continuing to hold onto this opinion will only further delay long overdue and much needed improvements in Jeffco's management, governance, and oversight processes
- In sum, it is critical that parents, politicians, business leaders, and K12 professionals understand the real Jeffco achievement story, so that we can, hopefully, replicate Alberta's successful collaborative performance improvement experience before the growing pressure of oncoming events sends us down the Rhode Island path

The Colorado Growth Model

- Colorado has established academic standards for each grade in reading, writing, math, and science
- Each year, students in Grades 3 through 10 take the CSAP/ TCAP test to assess the extent to which they have met these standards
- In Grade 11, students take the national ACT test to assess their college and career readiness
- A student who meets Colorado standards in each grade should also score at or above the college and career ready standard on the ACT, graduate from high school, and not need to take any remedial courses if they choose to attend college

The Colorado Growth Model (cont'd)

- CSAP/TCAP "scale scores" measure a student's progress over time in a given subject area
  - The TCAP scoring scale goes from 150 to 999 for Reading, and 150 to 950 for Writing and Math
  - In theory, a student starts as a novice in Grade 3 (the first TCAP test grade), and progresses up the learning curve from there to Grade 10, the last TCAP test year
- While CSAP/TCAP questions have slowly grown more challenging over time, it is still a much easier test than the National Assessment of Educational Progress
  - For example, while 52% of Colorado 8th graders scored at least proficient on the TCAP math test in 2013, only 42% of them scored at least proficient on the NAEP
  - In contrast, in Massachusetts, 54% were at least proficient on the state test, and 55% were at least proficient on the NAEP
- CSAP/TCAP uses "Cut Scores" to classify students' achievement as unsatisfactory, partially proficient, proficient, and advanced
  - The minimum score for proficiency rises every year:

The Colorado Growth Model
Minimum Scale Score to Qualify as Proficient
Source: TCAP 2012 Technical Manual

	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Math	419	455	494	520	559	577	602	627
Reading	526	572	588	600	620	632	642	663
Writing	465	485	498	513	539	556	563	578

The Colorado Growth Model (cont'd)

- Scale scores are the "ground truth" in the Colorado Growth Model. All other metrics are derived from these scale scores
- A student's "growth percentile" is a measure of his/her academic growth compared to all other students in Colorado who started with the same test score the previous year
  - A good analogy I have heard used is to a running race in which 100 students start on the same line, and your child finishes 24th – that is, in the 75th percentile (assuming a 0 to 99 scale)
  - While this tells you how well your child performed compared to the others who were on the starting line with him/her, the 75th percentile tells you nothing about whether his/her time was good enough to get a college track scholarship. For that, you need to know his/her absolute time, or, in the case of TCAP, his/her scale score
- A group of students' "Median Growth Percentile" is the growth percentile above and below which there are equal numbers of students

Which Metrics Are Best?

- The short – but critical -- answer is that it really depends on the question you ask
- For my children's achievement performance, the TCAP scale score (and its comparison to the cut scores for proficient or advanced), and the growth percentile are both useful
  - I focus on how far away my children's TCAP scores are from the cut scores for different achievement categories, and how fast their achievement has grown relative to their peers
- For my children's teachers' performance, Median Growth Percentile seems the best metric
  - Teachers cannot control either students' socioeconomic backgrounds or the quality of the previous schooling they have received (both of which affect average scale score, and percent proficient and advance)
  - SB-191 (the Colorado teacher performance evaluation system) is based on this same logic

Which Metrics Are Best? (cont'd)

- As a SAC chair, I use different metrics to evaluate our school's performance
  - We don't use percent proficient and advanced, or absolute scale score gains, because these are both driven by factors outside our school's control – student demographics and the impact of their previous years of schooling (the latter becomes a more severe obstacle as students go up in grade). We cannot expect teachers and schools to work miracles, and make up for the cumulative learning shortfall that has occurred before a student walks in their door.
  - For example, Colorado Department of Education research has concluded that "if students are not proficient on the [CSAP/TCAP] assessment in sixth grade, they are likely to require remediation in their first year of college." (see "Shining a Light on College Remediation in Colorado" by Lefly, Lovell, and O'Brien)
  - Similarly, the ACT's "Forgotten Middle" report found that, "under current conditions, the level of academic achievement that students attain by eighth grade has a larger impact on their college and career readiness by the time they graduate high school than anything that happens academically in high school…We need to intervene in the upper elementary grades and in middle school"
- Median Growth Percentile is useful for measuring performance at schools, for the same reason as it is for teachers; however, it only measures relative annual achievement growth
  - Over a longer period of time, we want to see our building staff working as a team to systematically learn and innovate in order to raise absolute scale scores (and decrease their variance). To measure this we use Effect Size (average scale score in 2013 less average scale score at some point in the past, divided by the most recent year's standard deviation of scale scores. This standardizes the metric and makes it comparable across schools). Research has shown that the average grade-to-grade increase in standardized test scores is equal to an Effect Size of about .30. Schools with subject ES greater than .30 have added another year's worth of learning in that subject area
  - Finally, we also use metrics based on the Grade 11 ACT scores, which is the last test all Jeffco students take (unfortunately, these results are not broken down by student group in the same way that CSAP/TCAP scores are)

Which Metrics Are Best? (cont'd)

- At the District level, however, average scale score gains, changes in the percent proficient and advanced students, Effect Size, and Grade 11 ACT metrics (along with college remediation rates for District graduates) are all very relevant metrics, as they measure multiyear, system-wide outcomes
- However, at the District Level, the Median Growth Percentile metric generates misleading impressions
  - As you will see in the next pages, as a metric for measuring District performance, MGP is critically flawed
  - CDE's heavy reliance in MGP in their District Rating formula suggests that it is also a flawed system; their various school excellence awards essentially recognize superior zip codes and student socioeconomic backgrounds rather than true value added by teachers and building teams
  - If you doubt this, answer this question: Over the past five years, in Boulder Valley, Cherry Creek, and Jeffco, which high school had the largest increase in Grade 11 ACT composite score?
  - Answer: Jefferson High School. Yes, you read that right. But no "John Irwin Award of Excellence" from CDE for them, I'm afraid

Median Growth Percentile Can Give You A False Impression About Real Academic Improvement

- If the Median Growth Percentile (MGP) represents an absolute change in TCAP scale score which is less than the increase in the minimum cut score for proficiency, you can get a false sense of security about how well a school or district is performing, even if its MGP is significantly above 50
- The following analysis will make this painfully clear
- Because so many students in Colorado take the TCAP, at the state level the law of large numbers implies that the distribution of scores in a grade will be approximately normal (i.e., bell-curve shaped, or Gaussian).
  - In this case, the average (mean) score will equal the median score
  - Thus the grade-to-grade change in average score should closely approximate the score associated with the Median Growth Percentile

As You Can See, The 50th Median Growth Percentile Represents A Scale Score Gain That Is LESS Than The Grade-to-Grade Increase In The Minimum Cut Score For Proficiency

Change in average state CSAP/TCAP scale score, from grade to grade

Math	*2006 to 07*	*07 to 08*	*08 to 09*	*09 to 10*	*10 to 11*	*11 to 12*	*12 to 13*	*Increase in Minimum Proficient Score*
3 to 4	27.07	32.06	28.10	33.86	24.76	35.18	28.92	36.00
4 to 5	30.50	28.79	26.71	28.00	28.42	25.89	25.00	39.00
5 to 6	17.23	17.68	19.66	21.66	19.34	15.54	22.52	26.00
6 to 7	27.86	11.37	24.33	11.71	22.44	21.99	27.84	39.00
7 to 8	21.82	11.15	24.50	13.69	23.90	16.29	15.79	18.00
8 to 9	7.60	11.12	0.36	5.40	0.93	-0.15	2.48	25.00
9 to 10	10.36	16.05	10.51	19.36	13.73	17.52	17.09	25.00

Reading	*2006 to 07*	*07 to 08*	*08 to 09*	*09 to 10*	*10 to 11*	*11 to 12*	*12 to 13*	*Increase in Minimum Proficient Score*
3 to 4	30.21	30.51	32.49	26.54	32.86	27.48	24.80	46.00
4 to 5	21.54	29.13	24.77	26.04	25.18	25.34	24.90	16.00
5 to 6	11.34	16.91	13.76	17.94	14.00	18.68	18.92	12.00
6 to 7	12.88	14.53	10.89	13.79	11.36	14.39	11.42	20.00
7 to 8	11.46	15.73	8.83	13.63	11.42	10.59	10.27	12.00
8 to 9	9.99	14.05	7.26	14.10	6.37	7.90	8.48	10.00
9 to 10	25.48	22.17	24.14	21.71	18.23	23.22	25.28	21.00

Writing	*2006 to 07*	*07 to 08*	*08 to 09*	*09 to 10*	*10 to 11*	*11 to 12*	*12 to 13*	*Increase in Minimum Proficient Score*
3 to 4	15.01	19.00	18.90	17.08	26.03	16.70	20.52	20.00
4 to 5	22.50	27.10	20.25	22.07	25.59	17.44	23.01	13.00
5 to 6	16.12	19.12	17.78	15.70	22.09	10.42	14.44	15.00
6 to 7	31.70	23.79	32.54	24.49	29.98	29.49	37.55	26.00
7 to 8	10.26	3.33	9.85	6.47	11.92	10.92	6.17	17.00
8 to 9	7.33	3.15	6.28	1.01	3.41	1.17	8.13	7.00
9 to 10	15.09	8.49	17.87	8.90	12.54	7.54	12.21	15.00

This is why MGP can be above 50, even while the percentage of proficient and advanced students is declining.

Here are Jeffco's Median Growth Percentiles for the Past Eight Years

Median Growth Percentiles; Jeffco CSAP/TCAP Data								
Math	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
3 to 4	47	45	49	45	49	49	50	54
4 to 5	50	48	55	54	56	52	54	52
5 to 6	58	56	58	61	61	61	61	61
6 to 7	50	50	53	56	51	55	58	55
7 to 8	49	51	58	55	53	52	50	51
8 to 9	47	49	54	55	53	57	54	53
9 to 10	51	50	57	55	51	56	54	57
Reading	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
3 to 4	51	56	51	51	53	54	51	52
4 to 5	46	47	49	49	49	52	49	52
5 to 6	54	58	60	60	60	63	60	60
6 to 7	45	48	47	48	45	48	47	47
7 to 8	44	48	53	47	48	48	49	49
8 to 9	44	49	51	49	50	52	46	45
9 to 10	42	50	50	51	48	54	46	50
Writing	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
3 to 4	52	51	52	51	50	54	50	53
4 to 5	48	45	48	46	45	48	46	47
5 to 6	56	51	55	52	57	60	58	58
6 to 7	47	47	47	45	45	44	45	47
7 to 8	45	48	45	44	45	46	48	47
8 to 9	46	49	49	48	49	48	48	47
9 to 10	48	52	54	52	50	50	50	49

They make Jeffco look pretty good, don't they?

Why Jeffco's Median Growth Percentile Results Are Deceiving

- If you look just at Median Growth Percentiles, you could easily get the impression that Jeffco students are performing well; indeed, this is the performance metric most often cited by Dr. Stevenson, the previous Jeffco Board majorities, and District Accountability Committee co-chair
  - i.e., many District MGPs are above the 50th percentile
- However, like our example of children in the running race, these MGPs tell us nothing about whether the scale score increases they represent were sufficient to keep or move students into the Proficient category of achievement
- Another frequently heard assertion is that Jeffco's MGPs are a sign of excellent performance because they are higher than the state MGPs
- In fact, this is exactly what you would expect, because Jeffco has about 10% fewer at risk (free and reduced lunch eligible) students than the state not including Jeffco, and there is a negative correlation between MGP and the percentage of F&R students in a district
  - Based on the 2013 TCAP results, for math the negative correlation is (.19), for reading, (.21) and for writing it is (.24)
- The weakness of MGP-based claims for Jeffco's superior performance is very similar to the weakness of the frequently heard claim that Jeffco's performance is superior because its high school graduation rate ranks high among the top 50 largest school districts in the nation
  - Again, given the dynamics at work, this is exactly what we would expect to find. There is a (.83) correlation between the top 50 districts' free and reduced students percentages and their HS graduation rates
  - For the 44 of the top 50 districts for which the National Center for Education Statistics has current data on both the F&R percentage and the HS graduation rate, Jeffco has the 3rd lowest F&R percentage, but only the 6th highest HS graduation rate
  - And 29% of Jeffco's HS graduates who attend a public college or university in Colorado have to take remedial courses, which suggests we are pushing too many kids out the door who aren't prepared

Here are Jeffco's Grade-to-Grade Gains in Average Scale Score, Compared to the Increase in the Cut Scores for Proficient

Jeffco CSAP/TCAP Average Scale Score Grade-to-Grade Changes

Math	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	*Increase in Minimum Proficient Score*
3 to 4	23.59	17.84	14.61	21.12	30.89	23.37	34.09	30.66	36.00
4 to 5	36.29	28.90	33.89	30.76	33.27	30.64	29.19	25.31	39.00
5 to 6	18.43	22.17	18.54	27.48	28.22	28.12	22.69	29.35	26.00
6 to 7	9.20	24.37	16.72	25.26	8.20	22.61	22.96	28.16	39.00
7 to 8	10.79	19.95	24.49	25.55	12.71	22.96	13.32	12.86	18.00
8 to 9	13.25	7.90	15.93	2.93	7.38	4.60	2.58	5.92	25.00
9 to 10	14.14	7.97	17.83	10.48	14.17	14.48	16.80	19.76	25.00
Total Gain	*125.69*	*129.10*	*142.01*	*143.58*	*134.83*	*146.79*	*141.64*	*152.03*	*208.00*

Reading	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	*Increase in Minimum Proficient Score*
3 to 4	31.87	34.81	27.96	29.63	24.05	30.36	23.80	22.85	46.00
4 to 5	22.52	19.96	25.65	23.90	25.01	26.14	24.84	26.21	16.00
5 to 6	13.26	17.64	23.81	20.58	24.24	22.24	23.55	23.25	12.00
6 to 7	6.63	10.59	7.97	6.61	6.67	6.34	7.25	5.51	20.00
7 to 8	9.21	10.07	16.61	7.30	11.51	10.82	8.70	9.22	12.00
8 to 9	6.85	9.69	13.67	4.12	13.90	6.12	4.32	5.39	10.00
9 to 10	19.45	24.57	21.78	22.52	19.80	19.74	19.37	26.65	21.00
Total Gain	*109.80*	*127.32*	*137.47*	*114.66*	*125.19*	*121.77*	*111.84*	*119.08*	*137.00*

Writing	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	*Increase in Minimum Proficient Score*
3 to 4	13.74	12.59	18.83	17.65	15.26	28.32	14.45	21.66	20.00
4 to 5	22.20	18.04	26.36	16.44	18.09	24.19	14.25	21.70	13.00
5 to 6	23.49	16.97	25.61	20.40	22.67	31.96	17.40	21.04	15.00
6 to 7	16.92	28.99	21.08	26.61	21.28	22.96	23.17	33.50	26.00
7 to 8	4.38	10.43	-0.10	5.86	5.83	10.70	10.56	5.07	17.00
8 to 9	8.79	9.26	2.89	7.70	5.53	4.47	2.52	8.87	7.00
9 to 10	8.65	15.52	11.99	16.93	8.57	10.52	6.15	11.10	15.00
Total Gain	*98.17*	*111.80*	*106.67*	*111.60*	*97.22*	*133.12*	*88.50*	*122.93*	*113.00*

In contrast to Median Growth Percentiles, grade-to-grade scale score data show that over time Jeffco students are falling further behind the cut-scores for proficiency, and face an ever larger catch-up challenge, which many of them will never meet.

Given Jeffco's Scale Score Shortfalls, We See A Continuing Pattern of Grade-to-Grade Declines in the Percent of Proficient Students

Percent of Students Scoring Proficient or Advanced on CSAP/TCAP by Subject, Grade, and Year								
Jeffco TCAP Data from CDE Schoolview/Datalab								
Math	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	76	72	74	76	74	76	75	74
Grade 4	72	73	71	72	75	75	77	77
Grade 5	70	67	70	67	70	71	68	70
Grade 6	65	68	67	71	69	71	71	70
Grade 7	53	58	55	61	56	61	61	63
Grade 8	54	55	56	61	58	59	58	59
Grade 9	47	44	48	45	50	47	43	46
Grade 10	38	39	40	40	39	42	42	43
Reading	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	75	77	77	80	76	80	80	80
Grade 4	74	72	72	72	75	73	75	76
Grade 5	75	73	77	74	75	78	77	78
Grade 6	77	79	80	81	82	82	84	83
Grade 7	72	72	71	73	75	74	75	76
Grade 8	73	70	75	69	74	73	74	74
Grade 9	72	73	73	75	73	72	72	72
Grade 10	70	74	72	75	70	71	71	75
Writing	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	62	63	59	63	56	61	58	56
Grade 4	60	57	60	57	58	63	56	58
Grade 5	68	62	65	62	62	66	63	63
Grade 6	69	68	68	69	66	71	65	67
Grade 7	64	68	65	67	65	64	67	68
Grade 8	57	59	58	57	60	59	59	60
Grade 9	58	57	56	59	56	58	56	59
Grade 10	54	57	55	56	53	53	52	53

This pattern of grade-to-grade proficiency decline has not changed over the eight years for which we have CSAP/TCAP data.

This Problem is Not Due to Poverty: Here are the Percent Proficient and Advanced for Students Not Eligible for Free and Reduced Lunch

Percent Proficient & Advanced -- Students Not Eligible for Free and Reduced Lunch								
Jeffco TCAP Data from CDE Schoolview/Datalab								
Math	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	83	78	81	82	82	84	84	83
Grade 4	79	80	79	80	83	83	86	85
Grade 5	77	74	78	76	79	80	78	81
Grade 6	72	75	74	79	78	79	80	79
Grade 7	60	64	63	70	66	72	73	74
Grade 8	61	62	63	69	67	69	69	71
Grade 9	53	50	54	52	57	56	52	57
Grade 10	43	44	45	46	45	49	50	52
Reading	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	82	83	84	86	84	87	87	87
Grade 4	80	79	81	80	83	81	85	85
Grade 5	83	80	84	82	84	86	85	87
Grade 6	84	85	86	88	88	89	91	90
Grade 7	78	79	78	80	83	84	84	85
Grade 8	79	76	81	77	82	82	84	83
Grade 9	78	78	79	81	80	80	80	82
Grade 10	75	79	77	81	77	78	79	82
Writing	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	69	70	67	71	66	71	68	67
Grade 4	67	65	69	67	68	72	67	69
Grade 5	76	70	74	72	72	75	74	74
Grade 6	76	75	75	78	76	80	74	77
Grade 7	71	74	72	76	74	74	77	78
Grade 8	64	66	65	66	69	69	70	71
Grade 9	65	62	63	66	63	68	66	70
Grade 10	59	63	60	62	61	60	61	63

Moreover, this problem existed before District budget cuts started in 2009, which suggests that a lack of money is not the root cause.

You Also See the Same Performance Problems for Free and Reduced Students (34% of the District) – Only They Are Worse

Percent Proficient & Advanced -- Students Eligible for Free and Reduced Lunch								
Jeffco TCAP Data from CDE Schoolview/Datalab								
Math	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	56	54	53	59	56	58	58	57
Grade 4	53	53	51	53	57	59	60	61
Grade 5	48	43	47	45	49	53	49	50
Grade 6	43	47	47	51	49	54	53	51
Grade 7	28	33	27	35	32	38	39	42
Grade 8	29	28	31	34	34	36	35	36
Grade 9	22	21	23	20	27	23	21	24
Grade 10	16	15	19	16	17	21	20	20
Reading	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	54	59	58	64	60	64	66	65
Grade 4	55	48	51	51	58	55	57	59
Grade 5	53	50	56	55	56	60	60	60
Grade 6	56	60	63	62	67	67	71	70
Grade 7	50	48	49	51	54	54	57	58
Grade 8	49	46	52	45	52	50	54	56
Grade 9	47	51	51	51	53	50	53	53
Grade 10	46	50	49	53	47	52	51	57
Writing	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	38	42	37	41	35	38	39	36
Grade 4	37	33	35	35	35	44	34	37
Grade 5	44	37	39	39	39	46	44	41
Grade 6	47	46	46	47	46	53	46	50
Grade 7	40	45	39	42	41	42	47	49
Grade 8	33	33	33	32	35	35	37	38
Grade 9	30	31	31	32	32	33	32	37
Grade 10	29	30	30	31	27	30	29	32

In Massachusetts in 2013, 82% of Free and Reduced students in Grade 10 scored at least proficient on the English Language Arts state achievement test, and 63% did so on the math test. And these tests are tougher than TCAP.

Achievement Data for Gifted Students (11% of District) Tell the Same Frustrating Story

Percent of GT (ALP) Students Scoring Advanced on CSAP/TCAP								
Jeffco TCAP Data from CDE Schoolview/Datalab								
Math	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	85	72	83	77	91	83	83	79
Grade 4	76	76	73	80	82	82	82	80
Grade 5	79	82	83	79	85	86	84	80
Grade 6	71	80	78	83	81	88	85	87
Grade 7	73	71	73	82	76	80	86	87
Grade 8	74	69	74	74	79	75	79	84
Grade 9	62	56	63	57	63	61	58	67
Grade 10	31	28	31	31	29	33	37	35
Reading	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	31	39	34	39	42	37	33	34
Grade 4	30	39	28	42	25	34	26	24
Grade 5	41	41	42	45	51	43	42	41
Grade 6	48	53	54	58	64	65	55	55
Grade 7	39	41	41	40	41	44	41	42
Grade 8	41	39	47	33	38	44	37	40
Grade 9	23	21	33	19	23	19	23	19
Grade 10	48	42	47	43	41	36	29	40
Writing	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	50	47	50	44	46	37	31	34
Grade 4	38	40	44	41	47	51	34	35
Grade 5	52	41	52	45	44	47	46	38
Grade 6	50	48	46	44	50	55	44	45
Grade 7	48	57	50	54	48	46	53	52
Grade 8	36	43	43	34	42	42	39	39
Grade 9	33	35	37	34	34	33	31	31
Grade 10	36	35	40	37	36	21	22	28

Note that this analysis uses percent scoring advanced, not percent scoring proficient or advanced. Percent advanced is a more rigorous metric for GT student achievement.

The Same Depressing Pattern Also Occurs in the Results for Special Education Students (10% of District)

Percent of Special Education (IEP) Students Scoring Proficient or Advanced on CSAP/TCAP								
Jeffco TCAP Data from CDE Schoolview/Datalab								
Math	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	40	36	41	41	39	41	35	36
Grade 4	34	33	33	35	33	35	34	35
Grade 5	27	26	30	26	27	27	27	25
Grade 6	19	25	26	24	24	25	26	25
Grade 7	12	14	15	17	11	15	15	16
Grade 8	12	12	15	17	16	14	13	15
Grade 9	8	8	12	7	11	10	5	8
Grade 10	5	5	7	7	3	6	7	4
Reading	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	31	36	36	37	35	35	35	39
Grade 4	29	24	30	27	24	28	27	29
Grade 5	28	27	31	28	27	31	30	29
Grade 6	30	35	34	34	36	37	38	37
Grade 7	22	24	24	23	23	24	24	24
Grade 8	23	21	27	21	24	21	24	26
Grade 9	22	23	25	25	25	23	22	24
Grade 10	16	22	23	25	24	21	22	27
Writing	**2005/2006**	**2006/2007**	**2007/2008**	**2008/2009**	**2009/2010**	**2010/2011**	**2011/2012**	**2012/2013**
Grade 3	19	20	19	19	17	17	14	17
Grade 4	19	14	19	14	13	20	14	15
Grade 5	21	18	22	19	16	18	20	16
Grade 6	21	20	22	19	20	24	18	20
Grade 7	15	20	20	16	14	15	16	18
Grade 8	9	12	11	10	10	9	10	11
Grade 9	11	10	11	10	11	11	8	11
Grade 10	5	9	8	8	9	9	7	6

Given these TCAP Results, Jeffco's Poor Grade 11 ACT Results Should Not Come as a Surprise

- The ACT is a national test of college and career readiness that since 2008 has been taken by every 11th grade student in Colorado
  - It is the best measure we have of a district's cumulative effectiveness
- On the 2013 ACT, the majority of Jeffco 11th graders were NOT college and career ready
  - In reading, only 45% were at or above the minimum score for college and career readiness
  - In math, only 45% met the C&C threshold, and in science, only 39%
- Since 2008, a very large number of Jeffco 11th graders have scored below college and career ready on the ACT
  - 20,792 in reading; 22,345 in math; and 27,111 in science