February 12, 2017

Dear Jeffco Board of Education,

As you know, I am a member of the District Accountability Committee. However, what follows are my personal views.

The agenda for this Thursday's Study Session (where public comment is not allowed) includes a discussion of the NWEA MAP winter assessment results. I have reviewed the district's presentation that was posted on BoardDocs, and was frustrated (but sadly not surprised) to see that, yet again, this discussion will avoid the elephant in the room.

For the benefit of your board, the public, and our friends in the media, in this letter I am going to brief you on that elephant.

First, let's quickly review two ways of measuring student achievement results: proficiency and growth.

Proficiency metrics tell us whether, at a point in time, a student has met or exceeded an absolute standard – e.g., the college and career ready standard on the ACT, or the state grade level standard on CMAS.

Growth metrics tell us about the change in achievement results between two points in time. There are at least three ways to measure growth. The first is in absolute terms – i.e., the change in scale score on an assessment. The second is in normalized terms – i.e., divide the absolute change in scale score by the standard deviation of all scale scores. Normalized scores facilitate the comparison of growth measured using different assessment instruments (and across states and nations). The third is the growth percentile method used in Colorado, that measures relative, but not absolute growth – i.e., compared to other students who started in the same place, in what percentile was a student's growth over a give period? (e.g., absolute growth could have been below the amount required to keep up with the rising proficiency standard, but still be in the 70^{th} percentile relative to other students).

Second, let's review which metric is most appropriate for measuring a school's versus a district's performance.

An individual school has its students for a far shorter time than a district. Schools also control far fewer resources and decisions than districts. Finally, schools don't control their students' starting points when they walk in the door for the first time. For example, consider two schools, one with

a high percentage of free and reduced eligible students, few of whom meet the grade level proficiency standard, and one with a high percentage of affluent students who do. Yet the first school has much higher achievement growth than the latter. To say that the more affluent school is the better one is to mistake being born on third base with hitting a triple. All of these considerations point towards achievement growth as the best measure of an individual school's performance (e.g., on a growth basis, a school in Edgewater could outperform one in Evergreen).

Exactly the opposite is true at the district level, where proficiency metrics are paramount. The primary achievement goal for a district is to spend 12 or 13 years educating students to ensure that they graduate college and career ready. On a prospective basis, the number and percentage of students in each grade who are on track to graduate college and career ready is a critical district performance metric.

Let's now move on to Jeffco district data.

Despite the fact that Jeffco spends about a billion taxpayer dollars every year, on the 2016 ACT taken by all Colorado 11th graders a stunning 68% of our students failed to meet all four college and career ready benchmarks. Since Jeffco's percentage of free and reduced eligible students is only 33%, it is clear that poverty alone cannot explain this dismal result.

(Note that ACT results are also highly correlated with results on the ASVAB test that students wishing to enter the military must take, as well as pre-employment screening tests like WorkKeys. They can also be crosswalked to results on the SAT assessment that will replace the ACT in 2017).

This brings us to the elephant in the room.

Faced with Jeffco's failure to graduate more students who are college and career ready, as a board you must ask three questions:

1. How many current students are not on track to graduate college and career ready?
2. How far off track are they?
3. What are the chances they will catch up by the time they take the SAT at the end of 11th grade?

The NWEA MAP product includes a very impressive suite of analytics that can be used to help districts, schools, and teachers make better use of the

fall, winter, and spring MAP assessment data. In fact, the NWEA staff is very willing to describe these tools, as they did for me.

One analytical tool uses MAP results to predict how many students are not on track to meet the ACT college and career ready benchmarks in reading and math. Specifically, this information is contained in the "Projected Proficiency Summary Report, Aggregate by District by Grade" (I note that this report is NOT in the presentation you will receive on Thursday night).

I specifically requested that this report be provided to the DAC UIP Subcommittee (unsurprisingly, it has never appeared in public again). Here is what it showed, based on Spring 2016 MAP results:

Jeffco
Spring 2016 MAP Results
Number/Percent of Students Not On Track
to Meet ACT Reading and Math C&C Benchmarks

	Reading			***Math***	
Grade	***Number***	***Percent***		***Number***	***Percent***
5	2640	45%		2965	51%
6	2854	48%		3396	57%
7	2955	50%		3387	56%
8	2859	50%		3356	59%
9	2975	53%		3330	63%
10	2551	50%		2774	75%

As you can see, the percentage of students who are not on track to meet the ACT college and career ready benchmarks increases as they move from 5th to 10th grade. This is the opposite of what parents and taxpayers should expect to see.

However, these results are consistent with another analysis I did two years ago, using TCAP data from 2012 to 2014. As you know, TCAP employed a vertical scoring scale; students were expected to progress from lower to higher scale scores as they moved from 3rd to 10th grade. The challenge for a student who failed to meet the proficient standard in any year was that he/she had to make up the ground lost in the starting grade, as well as the grade-to-grade increase in the cut score for proficiency.

The question I asked was how the year-to-year increase in average student scale score (i.e., average annual achievement growth) compared to the increase in the TCAP's proficient cut score. The results of this analysis were as follows (note that the year to year changes are normalized, and expressed in standard deviations):

Jeffco 2012 - 2104
Increase in TCAP Cut Score
vs. Increase in Avg. Student Score
Expressed in Std Deviations

	Reading			**Math**		
	Incr in Cut Score	*Incr in Avg Score*	*Difference*	*Incr in Cut Score*	*Incr in Avg Score*	*Difference*
Grade 5 - 6	0.18	0.38	0.20	0.35	0.34	-0.01
Grade 6 - 7	0.31	0.12	-0.19	0.50	0.35	-0.15
Grade 7 - 8	0.19	0.16	-0.03	0.24	0.18	-0.06
Grade 8 - 9	0.18	0.08	-0.10	0.34	0.07	-0.27
Grade 9 - 10	0.41	0.46	0.05	0.34	0.25	-0.09
Cumulative Difference			-0.07			-0.58

As you can see, average annual achievement growth (the grade to grade increase in average scale scores) did not keep up in either reading or math with the increase in cut scores for proficiency. As a result, you would expect an increasing number of students to not meet the proficient standard as they moved from grade to grade, which is exactly what we observe in the TCAP data, and what we now see again in the CMAS data and in NWEA's estimate (based on MAP data) of the number of students not on track to meet the college and career ready benchmarks in reading and math.

Put differently, for well over half our students, Jeffco delivers negative returns.

The second question is how far behind these off-track students really are.

To answer that, you can use the cumulative distributions of Jeffco's 2016 CMAS scores for ELA and math (available by request from CDE). The question to ask is the percentage of students in grades 5 and 8 for ELA, and 5 and 7 for math (because CMAS gives more than one math assessment to 8th graders) who were less than one standard deviation under the cut score for "Met Expectations" and the percentage that were more than one standard deviation below the cut. The underlying

assumption is that a student who consistently meets grade level standards will also meet the college and career ready standard on the grade 11 ACT (or this year, on the SAT).

Here is what you'll find:

Jeffco
2016 CMAS

	ELA			***Math***	
	Grade 5	***Grade 8***		***Grade 5***	***Grade 7***
Less than 1 Std Dev Below "Met Expectation" Cut Score	32%	34%		34%	35%
1 or More Std Dev Below "Met Expectation" Cut Score	21%	20%		24%	27%
	53%	54%		58%	62%

As noted above, given that historically Jeffco's average gain in reading and math scores on TCAP lagged behind the increase in the cut scores for proficient, it should be extremely challenging for a student who is below "Met Expectation" on CMAS to make up the lost ground. And this is just the result we see on CMAS between grades 5 and 8 for ELA and 5 and 7 for math (where achievement actually worsens).

The final question is how many of these kids will successfully meet the catch-up challenge, and reach the college and career ready benchmarks on the Grade 11 ACT or SAT assessment.

We already have NWEA's estimate, based on MAP data. The ACT organization has also researched this question, and reached similarly depressing conclusions.

In their report, "*Catching Up to College and Career Readiness*", the ACT found that 8th students who are less than one standard deviation below proficient on a typical assessment have a 29% chance of meeting the ACT college and career ready benchmark in reading, and a 19% chance of meeting it in math. Eighth graders who are more than one standard

deviation below proficient have just a 10% chance of meeting the C&C standard in reading, and a 3% chance in math.

This then, is the elephant in the room that your board apparently doesn't want to acknowledge: Despite spending a billion tax dollars each year, by the end of fifth grade (and possibly even earlier than that) over half of Jeffco's students are off track for meeting the ACT or SAT's college and career ready benchmarks by the time they graduate (if they do). Moreover, the odds that they will catch up are very low and worsen over time.

In sum, Jeffco has a massive and persistent student achievement problem that condemns tens of thousands of children to a lifetime of struggle in a global economy where skill requirements are increasing exponentially.

As has been painfully clear over the past fifteen years, making small tweaks to the Jeffco status quo will never solve our student achievement problem. It is long past time for the substantial (and undoubtedly painful) changes that are required if we are to give our kids the future they deserve.

Very truly yours,

Tom Coyne
Golden, CO

P.S. At last week's board meeting, I noted that one of the reasons Wheat Ridge High School cannot pay for two GT program specialists out of our SBB funds is because we spend that money on what I call "literacy triage specialists", who address the deep deficits facing too many of our kids: about 25% of our incoming 9th graders read at between a 7th and 5th grade level, and about 25% at 4th grade or below. And yet those students all received passing grades in elementary and middle school. This raises another painful question: Just what does a class grade really mean in Jeffco? How can students get passing grades in elementary and middle school and arrive in 9th grade reading so poorly that they are unable to access high school level material? **Don't the grades they have received represent a massive fraud that has been perpetrated on them, their parents, and the taxpayers?**