Are Alternative Growth Goals Warranted for *Colorado's* Alternative Education Schools and Students?

Jody L. Ernst, Ph.D.
Director of Research & Evaluation
Colorado League of Charter Schools

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focus on achievement

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The last few years has seen a tidal change in the way that schools, districts and states are judged for their effectiveness in educating our nation's youth. In 2005, the US Department of Education invited state education departments to submit proposals for the use of growth measures as part of the states' report on Adequate Yearly Progress. To date, 12 states have federally approved growth models as part of their federal and/or state accountability systems, and nine other states use some type of growth measure in their accountability models as well.

One of the reasons for incorporating growth, in addition to status measures (i.e., proficiency models), in statewide accountability systems is to better assess the influence that a school has on its students' educational outcomes. The argument being that status alone provides but a snapshot of the particular students that are present on test day. Status measures do not account for a student's prior test score history and tell us nothing about how far the student has come in a year's time. Longitudinal growth measures, on the other hand, can provide us with such historical information. Therefore, they can help us make some judgments about the effectiveness of a school[1].

The state of Colorado has adopted the student growth percentile (Betebenner, 2008) for use in assessing student longitudinal growth, and has deemed growth the "cornerstone of accountability" for all of Colorado's schools and districts.

The growth percentile method assigns each student with a percentile rank (between 1 and 99) based on all similar students in the state. Student similarity is based on grade and prior scale score history on the Colorado State Assessment Program (CSAP), in mathematics, reading and writing. "Typical" growth is based on the state median growth percentile, which currently stands at the 50th percentile in all subjects and all grade levels.

The growth percentile methodology is powerful in its ability to compare all students only to others that look like them, from an academic standpoint. This quality of the methodology makes it ideal for looking at the growth of traditionally underperforming student populations. In most cases, such as ethnic and socio-economic groups, differences found between groups represent a gap in growth that is seen as unacceptable.

In another population of students, where belonging to an ethnic minority group and being low-income might be corollary but is not requisite, this difference may reflect a student's capacity to succeed in the traditional public education system. In Colorado, these students have dropped out of the system and/or are living in situations that render education trivial in their eyes.

A small portion of schools in Colorado (44 in 2008) cater specifically to such a population. Schools that serve populations of students that are composed of at least 95 percent of students considered to be high-risk youth, qualify for the alternative education campus (AEC) designation. This designation currently exempts these schools from being rated, based on CSAP test performance.

District accreditation, however, still relies on the district-wide percentage of students to meet proficiency and to obtain satisfactory levels of growth. Alternative campuses do not generally consist of large numbers of students at or above proficiency, as many students re-enter the system over-age and under-credited and multiple grade levels behind in mathematics and/or reading. To date it seems as though many of these schools also produce median growth percentiles in the low range (i.e., below the 35th percentile).

Districts, therefore, are apt to apply pressure on the designated AECs in their boundaries to produce better performance and are less likely to allow multiple schools of this type to reside within their district.

1 Depending on the model used, see Ernst & Wenning, 2009 for examples.

2 The definition of Alternative Education Campuses can be found in Col. Rev. Stat. § 22-7-604.5.

3 The definition of high-risk student can be found in Col. Rev. Stat. § 22-7-604.5.

The focus of this report is to answer whether it is reasonable to hold AECs to the same definition of success as traditional education campuses (TECs). In particular, we focus on whether "typical" growth among students attending Colorado's designated AECs is the same as "typical" growth for same grade students attending TECs.

During the 2007-08 academic year, 10,748 students (or 1.3 percent of all enrolled students) in Colorado were enrolled in one of the 54 AECs[2]. Of these, 6,823 students (63.5 percent of 2008 AEC students) attended schools that qualify for the designation for serving at least 95 percent high-risk youth[3] (High-Risk AECs), 543 (5 percent) attended schools that qualify for the designation for serving at least 95 percent students on an individual education plan (IEP AECs), and 3,382 (31.5 percent) attended schools that qualify due to providing part-time educations and vocational training opportunities (Part-Time AECs).

2008 was the first year that a significant amount of students attended Part-Time AECs; therefore, only students attending either High-Risk or IEP AECs were included in the analyses presented here. These two school types were separated because of the difference in their student populations. Although the results are presented for both groups, the focus of this report is primarily on the outcomes of the High-Risk AEC student.

Masked student identifiers, school identifiers, grade levels, and CSAP scale score data, for 2005 through 2008, was obtained from the Colorado Department of Education. Student growth percentiles were calculated for all students, consistent with the Colorado method of estimating student growth. However, a few adjustments were made to the calculation methodology.

In the Colorado Growth Model, students that repeat a grade are not included in the estimation of growth percentiles for students in the state. Due to the limited number of students attending AECs and the, relatively, high number of AEC students to repeat a grade (see table 1) we allowed grade repeaters to remain in the percentile estimation calculation for the purposes of this report.

Table 1. Percent of Students (with CSAP Data) that Repeated a Grade in 2008 within Colorado, and a Comparison of the Percentage of Overall Student Populations that are Grade Repeaters for AEC and Traditional Schools

GRADE REPEATED IN 2008	TOTAL PERCENTAGE (AND COUNT) OF GRADE REPEATERS ATTENDING CO PUBLIC SCHOOLS IN EACH GRADE LEVEL	PERCENTAGE (AND COUNT) OF AEC STUDENTS THAT ARE GRADE REPEATERS	PERCENTAGE (AND COUNT) OF TRADITIONAL SCHOOL STUDENTS THAT ARE GRADE REPEATERS
7TH	0.5% (269)	5.5% (19)	0.5% (205)
8TH	0.4% (211)	5% (27)	0.3% (184)
9TH	2.2% (1,345)	24% (333)	1.7% (1,012)
10TH	1.2% (686)	35% (240)	0.8% (446)

In the middle school grades (grades 7 and 8), fewer than one percent of students repeated a grade in 2008; however, among the total 7th and 8th grade student population that attended an AEC, grade repeaters comprised around 5 percent of the students—while grade repeaters in traditional public schools comprised only 0.5 and 0.3 percent of all students attending 7th and 8th grade, respectively. This pattern is consistent going back at least three years .

For grades 9 and 10, there was a marked increase in the percentage of grade repeaters in the state, with a pronounced increase from half a percent or less to 2.2 and 1.2 percent of all Colorado 9th and 10th graders, respectively. Notice too, the marked increase in the percentage of AEC students that repeated either 9th (24 percent) or 10th (35 percent) grade in 2008, compared to the percentage of students attending traditional education high schools (less than two percent for 9th graders and less than one percent for 10th graders). This trend, too, was consistent across the three years investigated.

Including grade repeaters was also necessary to increase the number of alternative students included in this analysis, because a large proportion of AEC students do not stay enrolled for a full academic year—greatly reducing the number of AEC students for which we have test score data. For example, while 10,748 7th to 10th grade students were enrolled in an AEC on October 1, 2007; valid CSAP scale scores (tested in March of 2008) were only available for 3,698 AEC students.

Median Growth Percentiles by School Type

The following analysis provides median growth percentiles for groups of students enrolled in traditional education campuses, High-Risk AECs, or IEP AECs. The objective of this analysis was to determine whether 'typical" growth differs for each of these groups of students.

Information on typical rates of growth can help schools to better assess goal setting for the student population that they serve, and may help policy makers better assess realistic targets for schools serving high-risk and special education students.

MATHEMATICS

Figures 1-3 show the median growth percentiles of these three groups, in mathematics, for the 2005-06 (Fig. 1), 2006-07 (Fig. 2), and 2007-08 (Fig. 3) school years.

Typical growth, in mathematics, for traditional education students was consistent with Colorado's definition of typical growth (i.e., 50th percentile) across all three years and all four grade levels. Both groups of AEC students (High-Risk and IEP), however, displayed lower growth rates. The size of the difference appears to differ by grade level and AEC type.

For students attending High-Risk AECs, median mathematics growth seemed to follow a somewhat consistent pattern within each grade level. On average, the median growth percentiles in mathematics fell within a 10 point range across the three years of data. For example, median mathematics growth for 7th grade High-Risk AEC students ranged from 20th percentile to 27th percentile and median growth for 8th grade High-Risk AEC students ranged from 25th percentile to 35th percentile. In addition, the median growth percentiles for the High-Risk AEC students consistently fell below that of traditional school students. These differences appear to be the largest for 7th grade students and tend to get smaller as grade levels increase.

Median mathematics growth among students attending IEP AECs vary more within each grade level, across the three years, averaging a 13 point difference. And while the 2006 and 2007 grade level patterns are very similar, the 2008 median growth pattern across grades is very different. In addition, while 10th graders attending IEP AECs appear to be growing at a similar, albeit slower rate as traditional 10th graders in 2006 and 2007; this was not found to be the case in 2008.

In sum, median mathematics growth among 7th to 10th grade students attending IEP AECs seems less "predictable" than median growth among 7th to 10th grade students attending High-Risk AECs or traditional schools.

FIGURE 1. 2006 MEDIAN SGP, MATHEMATICS, BY SCHOOL TYPE AND GRADE

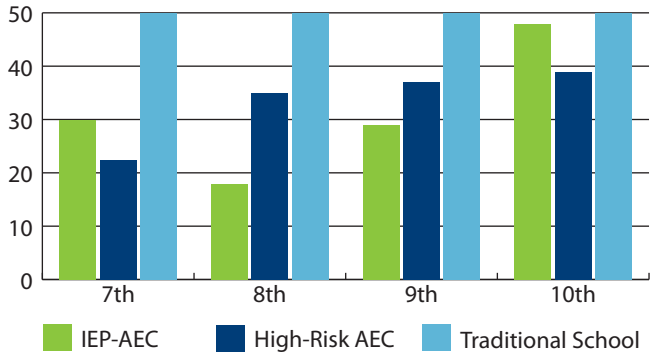


FIGURE 2. 2007 MEDIAN SGP, MATHEMATICS, BY SCHOOL TYPE AND GRADE

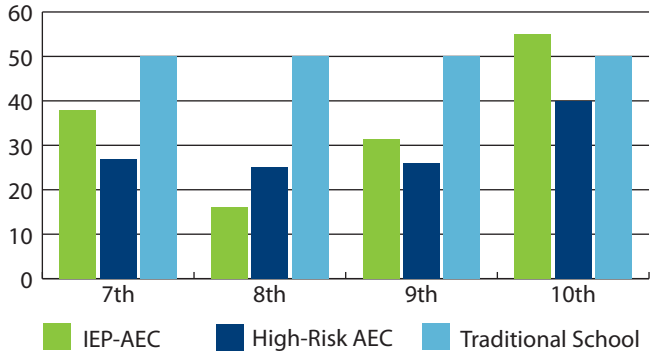
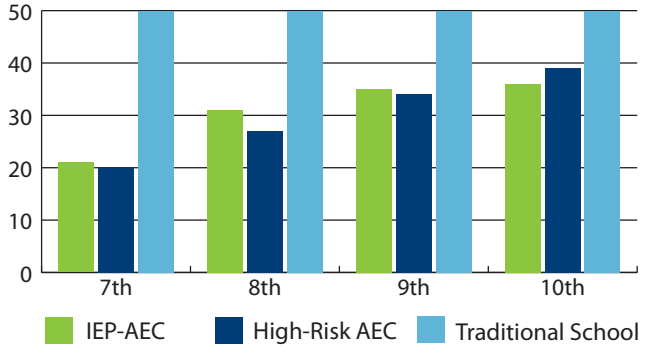


FIGURE 3. 2008 MEDIAN SGP, MATHEMATICS, BY SCHOOL TYPE AND GRADE



READING

As in the previous analysis, Figures 4-6 show the median growth rates, in reading, for students attending traditional schools, IEP AECs and High-Risk AECs for the 2005-06 (Fig. 4), 2006-07 (Fig. 5), and 2007-08 (Fig. 6) school years.

As was the case in mathematics, students attending traditional education campuses showed median growth percentiles of 50 (in reading) for all grades, across all three years. However, students attending IEP and High-Risk AECs showed median growth percentiles well below the 50th percentile in all but one case.

Also similar to the findings on within grade median growth percentile distributions across the three years, High-Risk AEC students' median growth tended to be more similar than IEP AEC students' median growth. For example, the within grade median growth ranges over the three years averaged 10 points for High-Risk AEC students and 18 points for IEP AEC students.

Unlike the findings in mathematics when looking at change over the grade span, no consistent median growth patterns emerged, in either AEC type.

FIGURE 4. 2006 MEDIAN SGP, READING, BY SCHOOL TYPE AND GRADE

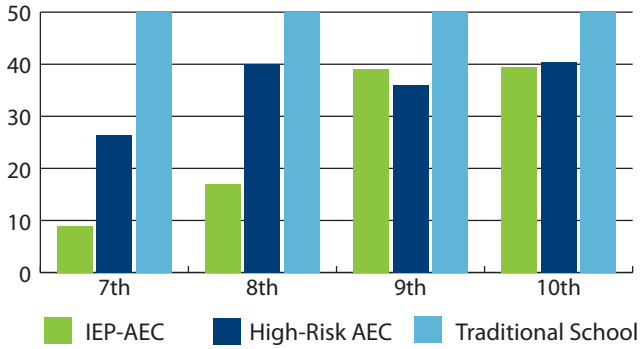


FIGURE 5. 2007 MEDIAN SGP, READING, BY SCHOOL TYPE AND GRADE

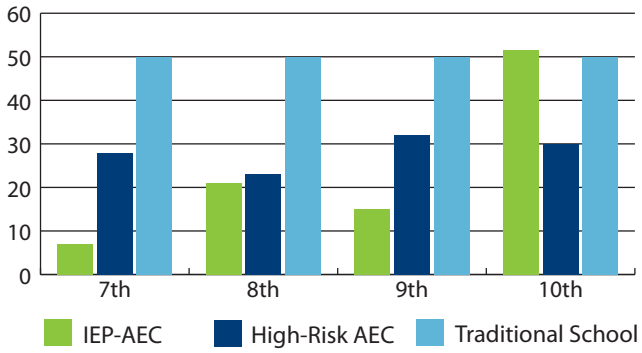
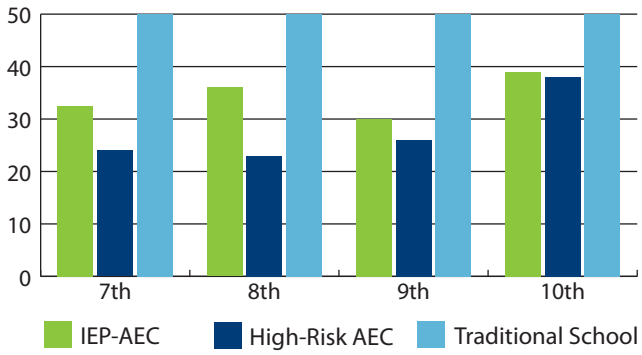


FIGURE 6. 2008 MEDIAN SGP, READING, BY SCHOOL TYPE AND GRADE



Median Growth Percentiles as a Function of Length and Timing of AEC Enrollment

The subsequent analyses addressed the following question.

Does length of enrollment in an AEC or the timing of enrollment (in terms of grade) seem related to the amount of growth we see in alternative education students? It should be noted, however, that median growth percentiles for students attending AECs for more than two years are based on a very low frequency of occurrences. Therefore, interpretation of these figures should be made with extreme caution.

MATHEMATICS

Figure 7 provides the 2008 median growth percentiles, in mathematics, for Colorado's 7th, 8th, 9th, and 10th grade students that attended a High-Risk AEC for 0, 1, 2, 3, or 4 years, between 2005 and 2008.

For High-Risk AEC students, in general, we found that older students (i.e., students in higher 2008 grade levels) tended to have higher median growth percentiles than younger students. 2008 7th grade students attending a High-Risk AEC for one year, whom, for example, displayed median growth around the 20th percentile—a figure which continues to deteriorate with longer enrollment terms. On the other hand, when looking at the performance of 2008 10th graders that attended an AEC for one year, growth percentiles are near the 40th percentile—a figure which did not change markedly for those that attended an AEC for students that have attended an AEC for 2 years.

Figure 8 provides the same analysis as in Figure 7, but for students attending IEP AECs.

The pattern that emerges in Figure 2 somewhat supports the findings from Figure 1, showing a tendency for older students to have higher median growth percentiles than younger students, but only for students attending IEP AECs for one or two years. For IEP AEC students attending an AEC for three or four years this trend seems to shift. Again, this pattern should be considered with caution due to the limited number of AEC students with three or four years of test data.

For the IEP AEC students there also appears to be a tendency for median growth to be higher for students that attended an AEC for two years, compared to those that attended for one year.

FIGURE 7. MATHEMATICS MSGP BY GRADE AND NUMBER OF YEARS ATTENDED A "HIGH-RISK" AEC

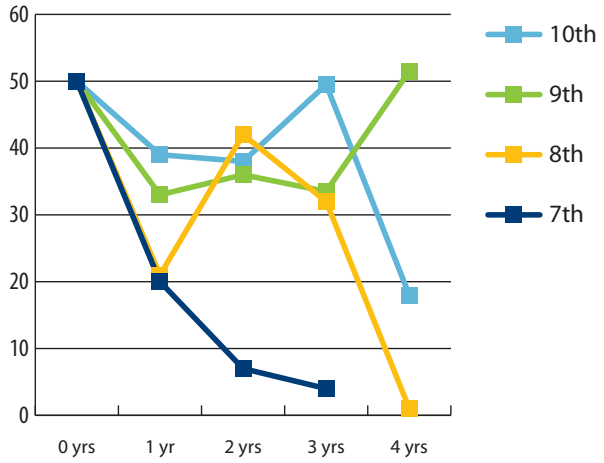
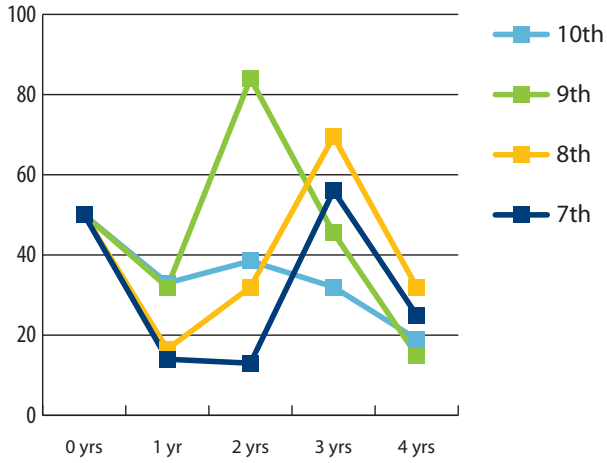


FIGURE 8. MATHEMATICS MSGP BY GRADE AND NUMBER OF YEARS ATTENDED A "IEP" AEC



READING

The median growth percentile results for reading, as a function of length of AEC enrollment, do not produce any recognizable patterns.

The only clear pattern found for High-Risk AEC students (Figure 9), in reading, was the one showing lower median growth percentiles between students that did not attend an AEC at any time between 2005 and 2008 and those that attended an AEC for one of the four years. While High-Risk AEC students tended to grow more when in enrolled for two years, as opposed to one, this was only clearly the case for students that were in 7th grade in 2008.

Unfortunately, no median growth patterns whatsoever emerged among the students attending IEP AECs (Figure 10), in reading. Tenth grade median growth for students that attended an AEC in 2008, appears to have been slightly better than the 10th grade students that attended traditional education campuses for all four years. However, the other three grade ranges (7th, 8th, and 9th) showed lower growth percentiles when they had attended an IEP AEC for one year, compared to their same grade counterparts that attended traditional education campuses.

FIGURE 9. READING MSGP BY GRADE AND NUMBER OF YEARS ATTENDED A "HIGH-RISK" AEC

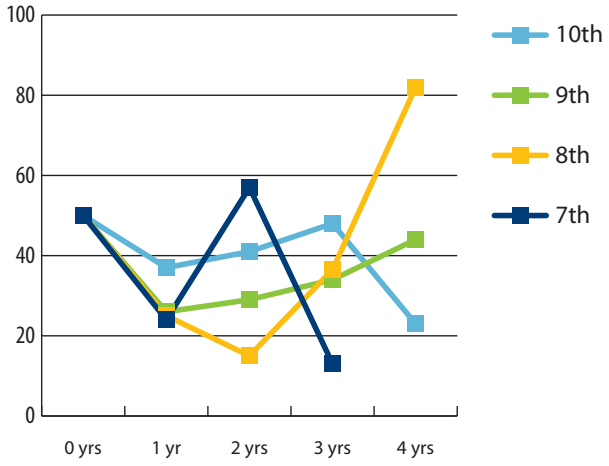
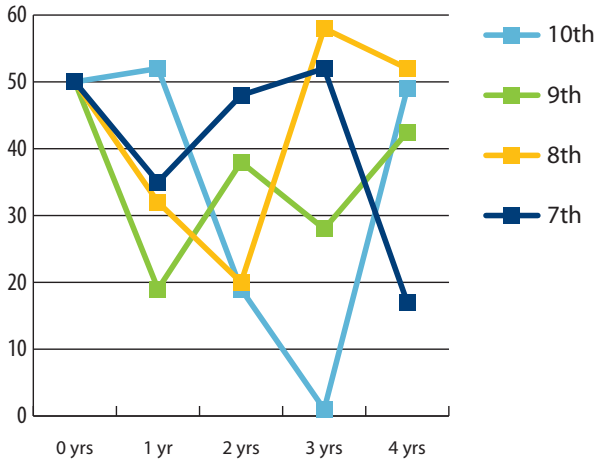


FIGURE 10. READING MSGP BY GRADE AND NUMBER OF YEARS ATTENDED A "IEP" AEC



Conclusions

In general, the majority of 7th through 10th grade students that attended Colorado's designated AECs showed lower median growth percentiles in mathematics and reading than their traditional education counterparts, when they attended an AEC for one of the four years investigated. This result was consistent over three years, 2005-06, 2006-07, and 2007-08, and was true of both the alternative schools serving 95% high-risk students and alternative schools serving 95% students on IEPs.

While students attending High-Risk AECs tended to growth at similar rates within grade levels, this was not found to be as often the case for IEP AEC students. In other words, it appears that IEP AEC students may vary in their academic growth to a larger extent than High-Risk AEC student do.

There was also a tendency for AEC students in higher grade levels to produce higher median growth percentiles in mathematics and reading, especially among students High-Risk AECs. This finding is contrary to what was found in a similar analysis in the state of Arizona (Ernst & Betebenner, 2009); where younger students showed higher median growth and benefited more from prolonged AEC enrollment. However, the stipulations for becoming a designated alternative campus are much stricter in Colorado. Therefore, results may not be directly comparable between the two states.

When assessing whether length of AEC enrollment was associated with median growth percentiles in mathematics and reading, no concrete patterns emerged. There was some tendency for older students to display higher growth percentiles across the board, but this finding was more prevalent for High-Risk AEC students. However, this too is the opposite of what was found in Arizona.

Regardless of the patterns observed within or between grade levels, it is clear that Colorado's AEC students, as a whole, do not display the same "typical" growth rates as students attending the same grade levels in traditional education campuses. In light of this evidence, policy makers may need to consider whether it would be appropriate to have different growth goals for schools that serve both 95 percent high-risk students and 95 percent students on IEPs.

REFERENCES

Betebenner, D. (2008). Toward a Normative Understanding of Student Growth. In K. E. Ryan & L. A. Shepard (Eds.), The failure of test-based educational accountability (pp. 155-170). New York: Taylor & Francis.

Ernst, J. L. & Wenning, R. J. (2009). Leave No Charter Behind: An Authorizer's Guide to the Use of Growth Data. Issue Brief. Chicago, IL: National Association of Charter School Authorizers.

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Colorado League of Charter Schools
725 S. Broadway, Suite 7, Denver CO 80209

www.coloradoleague.org