

Thinking Critically About Student Achievement in Jeffco

By Tom Coyne

As we head into what promises to be an interesting few months for Jeffco schools, I thought it would be useful to summarize the various arguments about the state of student achievement in our district. In my view, this debate underlies much of the sound and fury we have seen since the new board majority was elected in November 2013. Put simply, if you believe that Jeffco's student achievement results must substantially improve, you will likely agree that this logically requires substantial changes that will unavoidably, but temporarily increase the level of conflict in the district. On the other hand, if you believe that Jeffco's achievement results are acceptable then you will quite logically oppose change and negatively view any increase in the level of conflict in the district.

I'll start with an essential point on which I hope we all agree: the forces of globalization and the advancing capability of technology are dramatically changing the world in which our children will have to make a living in the future. And these processes aren't likely to slow down anytime soon. The disruption produced by the last great economic transition – from agriculture to industrialization around the turn of the twentieth century – lasted for at least forty years. Arguably, the current transition from an industrial to a digital economy only began around the turn of the 21st century, when information, communication, and technology ("ICT") investment surpassed thirty percent of total non-residential investment in the United States, and China's exports as a percent of its GDP began to rapidly increase.

Goldin and Katz highlight the implications of these trends for our schools in their book, *"The Race Between Education and Technology"* (similar points are made in *"Racing Against the Machine"* by Brynjolfsson and McAfee, and *"Beyond Automation"* by Davenport and Kirby). People who master the skills needed to complement advancing technology will earn high compensation; people who do not will increasingly find themselves in jobs with lower compensation, where personal service is critical (which

cannot be outsourced to another country or performed by technology). Unfortunately, results from a wide range of international studies, from the OECD's PISA assessments of 15 year olds' academic knowledge to its PIACC assessments of adult skills, consistently find that too many people in the United States lack the knowledge and skills they will need to thrive in the future.

The implications for student achievement are clear. Jeffco's primary goal is graduating students who are "college and career ready." Unfortunately, given the disruption underway in the global economy and labor market, this will continue to be a moving target, with the bar rising ever higher as improving technology and advancing globalization change the mix of knowledge and skills that human workers will need in order to thrive in the years ahead.

The crux of the different arguments one hears about student achievement comes down to this: Given the future our children will face, are Jeffco's student achievement results acceptable?

I have repeatedly argued they are not. Let's start by looking at the percent of Jeffco students who are college and career ready as they approach high school graduation.

Colorado is one of eighteen states that use the national ACT test to measure the college and career readiness of every 11th grade student. This serves two purposes: It expands access to college for students who might otherwise not take the test, and it provides policymakers, parents, and taxpayers with a measure of the cumulative results produced by the billions of dollars we spend each year on our public schools. The results on the ACT are not only very important for college admissions, but are also highly correlated with scores on the ASVAB test that students who want to serve in the military must take, as well as pre-employment screening tests (e.g., Work Keys) that are taken by many students going straight to work after high school. This is logical, as given the increasingly sophisticated mix of knowledge and skills required for well-paying jobs, college readiness and career readiness have become increasingly similar (see, *"Ready for College and Ready for Work: Same or Different?"* by the ACT organization).

In 2014, only 46% of Jeffco students met the "college and career ready" (C&C) standard in reading, only 47% in math, and only 45% in science. Since 2008, over

24,000 Jeffco 11th graders have failed to meet the C&C standard in reading, over 25,000 have failed to meet the math standard, and over 30,000 have failed to meet the science standard.

The usual excuse one hears for these dismal results is that they are due to poverty. However, the evidence contradicts this claim. Among Jeffco students eligible for free and reduced lunch (FRL), just 26% met the C&C reading standard, and 23% met the math and science standards (for Jeffco's Hispanic students, the results were also dismal, with just 27% meeting the C&C standard in reading, 25% meeting it in math, and 25% meeting it in science). However, only 52% of non-FRL students met the reading standard, 55% met the math standard, and 52% met the science standard. Jeffco's achievement problems go beyond poverty.

Even in our most affluent articulation areas (Chatfield, Columbine, Conifer, Dakota Ridge, Evergreen, and Ralston Valley), only 58% of non-FRL eligible 11th graders met the C&C reading standard in 2014, 64% met the math standard, and 59% met the science standard. Affluence has not protected our children from serious achievement shortfalls.

In theory, mastery of Colorado's state academic standards for grades three through ten should enable a student to meet the ACT's college and career ready standards in grade eleven. Unfortunately, [the past decade of CSAP and TCAP data](#) show that as students have progressed through the Jeffco system, fewer and fewer of them have met Colorado's proficiency standards, despite our spending about a billion dollars each year on Jeffco schools.

From my perspective, these are not acceptable achievement results. However, an argument I frequently hear in reply is that, in relative terms, Jeffco outperforms some other district. My response is that what matters for our children when they apply to college, the military, or for a job is their performance versus absolute, and not relative standards. If your child can't do algebra, it doesn't matter that Jeffco outperformed Colorado. He or she is not getting the job. Unfortunately, apart from lack of alignment with the criteria that will be used to make many decisions that affect our children's futures, this relative performance approach has more insidious effects. Ask yourself this question: Which organization is likely to more aggressively pursue performance

improvement – one that brags about how it outperforms laggards, or one that worries about how it underperforms leaders?

Let me give you a real example. We moved to Colorado from Alberta, Canada. Our province dramatically improved its student achievement performance (as measured by PISA), through the Alberta Initiative for School Improvement, a fifteen year, province-wide, systematic approach to identifying higher performing systems, learning from them, piloting new approaches from around the world, and scaling up the ones that worked in our schools. And when Canada's average math score recently slipped, it became a national issue. The lesson is clear: Bragging that Jeffco outperforms (pick your district) isn't going to improve our students' achievement results.

The next argument I often hear is that Jeffco's scores on tests like the ACT, TCAP, and CMAS are low because a significant number of students don't take them seriously, and consequently don't try their best when taking them.

I have a number of responses to this. The first is to note that, given the high percentage of Jeffco students who intend to go on to college after high school, it is hard for me to believe that they don't take the ACT seriously. Nor do I think that Jeffco students who go on to public colleges and universities in Colorado don't take their course placement tests seriously – yet at least 27% of them still had to pay for non-credit remediation courses (based on the most recent public data). My second response is that, since proficiency rates on TCAP and CMAS vary across subjects, even in the same grade, just as is the case with college and career readiness rates on the Grade 11 ACT, I can't believe that close to 60,000 students have each year been taking some subject tests more seriously than others.

My final response is a very personal one that is based on my observations as the Chair of the Wheat Ridge High School Accountability Committee. Our school has some of the highest achievement growth scores in Jeffco, across multiple categories of student – as well as a student body that is more than 50% at-risk kids. And over the most recent three-year period, Wheat Ridge HS has reduced its college remediation rate by much more than any other school in Jeffco – even as our percentage of at-risk students grew by more than at any other high school (source: 2014 CDHE Remedial Education Report). You cannot tell me that our students have not been taking their

studies or their assessments seriously, and haven't tried their best. In fact, it is deeply insulting to them, to their families, and to the professionals at WRHS to even suggest this.

The next argument about Jeffco's achievement results that I often hear is that the underlying assessments "just represent one moment in time." I have two responses to this. The first is that while it is undoubtedly the case that some students have an off day and "blow the test", those anecdotes cannot offset the results obtained when thousands of students take a test, and the exceptionally good and bad days cancel each other out. The second is that my conclusions about Jeffco's achievement performance do not rest on just one set of test results. Rather, they are based on decades of evidence. In point of fact, Jeffco has known it has a student achievement problem for at least thirty years.

Between 1971 and 1992, Jeffco published an annual report on its achievement results, titled "Are We On Target?" Starting in 1985/86, the report's findings were based on the results from the Iowa Tests of Basic Skills for grades 3 through 8, and the Iowa Tests of Achievement and Proficiency for grades 9 through 12 that were taken by all students every year, as well as on the results for Jeffco students who took the ACT and SAT college entrance tests.

In the mid-1980s, it became apparent that Jeffco's math scores on the ACT and SAT were slipping. Between 1985/86 and 1991/92, Jeffco's performance on most of the Iowa tests declined compared to the national norm. There was also a significant drop in the number of Jeffco students scoring in the top quartile of these tests. The district itself noted "results suggest that Jefferson County has not kept pace with the improvement in basic skills which has occurred nationally." In 1992, Jeffco announced it would no longer publish the "Are We On Target?" report.

According to Marilyn Saltzman (*F.M. Duffy Reports*, January 2006), "in April 1997 Jeffco hired a research firm to conduct a survey of Jefferson County voters. Results showed that 48 percent believed the district was on the wrong track, while only 37 percent said it was moving in the right direction."

In July 1997, Jane Hammond was hired as Jeffco's new Superintendent, in order, as she noted, "to bring 144 relatively autonomous schools into one high-performing

school district. The goal was to increase student achievement in a community with high standards and expectations” (Jane Hammond 2009 interview on AASA.org).

Hammond undertook an extensive process to develop a new strategy for the district, a key feature of which was the successful 1999 passage of a unique and nationally recognized “incentive” mill levy increase that explicitly tied increased taxpayer funding for the district to improved achievement results (the target was based on the percent of students scoring proficient or advanced in grade 3 reading, grade 4 reading, grade 4 writing, grade 5 math, grade 7 reading, grade 7 writing, grade 8 math, and grade 8 science). Here is what Hammond said about it in an interview with the American Association of School Administrators: “The baseline test score, calculated from 1999-2000 test results, was 53.2 percent of students scoring advanced/proficient. This meant the three-year goal would be 66.5 percent at the advanced/proficient level, a 25 percent gain. Just one year after implementing our Performance Promise Program, we increased to 60.4 percent of students scoring at that level — 13,459 more students or the equivalent of 138 classrooms! The improvements made by Jefferson County students exceeded those of most other students in the state. These results meant that in a single year (2001-2002), we met more than half of our three-year goal. As a result, the district will receive approximately \$10.6 million in additional revenue to support educational opportunities for students in the 2002-2003 school year.”

In July 2002, the Jeffco Board of Education suddenly replaced Jane Hammond with Cindy Stevenson. Over the next three years, Jeffco failed to meet any more achievement improvement targets in the Performance Progress Program, and as a result received no further increases in mill levy funding.

I have updated Jeffco’s results against the Performance Promise Program’s achievement target for 2008 through 2014 (previous TCAP data are not available because science standards were made more rigorous in 2008. In turn, TCAP science standards were replaced by CMAS standards in 2014, which I have included in my analysis). In 2008, an average of 66.7% of Jeffco students scored proficient or advanced on the eight tests, just meeting the achievement improvement target set in 1999. Between 2008 and 2014, the average remained essentially unchanged. And over this same period, we can also see TCAP proficiency rates that consistently

declined from grade to grade (especially in math). In sum, my conclusions about the inadequacy of Jeffco's student achievement performance are based on an abundance of evidence.

Supporters of the view that Jeffco really doesn't have a student achievement problem will next argue that the assessment tests themselves don't matter, that they don't measure anything important, and that parents should just rely on a student's grades to assess their academic results. Again, I have a few things to say in reply.

To begin with, there is abundant evidence that student grades have been inflating over time (see, "*Investigating Grade Inflation and Non-Equivalence*", by The College Board, and "*High School Grade Inflation from 2004 to 2011*" by ACT Research). There is also abundant evidence that grading standards are not consistent across teachers, schools, and districts (see, "*Grades and Test Scores: Accounting for Observed Differences*" by ETS; "*The Grade Game*" by Fleenor et al, "*Grading Practice: The Third Rail*" by Erickson, and "*A Repair Kit for Grading: 15 Fixes for Broken Grades*" by O'Connor). Similarly, there is plenty of evidence that the meaning of "proficiency" is not consistent across different states (see, for example, "*Proficient vs. Prepared: Disparities Between State Tests and the 2013 NAEP*", or [this fact sheet](#) detailing the gap in Colorado).

Add to this growing pile of evidence the awkward questions raised by the contrast between high teacher assigned grades in some Advanced Placement courses, but low passing rates for their students on the national AP tests. Similarly awkward questions are raised by the contradiction between relatively impressive high school graduation rates coexisting with low percentages of students who are college and career ready on the ACT, and high percentages of students who have to pay for non-credit remedial courses when they get to college (see, for example, "*High School Graduation Rates Aren't Necessarily a Reason to Celebrate*" by Peter Huidekoper, Denver Post, July 4, 2015). In light of all this evidence, accepting the argument that parents and taxpayers should solely rely on teacher assigned grades to measure student and district academic achievement performance requires an extraordinary leap of faith.

Beyond correcting for inconsistent grading standards over time and across teachers, schools, and districts, research also shows that standardized tests provide valuable predictive information. In "*The Forgotten Middle*" the ACT organization found that "the level of academic achievement that students attain by eighth grade has a larger impact on college and career readiness by the time they graduate than anything that happens academically in high school." In "*Shining a Light on College Remediation in Colorado*", CDE concluded "if students are not proficient on state assessments by sixth grade, they are likely to require remediation in their first year of college." Finally, in "*Catching Up to College and Career Readiness*", the ACT organization shows how incredibly difficult it is for students to catch up from significant (one standard deviation) proficiency deficits by the time they graduate, even when those deficits are identified as early as fourth grade.

Finally, if we solely relied on teacher grades to assess student achievement, would we still see (and take actions to close) the large gaps between different student groups (e.g. Hispanic and non-Hispanic) that have been highlighted by the use of standardized tests? I doubt it.

On to the next argument that is typically offered by those people who don't think Jeffco has a student achievement problem: "But look at all the awards that Jeffco schools have won!"

My response is that we cannot blindly accept these awards as a valuable measure of district performance unless and until we closely examine the criteria upon which they are based. For example, Colorado's John Irwin school awards are based on the percent of students at a school that are proficient or advanced on the TCAP in reading, writing, math, and science. One issue with an absolute metric like TCAP or CMAS proficiency is that it reflects not only the value added to student achievement by a school and its teachers, but also its students' socio-economic circumstances. It should therefore come as no surprise that Jeffco's John Irwin Award winning schools are all located in affluent areas. To hold up these John Irwin Award winners as evidence that Jeffco doesn't have a student achievement problem runs the risk of committing the error that was so colorfully described by Barry Switzer, Oklahoma's legendary football coach: "Some people are born on third base and go through life thinking they hit a triple."

Or consider the US News and World Report ranking of the “best high schools in America.” One of their three main criteria is the percent of students at a school who pass AP or IB exams, which is affected by both students’ socioeconomic status and by the effectiveness of their previous elementary and middle school education (see, for example, “*It’s a K-12 Issue: Increasing Student Participation and Success in AP and Other Advanced Courses*” by Dougherty et al). So again, US News seems to be rewarding parental demographics as much as school value added. To be sure, not all school awards suffer from the problems I’ve just noted. For example, earlier this year, I published an article on the best schools in Jeffco that focused strictly on school value added, as measured by student achievement growth, regardless of those students’ starting point when they walked in the door. My metric didn’t reward favorable parental demographics, and produced some surprising results (see, “[What Are the Best Schools in Jeffco?](#)” Denver Post, January 22, 2015). In general, however, I’ve found that the rating criteria that underlie too many school awards are highly questionable, and usually confuse favorable socioeconomic circumstances with the value that schools and teachers add to student achievement results.

The last argument I sometimes hear is that these discussions about K-12 student achievement results really don’t matter to our children’s future earnings. My response is that the evidence suggests just the opposite conclusion. We know that students with low TCAP and ACT scores are more likely to have to pay for non-credit remedial courses if they go to college. We also know that these students are less likely to obtain a college degree within six years of starting higher education. Nobody wants to see their child drop out of college loaded up with debt and lacking a degree. Finally, newly published research has found that Jeffco’s failure to successfully address its academic achievement problems has likely had a significant negative impact on our children’s economic future.

In “[The Impacts of Neighborhoods on Intergenerational Mobility: Childhood Exposure Effects and County-Level Estimates](#)”, Chetty and Hendren (two professors from Harvard and the National Bureau of Economic Research) analyze the impact on income at age 26 of a child’s county of residence from birth to age 20. Their data set included children born between 1980 and 1991 (i.e., those who graduated from high

school between 1998 and 2009). The authors further segment their findings into the impact on children whose parents were at the 25th percentile of family income (i.e., relatively poor) and the 75th percentile (i.e., relatively affluent). Since about 40 percent of Jeffco families are at or above the 75th family income percentile (based on 2013 Census data), I will focus on those results here.

Chetty and Hendren's research finds that living in Jeffco from birth to age 18 results in a likely negative impact on an affluent child's future income (at age 26) that is so large that it places Jeffco in the bottom 5% of all counties nationally for children from similar families (the authors extended analysis reaches the same conclusion for children from families in the top 1% of incomes). For example, compared to a child who grows up in an affluent family in Fairfax County, Virginia, a child raised in Jeffco is likely to have an income at age 26 that is 25% lower (because the Jeffco child is likely to be 10% under the mean for 26 year olds who grew up in affluent families, while the Fairfax child is likely to be 15% above it). You can find similarly negative results by comparing Jeffco to large affluent suburban counties in other major cities, including, for example, Dupage County, IL (Chicago), Allegheny County, PA (Pittsburgh), or Norfolk County, MA (Boston). Here is what the *New York Times* special section on the Chetty and Hendron research had to say about these findings: "Jefferson County is extremely bad for children in rich families. It is among the worst counties in the U.S."

In their analysis of possible causes of these results, the Chetty and Hendren find that two factors have had the strongest impact on economic outcomes for children from affluent families: their county's level of social capital (e.g., as described in Robert Putnam's book, "*Bowling Alone*"), and the quality of their county's schools. [The data](#) show that Jeffco's level of social capital has remained relatively unchanged between 1990 and 2005, ranking in the middle of U.S. counties. That leaves our schools as the most likely driver of Jeffco's deeply painful results.

In sum, my review of the evidence has led me to conclude that K-12 student achievement results are critical to our children's future, that for a long time Jeffco's student achievement results have been unacceptable, that substantial changes are necessary to dramatically improve our district's performance, and that we must be willing to tolerate a higher level of conflict while those long-overdue changes are

implemented. For me, that's what it really means to be good stewards of the billions in taxpayer dollars we spend on our schools, to "support Jeffco kids" and to "stand up for all students."

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