

Progress of Innovation Schools in DPS: Year Two of an Evaluation Study



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Denver

The Evaluation Center

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Denver Classroom Teachers Association

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November 2012

Suggested Citation:

Connors, S. C., Challender, A., Paterson, W., and Walters, B. (2012). *Progress of Innovation Schools in DPS: Year two of an evaluation study*. University of Colorado Denver: The Evaluation Center, School of Education and Human Development.

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Executive Summary

Beginning in 2010, The Evaluation Center at the University of Colorado Denver was contracted by Denver Public Schools (DPS), Colorado Education Association (CEA), A+ Denver, and Denver Classroom Teachers Association (DCTA) to provide external evaluation services to study the Innovation schools in Denver.

The report of the first year's study described the initial implementation of eight schools granted Innovation status in DPS between February 2008 and May 2010. This follow-up report examines how Innovation status has affected the school climate, workforce composition, and student outcomes at the initial eight schools and eleven additional schools granted Innovation status between May and August 2011. The evaluation design was structured to examine these factors based on a review of school reform literature and a theory of change developed by the stakeholders. Results included these findings:

School Climate and Culture

Innovation school respondents scored higher on the Climate Survey than those in Comparison schools on all measures. The largest differences were on the scales related to Decision Making and Ownership, while the groups were most similar on the Collaborative Environment scale.

Further analyses indicated those respondents in Cohort One (the first eight Innovation schools) scored higher on the Climate Survey than respondents from Cohort Two (the next group of eleven schools). Both groups from Innovation schools scored higher than those from Comparison schools; differences were statistically significant. These results suggest that it may take time for Innovation status to affect a school's climate and culture. However, it may also reflect fundamental differences among the schools.

Workforce Profile

Innovation schools as a group were found to have teachers with less experience than Comparison schools. However, schools having Innovation status for a longer period of time had higher average teaching experience than schools more recently attaining Innovation status. Trends showed experience levels declining for all groups between 2007-08 and 2010-11 and increasing in 2011-12. The exception is a decrease in average teaching experience for Cohort Two schools for 2011-12, the first year of Innovation status. A contributing factor to this decrease may be that six Cohort Two schools were new.

In 2011-12, more than two-thirds (68%) of principals and assistant principals at Innovation schools were reported to be in their first or second year as school leaders in DPS. This pattern is evident to a slightly lesser extent in Comparison schools where 56% of principals were in their first or second year. Over time, Innovation and Comparison schools both show declining levels of principal experience. Overall in DPS, 37% of principals were new in 2011-12 and 34% in 2010-11, which may indicate other factors beyond Innovation status are impacting the high turnover rates for principals in this district.

Teachers in Innovation and Comparison schools were found to have similar education level profiles based on the highest degree earned. While Comparison schools had slightly more teachers with Masters degrees (51%) than Cohorts one and two of Innovation school groups (48% and 45%, respectively), these differences were not statistically significant.

Teacher turnover was higher in Innovation schools in relation to Comparison schools and DPS as a whole, although trends over time appeared consistent across the groups. The higher rates of turnover may be contributing to the decreasing experience levels because newly hired teachers are more likely to be teachers new to the profession, especially since Innovation schools are not required to accept in-district transfers of more experienced teachers. Principal experience levels are also likely affected by the turnover rates among those serving in leadership roles.

Student Achievement

The 2012 Transitional Colorado Assessment Program (TCAP) results showed Innovation schools typically demonstrated higher growth than the state median but lower levels of proficiency than statewide averages in all subjects with a few exceptions. When TCAP results were compared to DPS as a whole, Cohort One Innovation schools were below the district's level of proficiency; however, their proficiency levels were higher than those in Comparison schools.

Over time, student proficiency levels have shown gradual improvement in Innovation schools. However, the clear trajectory of improvement in Innovation schools is mirrored in district-wide improvement trends and was evident in most schools before they attained Innovation status so, therefore, cannot be solely attributed to this factor. For Innovation high schools, ACT composite scores showed little variation over time while Comparison high schools showed a small increase in ACT scores.

Conclusions and Questions for Further Exploration

In this year's study, teachers at schools with Innovation status for a longer period of time reported their schools were characterized by the attributes of the "empowerment equation" identified by DPS stakeholders. While this finding is hopeful, it is unclear if these attributes were already present in the culture of the schools before seeking Innovation status or if Innovation status enhanced their work in any way.

A complication to measuring the effectiveness of Innovation schools is the high turnover rates for both teachers and principals. Lack of continuity in both leadership and the workforce at Innovation schools may be interfering with progress that might otherwise be expected. What factors (including Innovation status) are influencing these high turnover rates? How can DPS support a more stable workforce in Innovation schools?

Because rates of student achievement were improving in DPS overall during this time period, many reform strategies may be effectively improving student outcomes; Innovation status may be just one of many effective options. However, it may also be merely too soon to see differences between this strategy and competing initiatives for school reform. Examination of achievement trends over a longer

period of time is warranted for Innovation schools in comparison to those implementing other interventions intended to raise achievement levels.

If the Innovation school theory of change is accurate, improved student outcomes should be evident in schools where autonomy in decision-making has been exercised for that purpose. This raises additional questions: Have Innovation schools actually implemented changes that would require Innovation status (as principals reported were planned in interviews in 2011)? Additionally, if changes have been made, how have they been directly related to improving professional practice (as opposed to more organizational re-structuring around budgets, schedules, and hiring practices)? These questions must be answered before an expectation of improved student outcomes can be examined in a meaningful way and distinguished from the expectation that student outcomes improve in all schools in DPS.

Introduction

Beginning in 2010, The Evaluation Center in the School of Education and Human Development, at the University of Colorado Denver, was contracted through a collaborative effort by Denver Public Schools (DPS), Colorado Education Association (CEA), A+ Denver, and Denver Classroom Teachers Association (DCTA) to provide external evaluation services to study the Innovation schools in Denver.

The first year of the Innovation schools study (2010-11) focused on answering the questions “What is happening in Innovation Schools? How is this different than what occurred prior to Innovation status?” These questions were examined for the cohort of the initial eight schools granted Innovation school status in DPS between February 2008 and May 2010.¹ (Please see a summary of the methods and results from the first year of this study in Appendix A.)

The purpose of the second year of the study (2011-12) is to build on what was learned in year one, to better understand the changes that are occurring in Innovation schools, and to explore how these changes are related to workforce and student outcomes. The population of the schools has been expanded to include those schools granted Innovation status between May and August 2011. Schools included in this study are listed in Exhibit 1 below².

Exhibit 1: Innovation Schools in this Study

School	Date Innovation Status
Bruce Randolph MS and HS	February 2008
Montclair School of Academics and Enrichment	March 2009
Manual High School	March 2009
Cole Arts and Sciences Academy	August 2009
Denver Green School	April 2010
Valdez Innovation School	June 2010
Whittier K-8 School	September 2010
Martin Luther King Jr. Early College MS and HS	September 2010
Noel Community Arts School	May 2011
Denver Center for International Studies at Ford and Montbello	May 2011
Collegiate Prep Academy	June 2011
High Tech Early College	June 2011
Denver Center for 21st Century Learning at Wyman MS and HS	June 2011
Godsman Elementary	August 2011
Green Valley Elementary	August 2011
McGlone Elementary	August 2011
Summit Academy	August 2011
Swigert-McAuliffe International School	August 2011
Vista Academy MS and HS	August 2011

¹ Including Bruce Randolph School, granted Autonomous School status in February 2008

² Additional DPS schools have since been granted Innovation status but are not included in this study since it was considered too soon to expect changes to be evident; future studies may include additional Innovation schools.

Evaluation Framework

The evaluation of the Innovation schools initiative is grounded in current school reform theory. The study is framed around factors which have been determined to be important in school reform by the Consortium on Chicago School Research (Bryk, Sebring, Allensworth, Luppescu, & Easton, 2010). The framework for the evaluation is summarized in Exhibit 2.

Exhibit 2: Evaluation Framework



A basic summary of what is included in each of these components is provided below.

1. **Improve school structures** refers to changes in the way schools use time, engage in hiring, assess students, practice inclusive leadership, conduct personnel evaluations, and manage resources.
2. **Improve professional practice** includes initiatives aimed at increasing teacher and principal effectiveness such as professional development, coaching, enhanced curricula, and qualifications for teachers and school leaders.
3. **Improve school culture** refers to plans that enhance teacher, principal, and collective school efficacy beliefs; mutual trust among teachers, school administrators, parents and students; and the degree of academic emphasis within the school.
4. **Improve student learning** is the central goal and stated purpose for Innovation schools and, therefore, is the anchor of the evaluation.

This report includes analyses of teacher surveys designed to examine school climate and culture, teacher and principal data, and student achievement results, which relate to each of these components of school reform.

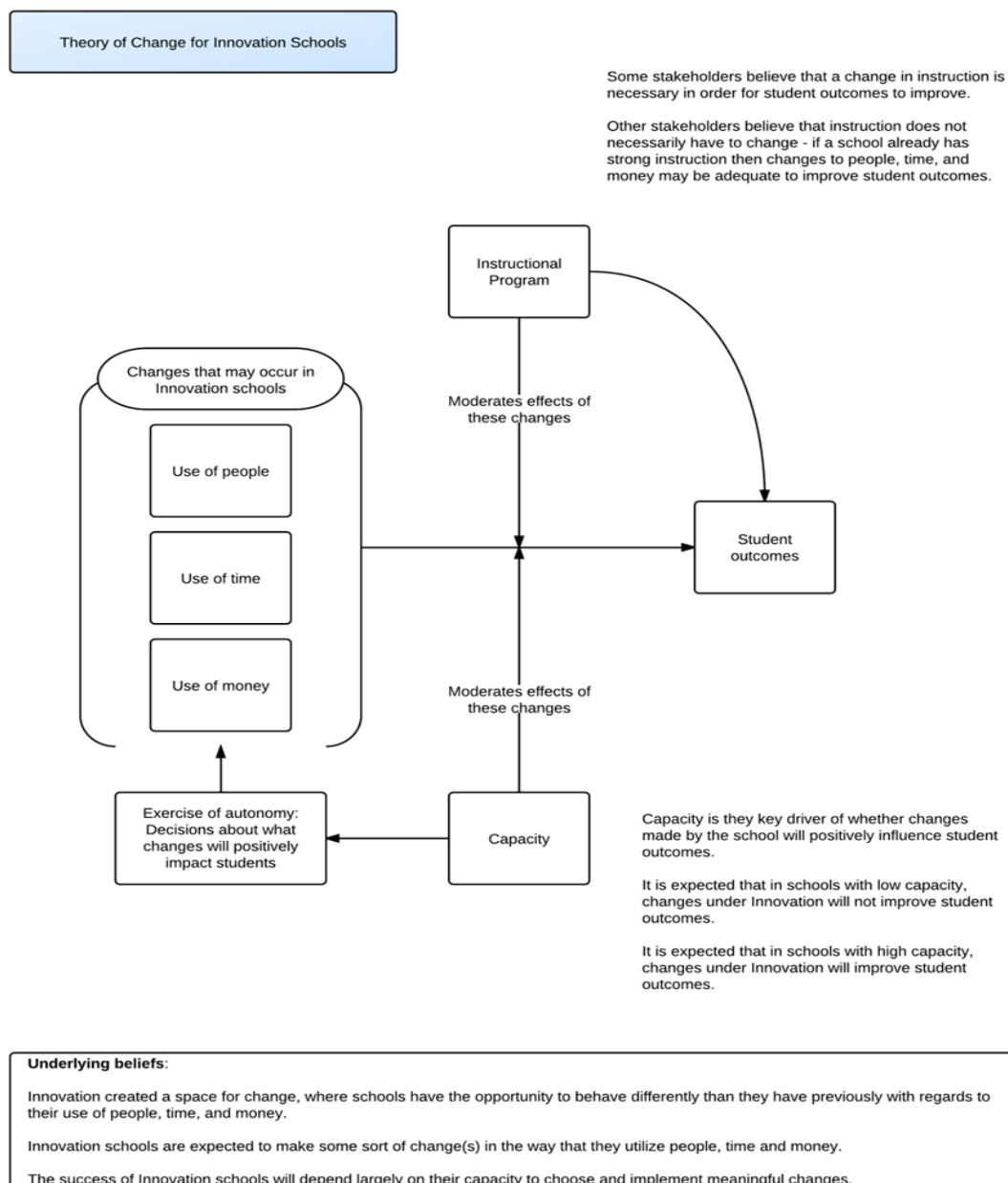
Limitations

Comparison schools were selected based on data for the initial cohort of eight Innovation schools and may not be the best matches for schools attaining Innovation status in 2011. Additional comparison schools were not selected because of budget constraints. The Colorado assessment tests were modified for 2012 to align with new state standards and, therefore, may not be comparable to results for previous years. Response rates to the survey were low and, therefore, results should be viewed cautiously since responding teachers may not represent the entire population.

Innovation Schools: Theory of Change

At the start of 2012, stakeholders from DPS, A+ Denver, CEA, and DCTA engaged in discussions with the goal of understanding what each stakeholder group expected to happen in schools granted Innovation status. Through these discussions, the partners developed general ideas around changes expected to take place in an Innovation school (e.g., in use of people, time, and money), as well as how autonomy would be experienced and exercised, and how capacity would influence this process. Based on these discussions, a general theory of change model was developed by the evaluation team and shared with the stakeholders (see Exhibit 3).

Exhibit 3: Theory of Change for Innovation Schools

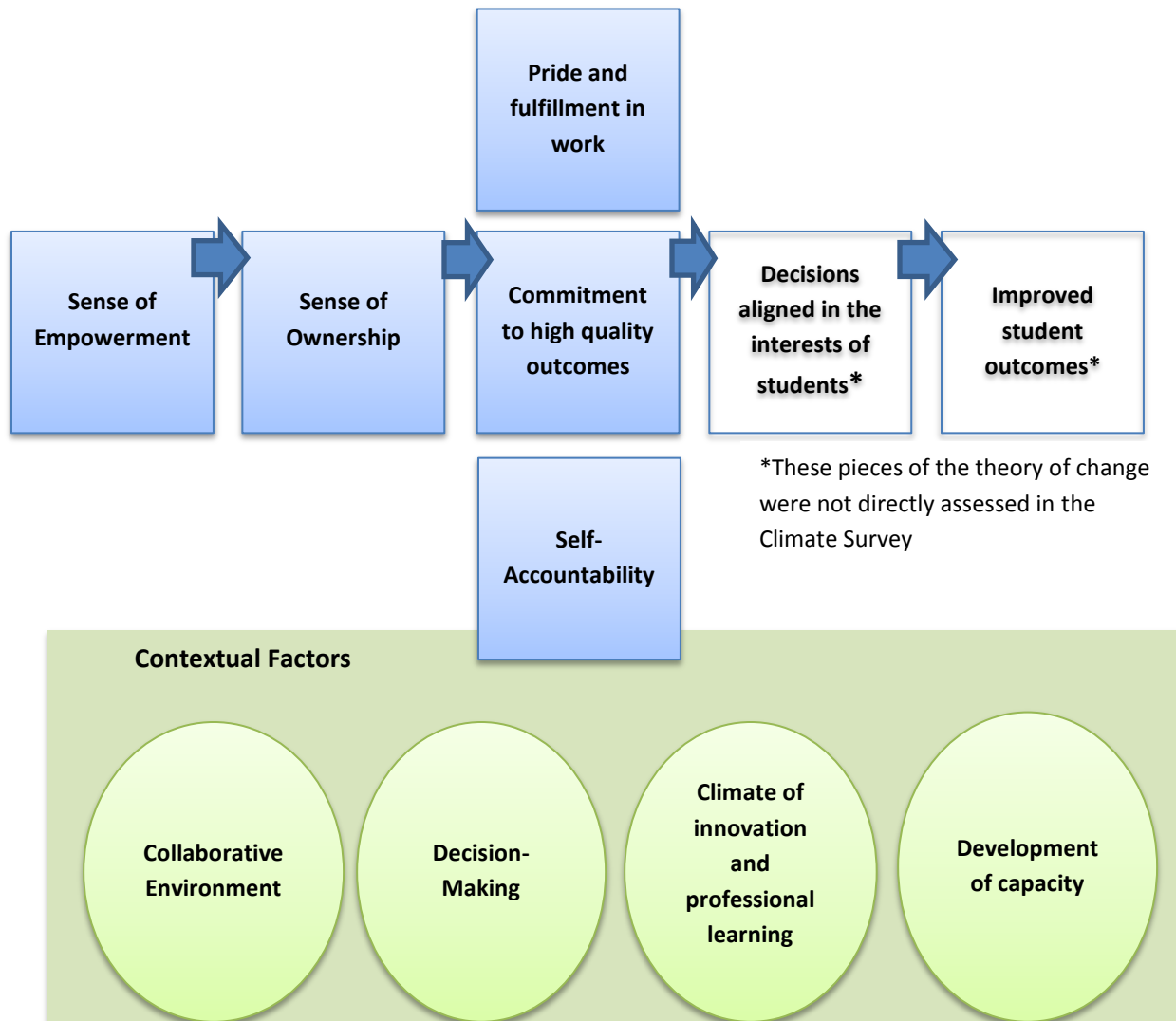


Based on this theory of change, nine constructs were operationalized to represent the beliefs of DPS stakeholders with regard to what would happen when schools were given Innovation status:

- *Climate of innovation and professional learning* – teachers are provided with opportunities to expand their own knowledge and development, and work to improve their teaching through innovative and novel solutions.
- *Collaborative environment* – teachers collaborate around instruction and curriculum. They collaborate between and within grade levels, plan together, and have common beliefs about students’ needs.
- *Decision making* – the decisions made at the school involve appropriate stakeholders, are thoughtful and explicit, and are aligned with the schools’ mission. Teachers have autonomy to make decisions that impact their students.
- *Development of capacity* – there is strong capacity related to the workforce and instructional program, which includes coordination of instructional programs so that they are coherent, PD for teachers that is meaningful and differentiated, and learning opportunities that are well aligned with the school’s plan.
- *Sense of empowerment* – the extent to which teachers have control over or are able to influence decisions at the school including those related to instruction (e.g., textbooks, curriculum, pedagogy), workforce (e.g., their own teaching assignments, new hires), and their belief that all students are competent learners.
- *Sense of ownership* – teachers feel ownership over what happens in their classroom, their school, and for all students.
- *Pride and fulfillment in work* – teachers feel like their school is a place they would send their own child, which they would recommend to others, and that they feel proud to work there.
- *Self-accountability* – teachers feel responsible for the students they teach, other students in the school, and feel a commitment to helping the whole school succeed.
- *Commitment to high quality outcomes* – there are expectations for high performance from administration to teachers, teachers to teachers, and teachers to students.

These nine constructs represent a combination of what DPS stakeholders have described as an “empowerment equation” of what happens to schools that receive Innovation status, as well as considerations raised by other stakeholders about contextual features, which may moderate the impact of Innovation on the school. The nine constructs are represented visually in Exhibit 4.

Exhibit 4: Outcomes of Innovation Status



Climate Surveys

Methods

Instrument Development

Based on what was learned from the evaluation study in 2010-11 regarding culture and climate in the Innovation Schools and taking into account the theory of change, A+, CEA, DCTA, and DPS stakeholders made the decision to explore the culture and climate of Innovation schools using a self-developed instrument (as opposed to a standardized instrument) in order to examine the most relevant elements.

Survey items were constructed around the nine constructs in the theory of change developed by stakeholders. The items were designed to explore the key constructs, which the groups had determined were related to changes theorized to occur and ultimately related to student outcomes. The total survey contained 68 questions divided into nine major content areas, as shown in Exhibit 5.

Exhibit 5: Survey Constructs and Items

Scale Title	Number of items
Climate of innovation and professional learning	8
Collaborative environment	6
Decision making	9
Development of capacity	10
Sense of empowerment*	16
Sense of ownership*	3
Pride and fulfillment in work*	6
Self-accountability*	7
Commitment to high quality outcomes*	3

Five of the scales were directly reflective of the DPS theory of change (as designated by a * in the table above). The other four scales were developed based on stakeholder discussions regarding contextual factors that would moderate the likelihood of the other elements playing out in a successful way.

Respondents

DPS provided an email list of all teachers in Innovation schools, as well as the five matched Comparison schools, as of May 2012. (See Appendix B for a description of the process used to identify Comparison schools.) All schools granted Innovation status from February 2008 to August 2011 were included in the sample (a total of 19 schools). For additional analysis, the Innovation schools were divided into two

cohorts³ to see if differences were evident for those who had been Innovation schools for a longer time. Teachers were identified by their job title, so the final list of teachers included 805 individuals. There were 229 respondents who fully completed the survey and an additional 31 who partially completed the survey, for a response rate of 32% (260 out of 805). There were 84 respondents from Comparison schools, and 176 respondents from Innovation schools. Respondents represented all five Comparison schools and 18 of the 19 Innovation schools.

Analysis

Scale validation

Items were grouped based on the category assigned during item development (i.e., face validity). Each of the nine scales had between 3 and 16 items initially. An alpha coefficient was calculated separately for each scale to determine how well the items fit together in terms of measuring a similar construct.⁴ The alpha scores for the nine scales are shown below:

Exhibit 6: Alpha values for each subscale

Scale Title	Alpha coefficient	# of items
Climate of innovation and professional learning	0.93	8
Collaborative environment	0.90	6
Decision making	0.93	9
Development of capacity	0.90	10
Sense of empowerment	0.90	15
Sense of ownership	0.78	3
Pride and fulfillment in work	0.92	6
Self-accountability	0.92	5
Commitment to high quality outcomes	0.81	3

The statistics for each item were examined to determine whether the item had an acceptable correlation with the rest of the scale and whether the alpha coefficient would improve substantially if the item were deleted. Based on these analyses, three items were removed for the purposes of analysis. (See Appendix C for items that were removed.)

³ Cohort One = 8 schools granted Innovation status from February 2008 to September 2010; Cohort Two = 11 schools granted Innovation status from May to August 2011.

⁴ Acceptable internal consistency reliability is 0.70.

Scale scores

For each of the respondents, a total score was calculated by summing the items for each of the nine scales. Respondents were excluded for analyses of a particular scale if they had not answered all the items, reducing the sample by about 24 respondents, depending on the scale.

Correlations between subscales

The theory of change suggests there are a number of different domains pertinent to improved student outcomes (e.g., sense of empowerment, pride and fulfillment). In order to ensure that the different scales were in fact measuring different concepts, scores on each subscale were correlated with one another. Correlations ranged from 0.25 to 0.76, indicating the subscales were related but not identical constructs. The correlation matrix for the nine scales is shown in Exhibit 7.⁵

Exhibit 7: Pierson Correlation Coefficients, N = 181

	Innovation/Professional Learning	Collaborative Environ	Commitment to outcome	Decision Making	Capacity	Pride and Fulfillment	Self-Accountability	Empowerment	Ownership
Innovation/Pro Learning	1.00								
Collaborative Environment	0.64	1.00							
Commitment to Outcomes	0.66	0.47	1.00						
Decision Making	0.54	0.33	0.66	1.00					
Capacity	0.59	0.50	0.68	0.52	1.00				
Pride and Fulfillment	0.44	0.25	0.58	0.70	0.50	1.00			
Self-Accountability	0.74	0.59	0.71	0.42	0.47	0.38	1.00		
Empowerment	0.51	0.26	0.55	0.76	0.42	0.55	0.39	1.00	
Ownership	0.51	0.33	0.69	0.76	0.47	0.65	0.48	0.70	1.00

Statistical comparisons

Differences between respondents from Innovation schools and Comparison schools were examined using t-tests; differences between Cohort One, Cohort Two, and Comparisons school respondents were examined using analysis of variance (ANOVA) with Tukey post-hoc analysis.

⁵ This correlation matrix relies on data for those persons who had complete sets of data on all nine scales for the analysis.

Results

Innovation school respondents scored higher than those in Comparison schools on all measures on the Climate Survey; results were statistically significant.⁶ The largest differences were on the Decision Making and Ownership scales, while the groups were most similar on the Collaborative Environment scale. Although the differences cannot be attributed to Innovation status, the schools scored higher than would be expected merely by chance. (See Appendix C for results by survey item.)

Exhibit 8: Average Climate Survey Scores, by Scale

Scale	Comparison	Innovation	Difference (sorted high to low)
Decision Making	2.24	2.88	0.64**
Ownership	2.48	3.07	0.59**
Commitment to Outcomes	2.91	3.4	0.49**
Empowerment	2.35	2.79	0.44**
Pride and Fulfillment	2.47	2.89	0.42**
Innovation and Professional Learning	2.77	3.18	0.41**
Capacity	2.28	2.65	0.37*
Self-Accountability	3.02	3.32	0.30*
Collaborative Environment	2.74	2.89	0.15

* $p < .001$, ** $p < .05$

Further analyses indicated the differences between Cohort One, Cohort Two, and Comparison schools were statistically significant.⁷ Differences were greatest between Cohort One and Comparison schools, as shown in Exhibit 9; Cohort One teachers also had higher scores than those in Cohort Two.

Exhibit 9: Average Climate Survey Scores by Scale and Cohort

Scale	Comparison	Innovation Cohort One	Innovation Cohort Two	Diff Comp & Cohort One	Diff Comp & Cohort Two	Diff Cohort One & Cohort Two
Innovation/Professional Learning	2.77	3.25	3.05	0.48**	0.28*	0.19
Collaborative Environment	2.74	2.92	2.85	0.18	0.11	0.07
Commitment to Outcomes	2.91	3.51	3.24	0.59**	0.33*	0.27*
Decision Making	2.24	3.00	2.70	0.76**	0.46**	0.30*
Capacity	2.28	2.75	2.49	0.46**	0.20	0.26*
Pride and Fulfillment	2.47	3.02	2.69	0.56**	0.22	0.33*
Self-Accountability	3.02	3.40	3.18	0.39**	0.16	0.22
Empowerment	2.35	2.88	2.63	0.53**	0.29*	0.25*
Ownership	2.48	3.20	2.89	0.73**	0.41*	0.32*

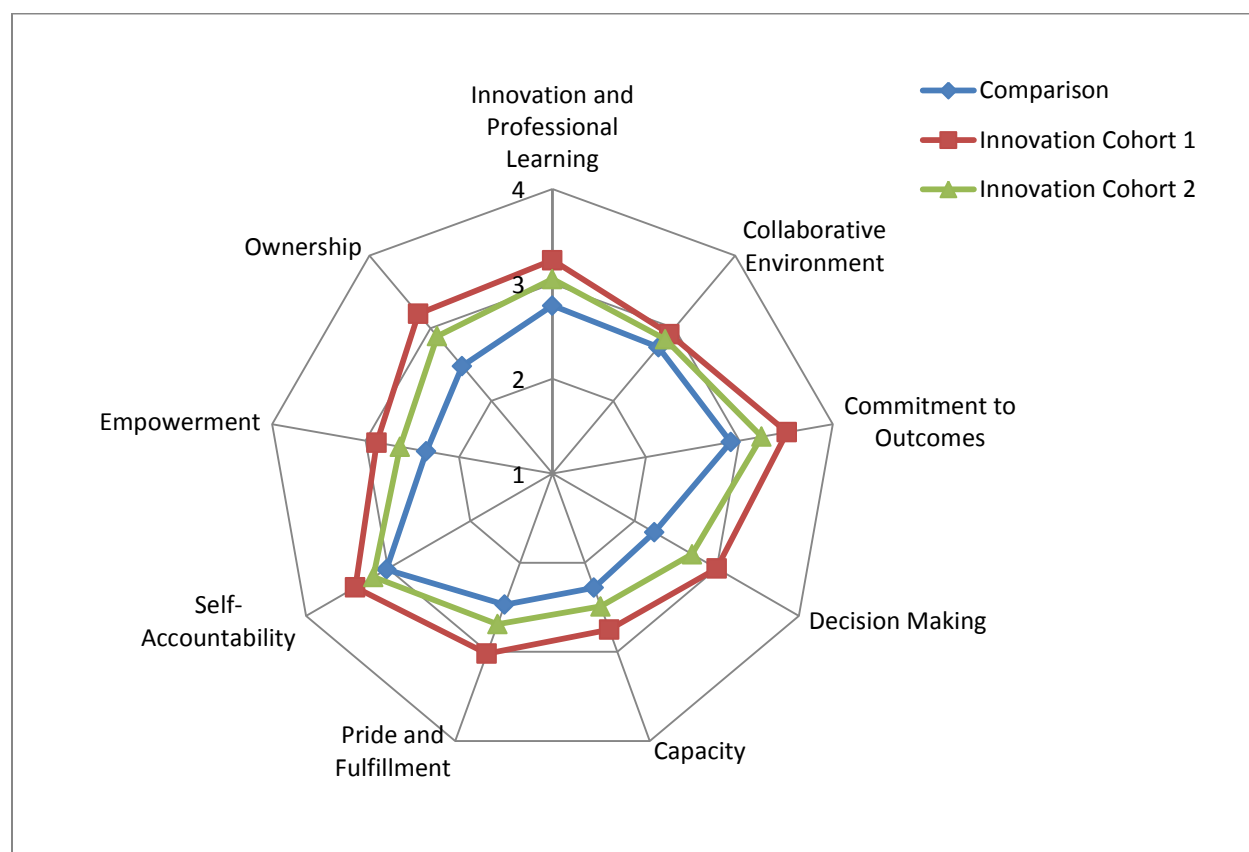
* $p < .001$, ** $p < .05$

⁶ $t(179) = 6.71$, $p < .001$, Cohen's $d = 1.07$, a large effect

⁷ $F(2) = 24.90$, $p < .001$, partial eta squared = .219, a large effect

As shown in the summary in Exhibit 10 below, Innovation schools in both cohorts had higher scores than Comparison schools. Differences were greatest for those who have been Innovation schools longer. These results suggest it may take time for Innovation status to affect a school's climate and culture. However, it may also reflect fundamental differences between the cohorts of schools.

Exhibit 10: Average Climate Survey Score by Scale and Cohort



Summary – Climate Survey Results

The goal of this survey was to explore the constructs outlined in the theory of change and to provide preliminary evidence of differences in Innovation and Comparison schools in these areas. The theory of change suggests that greater empowerment of schools (through receiving Innovation status) will lead to other positive changes in the school (including climate and behavior), which should result in improved outcomes for students.

Beyond the general expectation that Innovation schools would score higher than Comparison schools in these areas, there were no specific expectations about how large the differences would be or what absolute level should be considered 'good enough' on any of the scales. What may be most valuable will be to have ongoing conversations about the results and implications for Innovation schools. (See Appendix D for suggested questions for discussion concerning Climate Survey results.)

Workforce Profile

Because Innovation status allows schools greater autonomy and flexibility in operational decision-making such as hiring practices, changes in the workforce at these schools were examined.

Methods

The DPS Human Resources Department provided workforce data for teachers (n = 1,404) and principals⁸ (n = 95) at Innovation and Comparison schools from 2006-07 to 2011-12. Innovation schools were divided into the same two cohorts as used for the Climate Survey analyses; the same five Comparison schools were also used. Workforce analyses were designed to address three questions:

Q1: How does the level of teacher and principal experience compare in Innovation and Comparison schools?

Average total years of teaching experience were calculated for all teachers⁹ in Innovation schools by cohorts and for Comparison schools. This included their experience both in DPS and in other districts. Differences between groups were compared for 2011-12 data using Kruskal-Wallis analysis of variance.¹⁰ Trends over time were graphed. Average principal experience for those in leadership roles in 2011-12 also was examined using data for only DPS because experience outside of DPS was not reported for all individuals.

Q2: Do Innovation schools have teachers with more education than Comparison schools?

Percentages of teachers earning Bachelors, Masters, and Doctorate degrees as their highest level of education were calculated for Innovation schools by cohorts and for Comparison schools. For 2011-12 data, Chi-square analysis was conducted to examine if observed rates of educational attainment were significantly different than expected outcomes for each group.

Q2: How does being an Innovation school affect teacher turnover?

Turnover rates for Innovation schools by cohorts and for Comparison schools were calculated for the period of 2007-08 to 2011-12 using the formula used by the Colorado Department of Education (CDE).¹¹ Results for 2011-12 were compared using Chi-square analysis to examine if observed turnover rates were significantly different than expected rates for each group. Turnover percentages for DPS as a district were downloaded from CDE for further comparison¹².

⁸ Includes principals and assistant principals

⁹ Teachers with less than .5 assignments were deleted to avoid duplication.

¹⁰ Non-parametric statistical analyses were used for all workforce data analyses because samples were not normally distributed.

¹¹ The number of teachers who leave a school for any reason is divided by the number of teachers employed the prior year to calculate the turnover percentage.

¹² CDE website, http://www.cde.state.co.us/index_stats.htm

Results

Teacher Experience

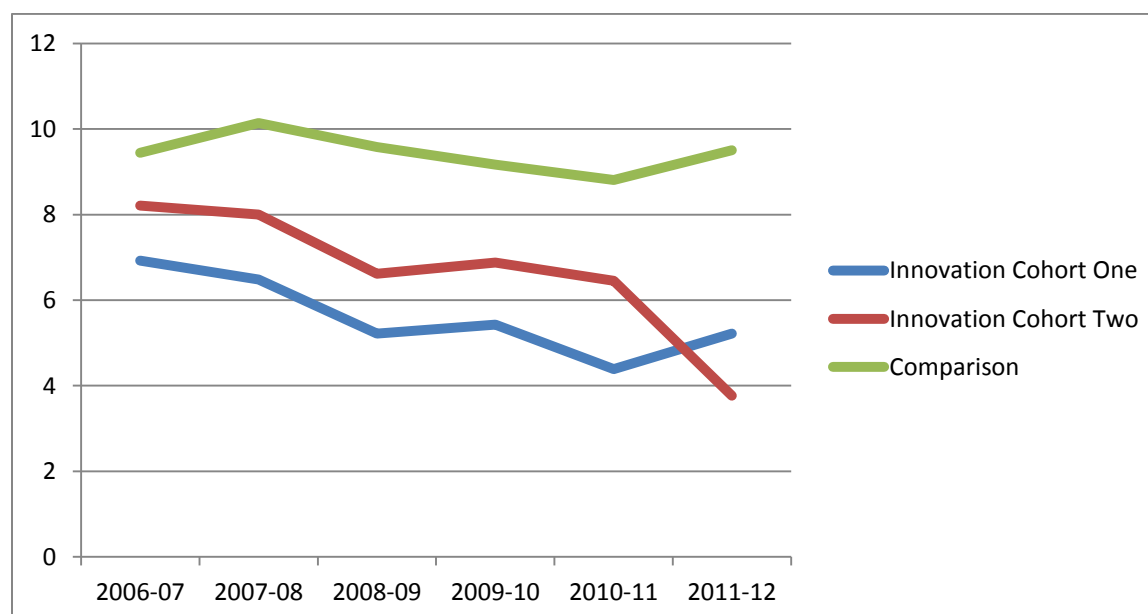
In 2011-12, teachers in Innovation schools as a group were less experienced than their counterparts in Comparison schools. When differences were examined by cohorts, schools having Innovation status for a longer period of time had higher average teaching experience than schools more recently attaining Innovation status, as shown in Exhibit 11. The differences were statistically significant.¹³

Exhibit 11: Average Teaching Experience in 2011-12

	n	Mean	Std. Dev
Innovation Cohort One	288	5.22	6.72
Innovation Cohort Two	232	3.77	5.61
Comparison	273	9.50	9.30

Over time, Innovation schools consistently had teachers with less teaching experience on average than Comparison schools, as shown in Exhibit 12. Trends show similar patterns of change in the groups with average teaching experience declining between 2007-08 and 2010-11 and increasing in the last year. The exception is a decrease in average teaching experience for Cohort Two schools for 2011-12, the first year of Innovation status. A contributing factor to this decrease may be that six Cohort Two schools were new and added to these data only in 2011-12; new schools may be more likely to hire newer teachers with less teaching experience.

Exhibit 12: Average Years of Teaching Experience over Time



¹³ Kruskal-Wallis analysis of variance results: $\chi^2(2, N = 793) = 90.59, p < .001$

Principal Experience

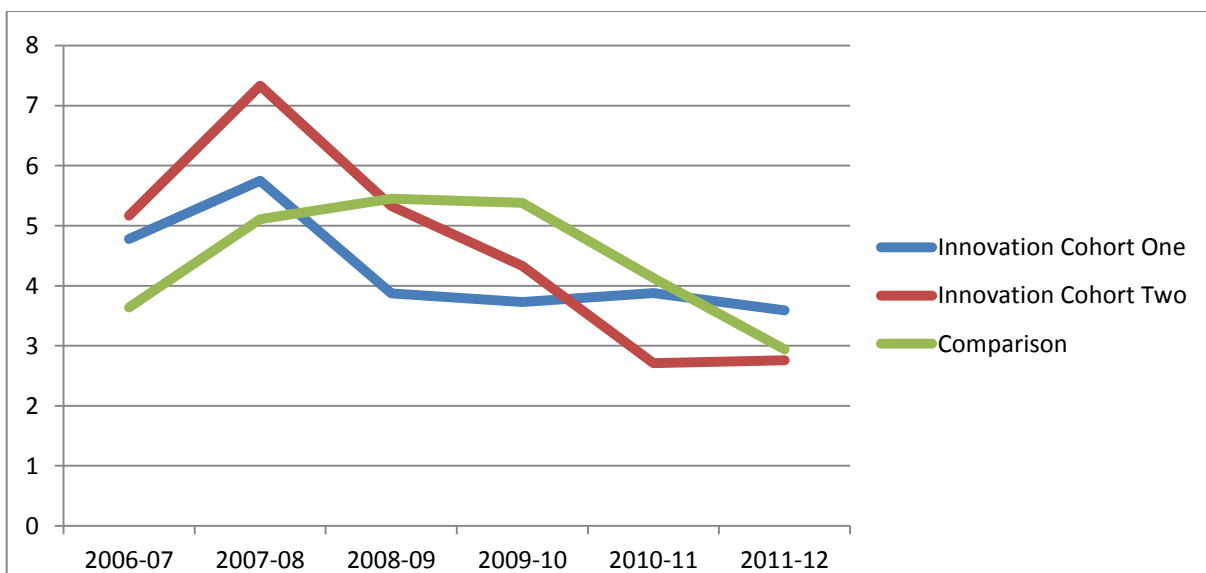
In 2011-12, more than two-thirds (68%) of principals and assistant principals at Innovation schools were reported to be in their first or second year as school leaders in DPS, as shown in Exhibit 13. This pattern is evident to a slightly lesser extent in Comparison schools where 56% of principals were in their first or second year. However, overall in DPS, 37% of principals were new in 2011-12 and 34% in 2010-11, which may indicate other factors beyond Innovation status are impacting the high turnover rates for principals (e.g., transfers within the district, promotion to other administrative positions).

Exhibit 13: Principal Experience

Years DPS Principal Experience	Innovation Cohort One	Innovation Cohort Two	Comparison	Total
1	3	11	3	17
2	7	5	6	18
3	2	0	3	5
4	1	1	1	3
5	0	0	1	1
6	0	1	0	1
7	1	1	2	4
8	1	1	0	2
9	1	0	0	1
10	1	0	0	1
12	0	1	0	1
Total	17	21	16	54

Over time, Innovation and Comparison schools both show declining levels of principal experience, as shown in Exhibit 14.

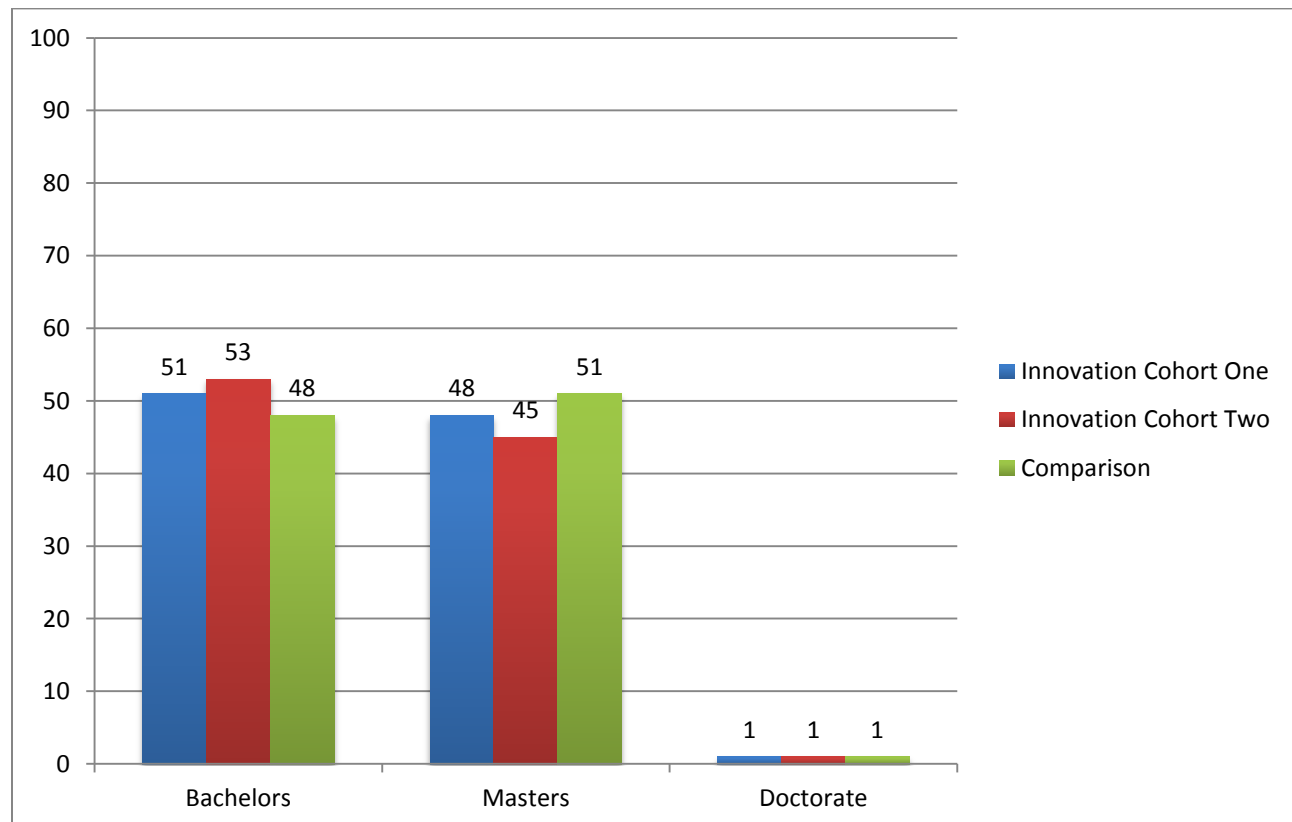
Exhibit 14: Average Years of Administrator Experience over Time



Teacher Education Levels

Teachers in Innovation and Comparison schools were found to have similar education level profiles, as shown in Exhibit 15, which shows the highest degree earned for those teachers in these schools in 2011-12. While Comparison schools had slightly more teachers with Masters degrees (51%) than either Innovation school cohort groups (48% and 45%, respectively), these differences were not statistically significant (may be just chance).¹⁴ These data were also examined for the five previous school years with similar results.

Exhibit 15: Percentage of Teachers by Highest Degree Earned



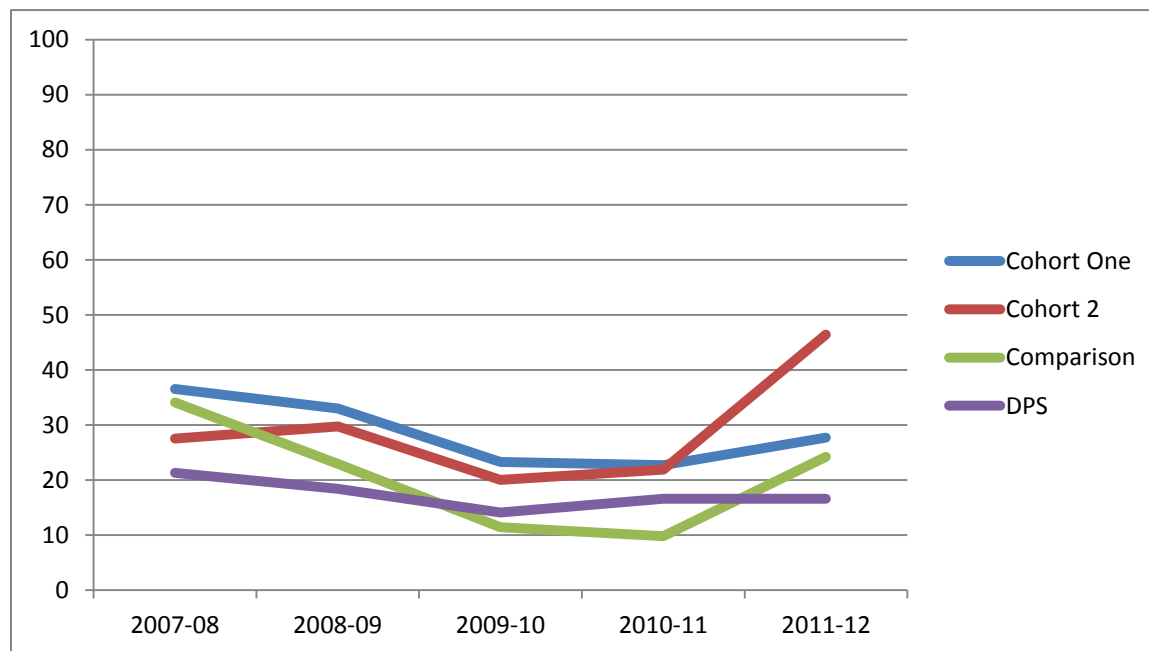
¹⁴ Chi-square analysis results: $\chi^2(4, N = 791) = 1.52, p = .823$

Teacher Turnover

Teacher turnover was higher in Innovation schools in relation to Comparison schools and DPS as a district, as shown in Exhibit 16, although trends over time appeared consistent across the groups. Turnover rates for Cohort One Innovation schools ranged from 23% to 37%; Cohort Two schools¹⁵ ranged from a low of 20% in 2009-10 to a high of 46% turnover in 2011-12. Comparison schools ranged from 10% to 34% while turnover rates in DPS as a whole were more stable (range from 14% to 21%). (See results by year for each group in Appendix E.)

When 2011-12 turnover rates were compared, differences between the Innovation schools by cohort and Comparison schools were found to be statistically significant (not just chance).¹⁶

Exhibit 16: Percent Teacher Turnover



Summary – Workforce Profile

Innovation schools as a group were found to have teachers with less experience than Comparison schools. The higher rates of turnover may be contributing to the decreasing experience because newly hired teachers are more likely to be teachers new to the profession, especially since Innovation schools are not required to accept in-district transfers of more experienced teachers. Principal experience levels are also likely affected by the turnover rates among those serving in leadership roles.

¹⁵ Results for Cohort Two do not include those six schools that were new in 2011-12.

¹⁶ Chi-square analysis results: $\chi^2(2, N = 1,456) = 62.67, p < .001$

School Achievement

Methods

Achievement results were examined using school-level data from the Transitional Colorado Assessment Program (TCAP) for 2012 and the Colorado Student Assessment Program (CSAP) for 2004–2011, as data were available for the schools. Results for Colorado administration of the ACT were also examined. For the analyses, Innovation schools were divided into four cohorts according to the year in which they were granted Innovation status, as shown in Exhibit 17. The same five Comparison schools used in the Climate Survey and Workforce analyses were included.

Exhibit 17: Cohorts for Achievement Data Analyses

Cohort	School	Academic Year Innovation Status Initiated
Cohort One	Bruce Randolph MS and HS	2008-09
Cohort Two	Montclair, Manual HS, Cole	2009-10
Cohort Three	Denver Green, Valdez, Whittier, Martin Luther King Jr. Early College	2010-11
Cohort Four	Noel, Denver Center for International Studies at Ford and Montbello, Collegiate Prep Academy, High Tech Early, Godsman Elementary, Green Valley Elementary, McGlone Elementary, Summit Academy, Swigert-McAuliffe International School, Vista Academy	2011-12

Student achievement analyses were designed to address three questions:

Q1: How does performance in DPS Innovations schools compare to state averages/medians?

The percentages of students scoring at proficient/advanced and the median growth percentiles for each TCAP/CSAP subject in 2012 were graphed in relation to the statewide average percentages and the state median.

Q2: How does performance in Innovation schools compare to other schools?

Achievement results for 2012 were summarized by TCAP/CSAP subjects by calculating an unweighted average¹⁷ of school level proficient/advanced rates for Innovation and Comparison schools. Results were compared to the overall rate of proficiency in DPS. ACT composite scores were also compared for high schools by cohort.

Q3: What is the trajectory of achievement scores in the Innovation schools?

Data for proficiency and growth levels at Innovation schools by cohorts, for Comparison schools, and for DPS overall were graphed to show changes over time. These data were also graphed showing achievement trends before and after attaining Innovation status. Similar graphs were created for each high school's composite ACT scores over time. Trends were examined to determine whether changes were evident in outcomes following the attainment of Innovation status.

¹⁷ This method was selected to provide a representation of school level performance (rather than using the percentage of individual students, which could over represent schools with large populations).

Results

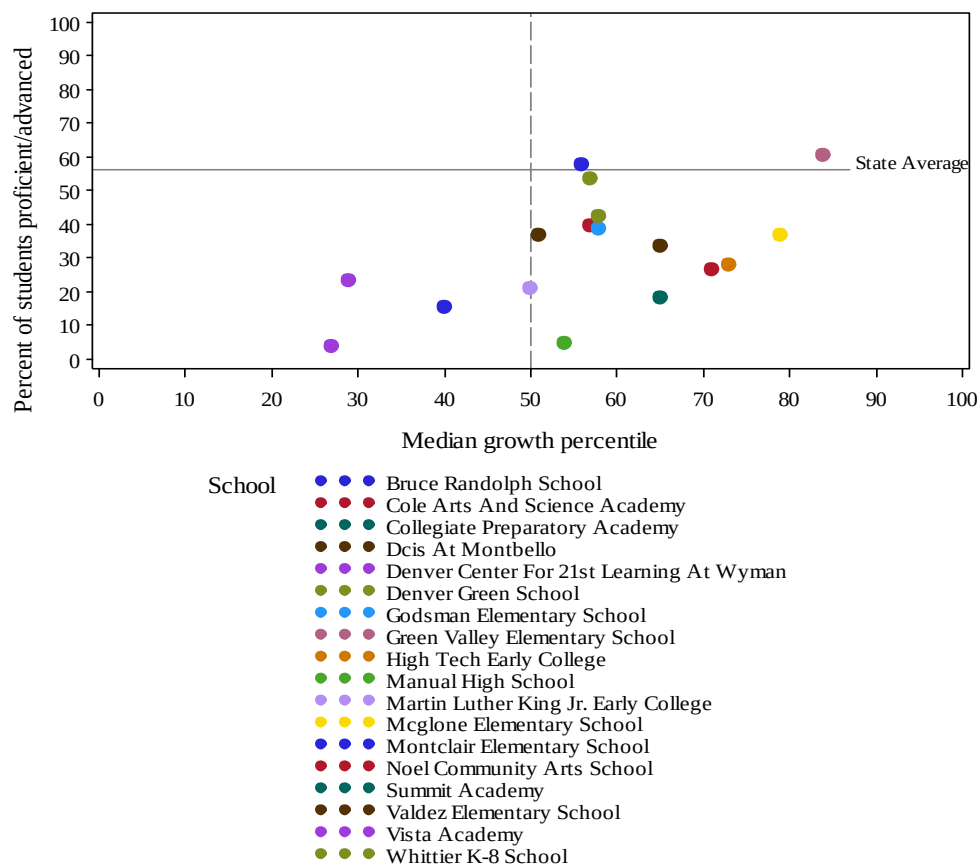
TCAP Comparison to State Results for Proficiency and Growth

On state assessments in 2012, Innovation schools typically demonstrated higher growth than the state median but lower levels of proficiency in all subjects. Results are presented by TCAP subject areas as shown in Exhibits 18 - 20 below.

Math

Two schools (Green Valley Elementary and Montclair) scored above the 2012 state average of proficient/advanced on math assessments (56%) and also showed higher growth than the state median. Three schools were below both the state average for proficiency and the state median for growth (Denver Center for 21st Century Learning at Wyman, Vista, and Bruce Randolph). The remaining 13 schools had average scores above the state median for growth but below the state average for proficiency.¹⁸

Exhibit 18: 2012 Math – proficiency and growth

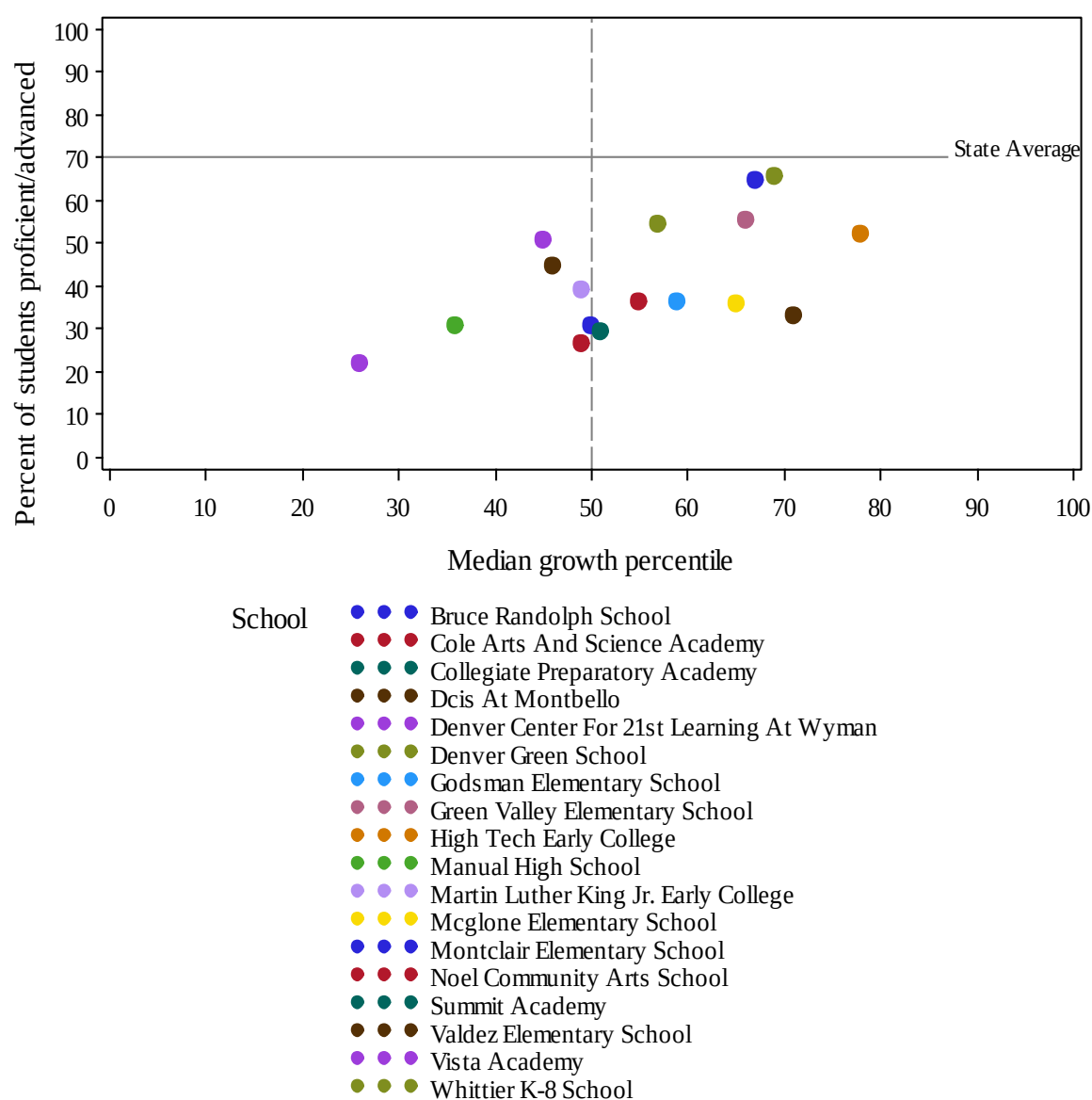


¹⁸ Complete math data were not available for Swigert-McAuliffe and DCIS at Ford.

Reading

All Innovation schools were below the 2012 state average of proficient/advanced on reading assessments (69%). Six schools (Denver Center for 21st Century Learning at Wyman, Manual, Vista, DCIS at Montbello, Noel, and Martin Luther King) demonstrated lower growth than the state median while 11 schools were at or above the state median growth.¹⁹

Exhibit 19: 2012 Reading – proficiency and growth

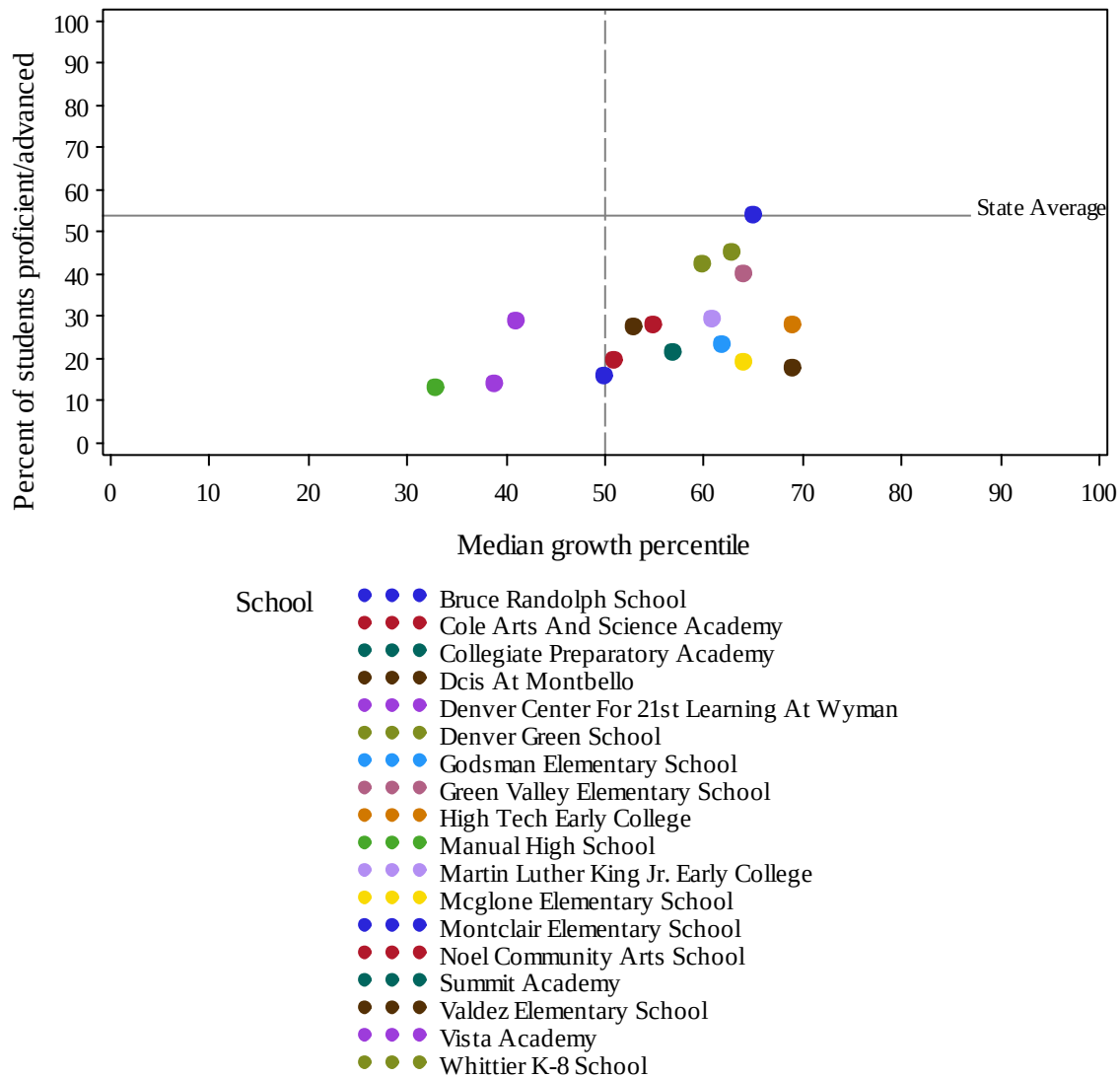


¹⁹ Complete reading data were not available for Swigert-McAuliffe, DCIS at Ford, and Summit.

Writing

All Innovation schools were at or below the 2012 state average proficient/advanced on writing assessments (54%). Three were below the state median for growth (Manual, Denver Center for 21st Century Learning at Wyman, and Vista). The other 14 schools were at or above the state growth median.²⁰

Exhibit 20: 2012 Writing – proficiency and growth

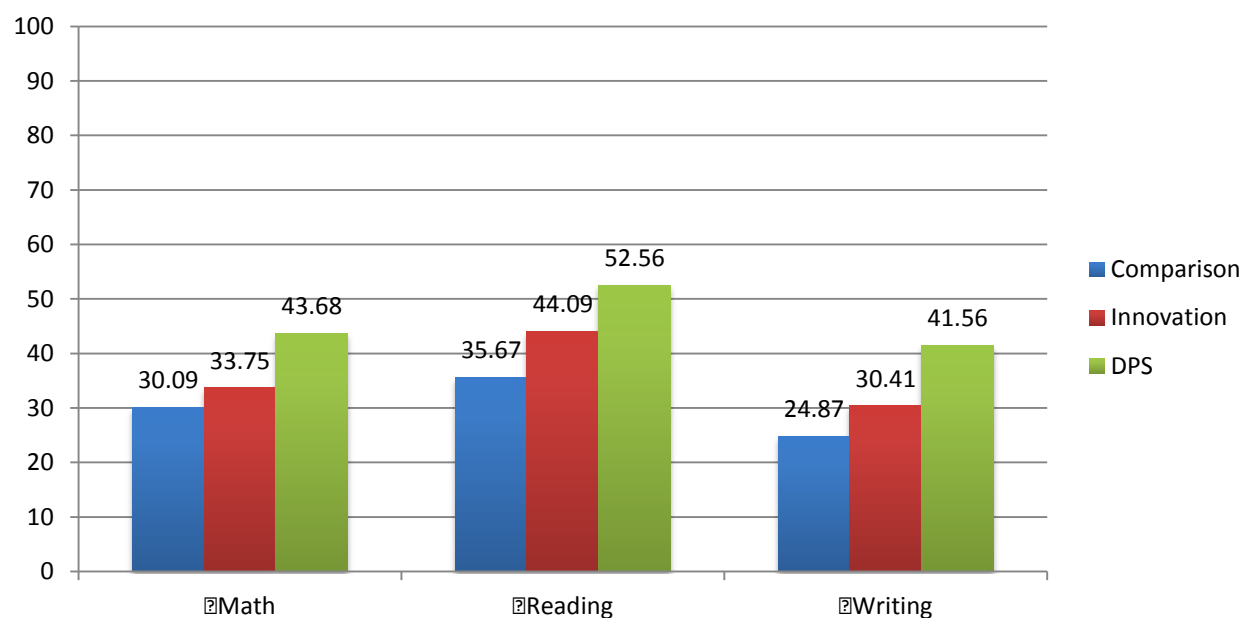


²⁰ Complete reading data were not available for Swigert-McAuliffe, DCIS at Ford, and Summit.

TCAP Comparison to District Results and Selected Schools

Schools that attained Innovation status from 2008 – 2010²¹ demonstrated lower levels of proficiency on 2012 assessments than DPS as a whole. However, Innovation schools as a group had a higher rate of proficiency than the selected Comparison schools, as shown in Exhibit 21.

Exhibit 21: 2012 School-Level Proficiency by Subject Area



TCAP/CSAP Achievement over Time

Percentage Proficient/Advanced

Student achievement as indicated by the percentage of students scoring proficient/advanced on state assessments has shown gradual improvement over time in Innovation schools as cohorts.²² This trend is consistent with the improvement in all DPS schools. However, the pattern in the Comparison schools is less consistent with the district's overall trend of improvement, showing nearly flat rates of performance.

Exhibits 22 – 24 show achievement trends over time by subject for Innovation schools by cohort, for Comparison schools, and for DPS. (Achievement trends for individual schools are presented in Appendix F.)

²¹ This excludes the cohort of schools attaining Innovation status during 2011-12 because they had less than a year of implementation at the time of the state assessments.

²² While proficiency results are graphed for the cohort of schools attaining Innovation status at the beginning of 2011-12, this information is presented only as baseline information.

Exhibit 22: Math TCAP/CSAP results – percent of students proficient/advanced over time

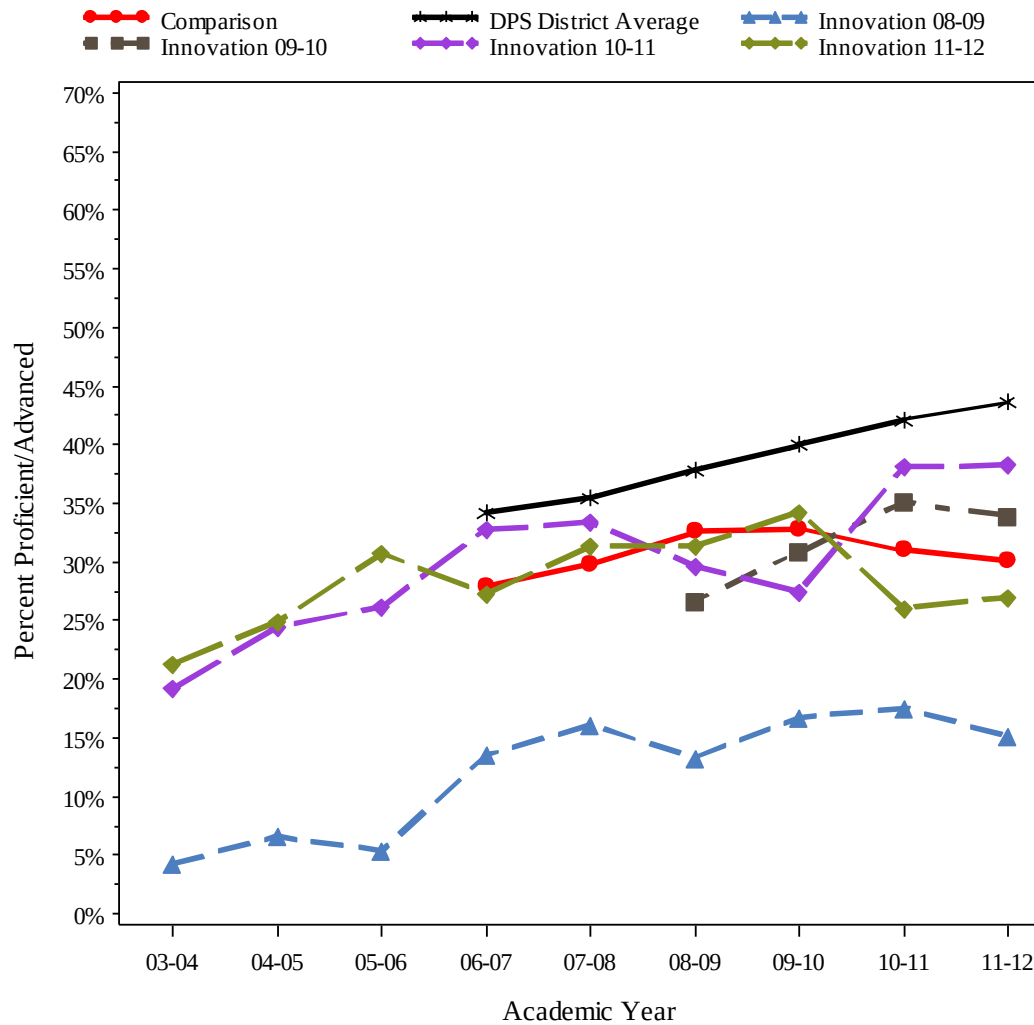


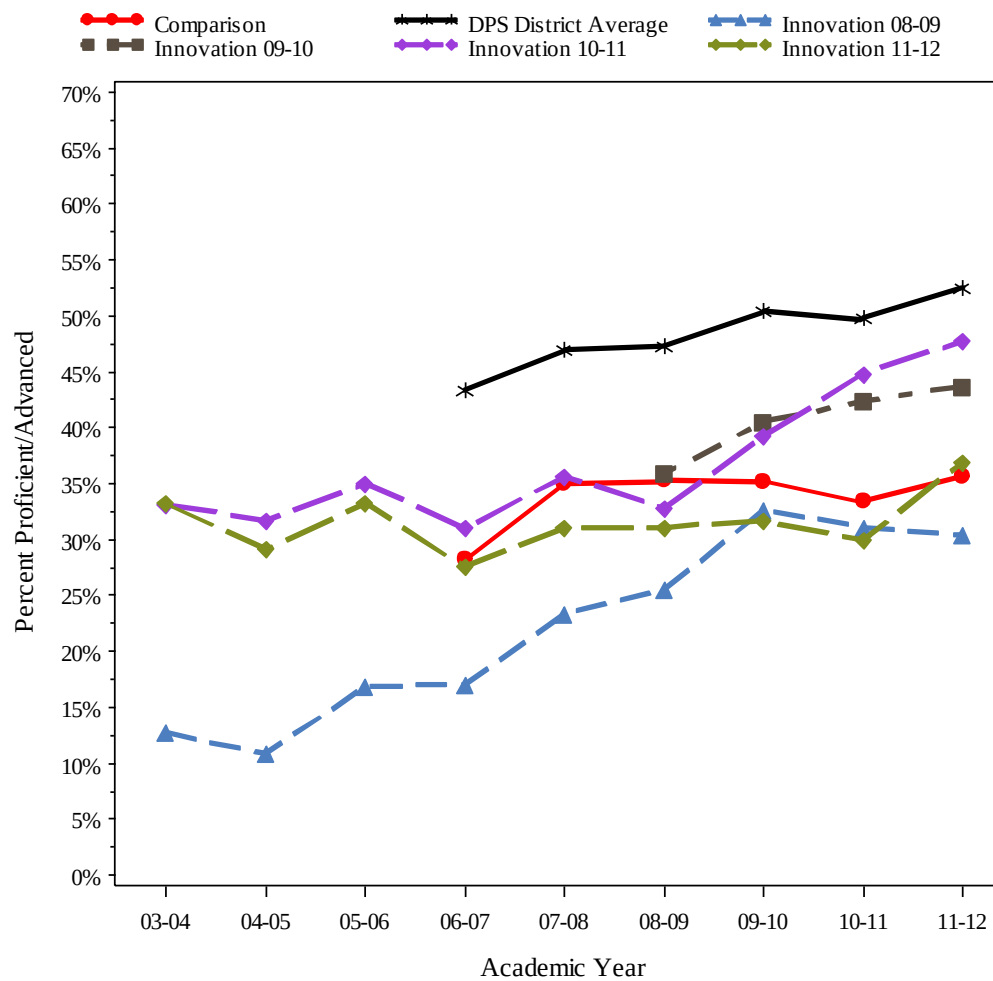
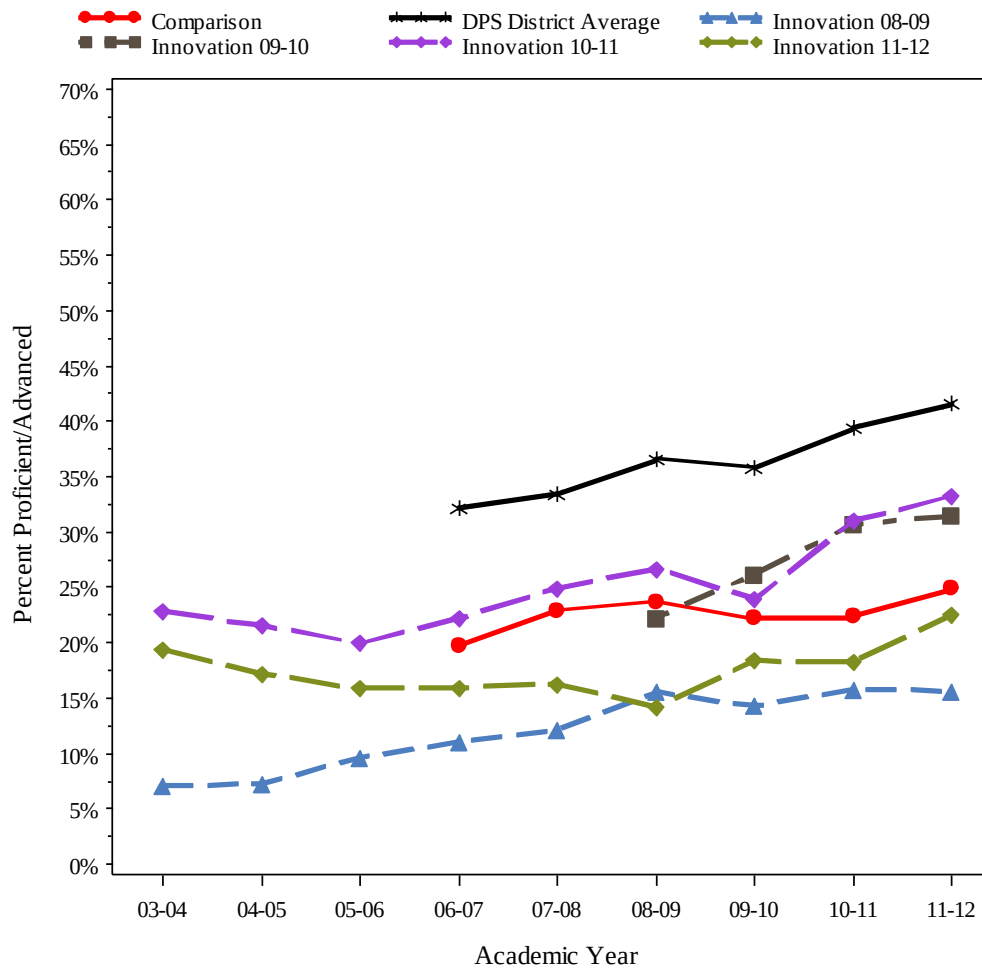
Exhibit 23: Reading TCAP/CSAP results – percent of students proficient/advanced over time

Exhibit 24: Writing TCAP/CSAP results – percent of students proficient/advanced over time*Median Growth Percentiles*

As was seen in 2012 results, Innovation schools tend to show average academic growth above the state median (50th percentile). While the growth percentile for all DPS schools has been nearly flat and consistent with the state median, growth in the Innovation school cohorts²³ has been more erratic, as shown in Exhibits 25 - 27. This may be due to differences among cohorts of students over the years, especially in schools with small populations where median scores are less reliable.

²³ Again growth results for the cohort of schools attaining Innovation status at the beginning of 2011-12 is presented only as baseline information.

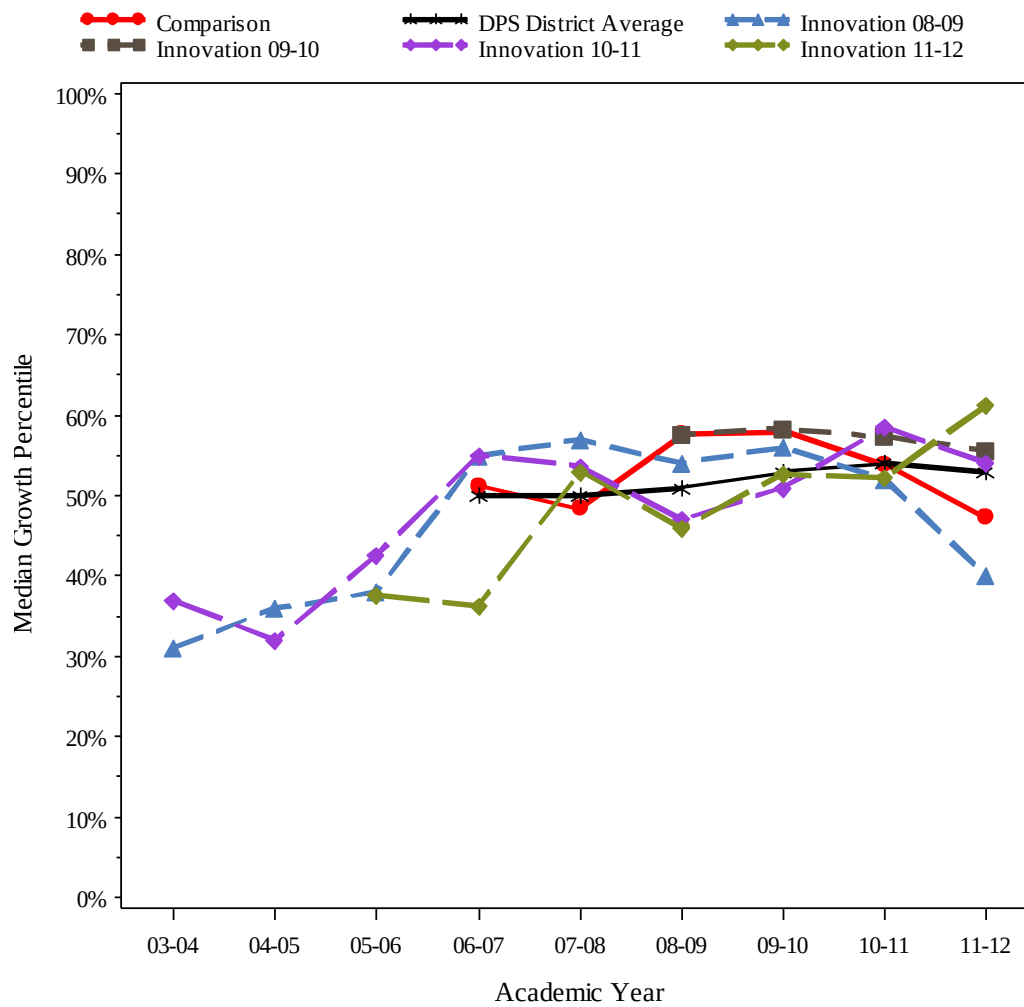
Exhibit 25: Math TCAP/CSAP results – growth percentile over time

Exhibit 26: Reading TCAP/CSAP results – growth percentile over time

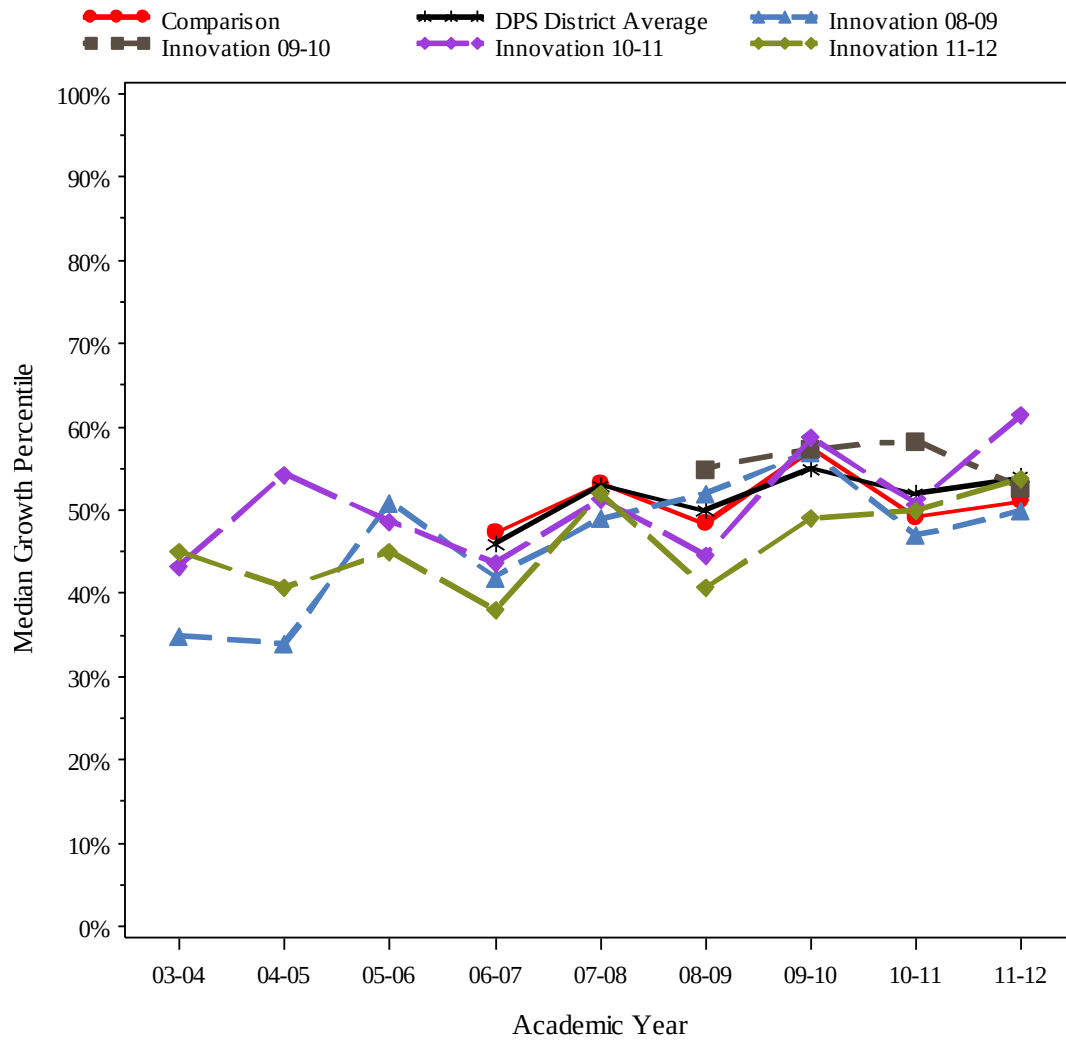
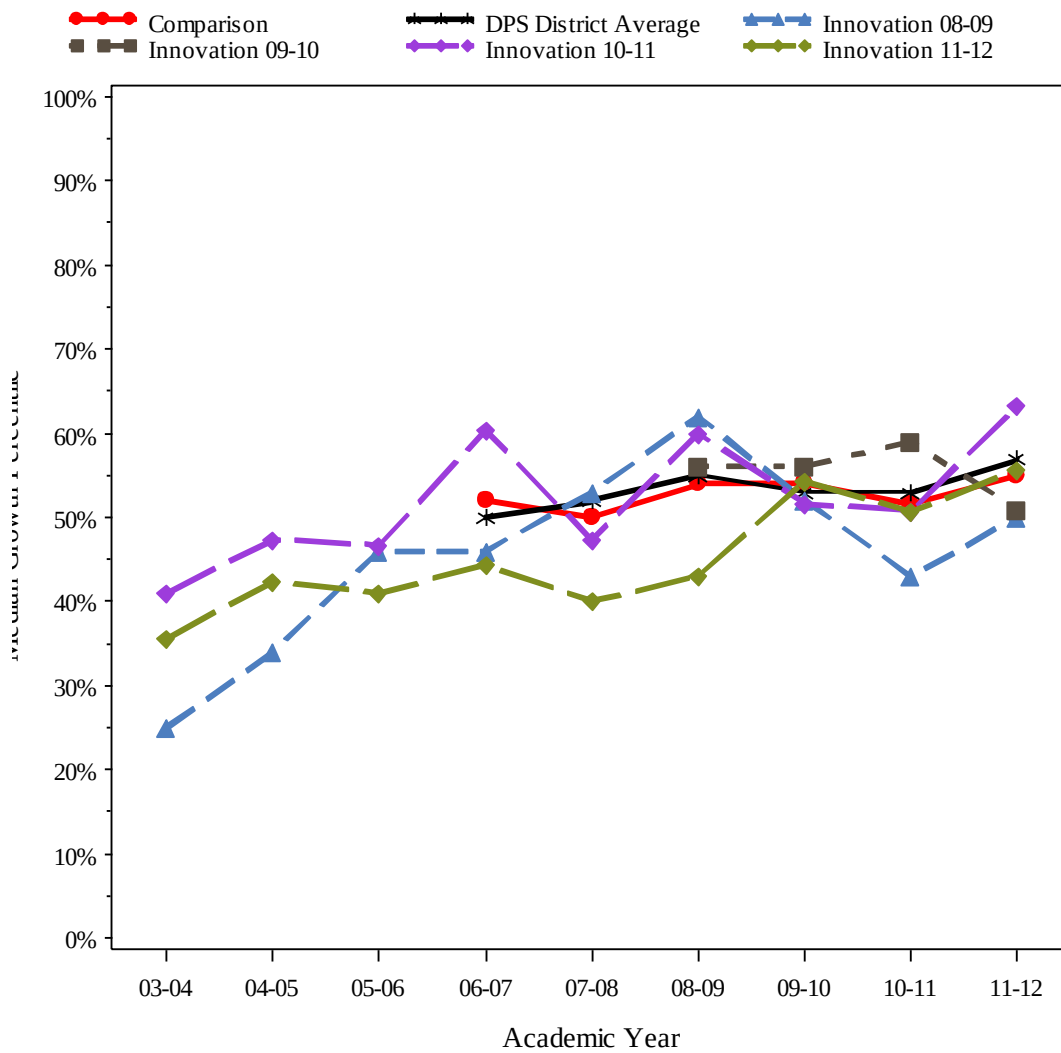


Exhibit 27: Writing TCAP/CSAP results – growth percentile over time

TCAP/CSAP Achievement Relative to Innovation Status

For those seven Innovation schools having achievement results prior to Innovation status and at least one year after the implementation year, results indicated schools were showing improvements in student performance (cells shaded in green in Exhibit 28) both before and after Innovation status. However, it is too soon to draw conclusions based on these results, which include only a small number of schools for a limited time period. (For proficiency and growth results for individual schools by TCAP/CSAP subject area relative to their attainment of Innovation status, see Appendix G.)

Exhibit 28: Proficiency Rates Relative to Innovation Status

School (Years)	TCAP/CSAP Subject	Percent Proficient/Advanced (Change from Previous Year)				
		2 years prior Innovation	1 year prior Innovation	Innovation year	1 year after Innovation	2 years after Innovation
Bruce Randolph ²⁴ (07- 11)	Math	14	16 (+2)	13 (-3)	17 (+4)	18 (+1)
	Reading	17	23 (+6)	26 (+3)	33 (+7)	31 (-2)
	Writing	11	12 (+1)	16 (+4)	14 (-2)	16 (+2)
Cole ²⁵ (09-12)	Math		21	25 (+4)	32 (+7)	39 (+7)
	Reading		22	28 (+6)	30 (+2)	36 (+6)
	Writing		13	19 (+6)	23 (+4)	28 (+5)
Manual (08-12)	Math	6	6 (0)	12 (+6)	14 (+2)	5 (-9)
	Reading	30	38 (+8)	39 (+1)	33 (-6)	31 (-2)
	Writing	17	19 (+2)	17 (-2)	21 (+4)	13 (-8)
Montclair (08-12)	Math	36	53 (+19)	56 (+3)	59 (+3)	58 (-1)
	Reading	41	48 (+7)	54 (+6)	64 (+10)	64 (0)
	Writing	22	35 (+13)	43 (+8)	49 (+6)	54 (+5)
Martin Luther King (09-12)	Math	26	21 (-5)	21 (0)	21(0)	
	Reading	36	44 (+8)	41 (-3)	39 (-2)	
	Writing	27	24 (-3)	24 (0)	29 (+5)	
Valdez (09-12)	Math	23	28 (+5)	40 (+13)	37 (-3)	
	Reading	26	33 (+7)	36 (+3)	33 (-3)	
	Writing	22	23 (+1)	23 (0)	17 (-6)	
Whittier (09-12)	Math	40	33 (-7)	41 (+8)	42 (+1)	
	Reading	36	41 (+5)	42 (+1)	54 (+8)	
	Writing	31	25 (-6)	38 (+13)	42 (+5)	

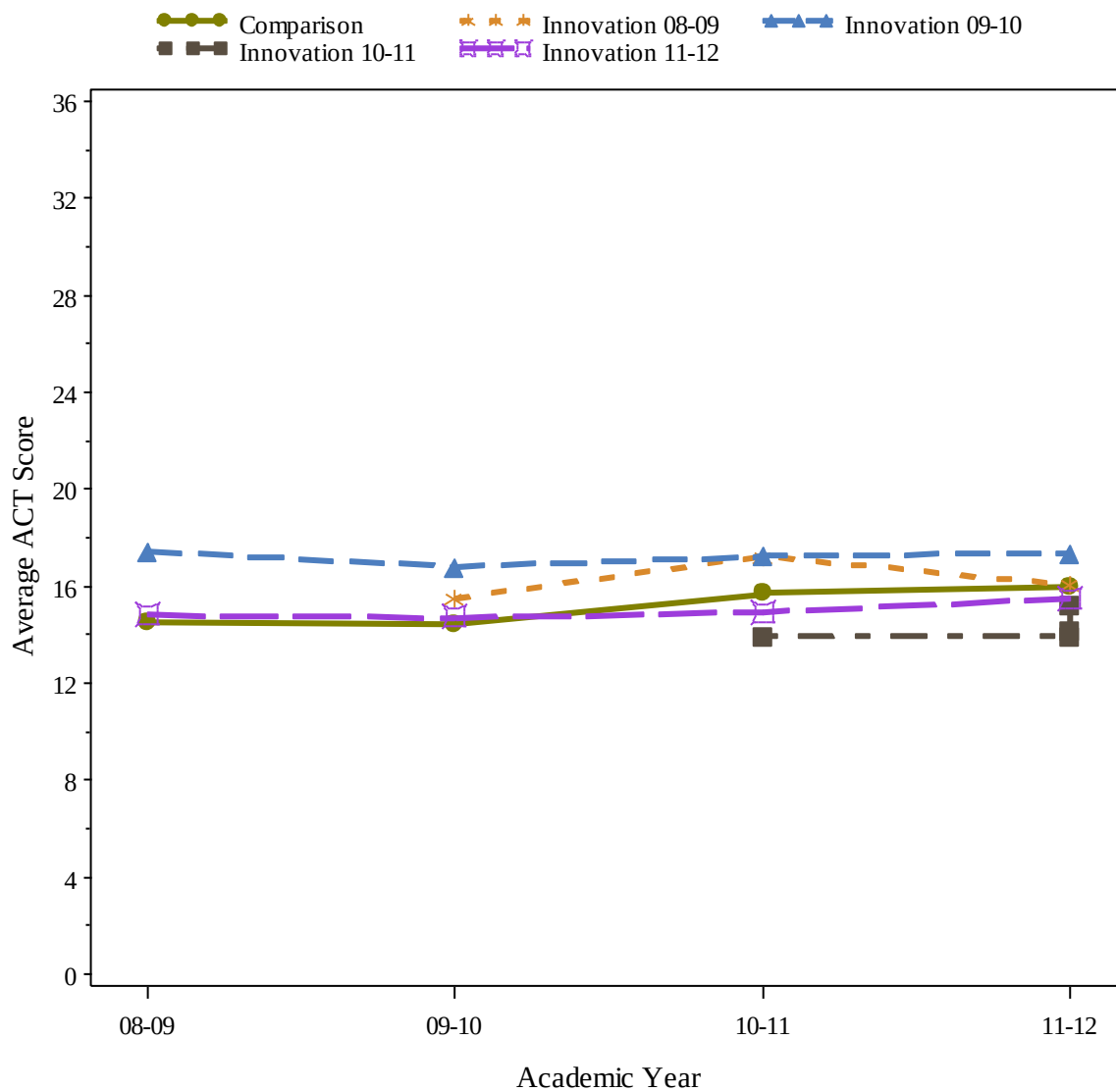
²⁴ Bruce Randolph is the only school with three years of achievement results; 2012 results were not used to allow for comparisons with other schools at similar points in time.

²⁵ Cole was closed during 2007-2008.

ACT Results

For Innovation high schools (Bruce Randolph, Manual, Martin Luther King), ACT composite scores showed little variation over time, as shown in Exhibit 29. The average change between 2011 and 2012 was -.24. Comparison schools showed a small increase over time (change between 2011 and 2012 was +.56). (See Appendix H for ACT results over time in relation to attainment of Innovation status.)

Exhibit 29: Average Composite ACT Scores over time



Summary – School Achievement

Student achievement data indicated Innovation schools are showing improvement in performance; however, there is insufficient data to connect these results to their status as Innovation schools. While it is hopeful that Innovation schools are demonstrating high rates of growth compared to the state median, similar growth rates were seen in Comparison schools. Although Innovation schools showed slightly higher rates of proficiency than Comparison schools, the small sample and limited time period make it too soon to be conclusive. The clear trajectory of improvement in Innovation schools is mirrored in district-wide improvement trends and was evident in most schools before they attained Innovation status so, therefore, cannot be solely attributed to this factor. It is likely that many other factors are ultimately influencing achievement levels. As Innovation school achievement is monitored over time, it may be useful to view Innovation status as one possible intervention and compare results to schools implementing other types of school reform to examine whether Innovation status is equally effective as other options.

Conclusions and Questions for Further Exploration

In this year's study, teachers at schools with Innovation status for a longer period of time reported their schools were characterized by the attributes of the "empowerment equation" identified by DPS stakeholders. While this finding is hopeful, it is unclear if these attributes were already present in the culture of the schools before seeking Innovation status. In other words, were the teachers and leaders (especially those in the first group of Innovation schools) already empowered and engaged in strategies to improve student outcomes before they pursued Innovation status? If they were already exhibiting these constructs, did Innovation status facilitate or enhance their work in any way?

A complication to measuring the effectiveness of Innovation schools is the high turnover rates for both teachers and principals. While this trend is also evident in DPS as a whole, lack of continuity in both leadership and the workforce at Innovation schools may be interfering with progress that might otherwise be expected. If Innovation schools are exercising autonomy in hiring (and, therefore, selecting individuals who are good matches), why has the workforce not been more stable? What factors (including Innovation status) are influencing these high turnover rates? How can DPS support a more stable workforce in Innovation schools?

In terms of the findings in this report, improvements were evident in student achievement in the first group of Innovation schools, but these changes cannot be attributed to Innovation status. Because rates of student achievement were improving in DPS overall during this time period, many reform strategies may be effectively improving student outcomes; Innovation status may be just one of many effective options. However, it may also be merely too soon to see differences between this strategy and competing initiatives for school reform; time is clearly a factor in the complicated process of improving student achievement. Examination of achievement trends over a longer period of time is warranted for Innovation schools in comparison to those implementing other interventions intended to raise achievement levels.

If the Innovation school theory of change is accurate, improved student outcomes should be evident in schools where autonomy in decision-making has been exercised for that purpose. This raises additional questions: Have Innovation schools actually implemented changes that would require Innovation status (as principals reported were planned in interviews in 2011)? Additionally, if changes have been made, how have they been directly related to improving professional practice (as opposed to more organizational re-structuring around budgets, schedules, and hiring practices)? These questions must be answered before an expectation of improved student outcomes can be examined in a meaningful way and distinguished from the expectation that student outcomes improve in all schools in DPS.

Appendices

Appendix A: Summary of Results from November 2011 Evaluation Report

Methods

The evaluation is based on a mixed-method framework which incorporates multiple sources of data. Data collection was framed around the Five Essential Supports for School Improvement, which have been found to be critical in school reform efforts by the Consortium on Chicago School Research (Sebring, Allensworth, Bryk, Easton, & Luppescu, 2006), and which include school structures, professional practice, and school cultures.

Interviews - Between May and June of 2011 seven of the eight Innovation schools opted to participate in interviews. A total of seven interviews were conducted with principals, thirteen with teachers, and six with parents.

Climate surveys - Between May and June of 2011, teachers at all eight of the Innovation schools were invited to participate in a survey to measure aspects of the climate and culture of the school. The total response rate across all teachers was 55% (n=347 of 626).

Innovation Plans – An analysis of the Innovation plans submitted by schools was used to clarify other data collected, and to gain an understanding of what waivers each school had requested as part of the Innovation process.

Achievement data – Existing data regarding student achievement on the CSAP was obtained from the Data Lab on the Colorado Department of Education (CDE) website. This data included the percent of students scoring proficient or advanced in each subject, and median growth percentiles.

Human resources data – DPS provided evaluators with human resources files for 08-09 and 09-10 which included information about teacher and principal staffing, experience, and degrees earned.

Findings

Innovation schools did not tend to look drastically different than other schools. Most principals reported that they have taken the approach of deliberately moving slowly with the implementation of their Innovation plan. It was clear that principals felt they could make more substantial changes given the waivers they have from district, state, and union policies; some principals were considering additional changes in the coming years. Given the flexibility that Innovation schools have, it is possible that they will begin to implement more numerous and substantive changes in the future. However, there remains the question of what it means for a school to be “innovative”, and what expectations exist (from the district and the schools themselves) around what an Innovation school looks like, and how it may differ or not from its previous practices and from other DPS schools.

The four major issues driving schools to seek Innovation status were: budget, schedule, workforce management, and level of control. These were also the areas in which respondents said they saw the most obvious changes following Innovation status. It was somewhat remarkable that principals did not

raise issues around curriculum and instruction as a key reason for seeking Innovation, though they did note that flexibility in these other four areas allowed them to make shifts related to instruction. The changes schools made which had the most potential to impact instruction had to do with teacher planning time, teacher PD, funds for additional academic and enrichment activities, schedule changes, and workforce management (e.g., hiring, opting out of direct placement). Given that there was such a consistent set of core drivers for all schools seeking Innovation status, this suggests there may be key areas where principals feel that district constraints are most burdensome. Principals appeared to view these issues as key levers in their management of the school; eliminating or reducing constraints in these areas at other DPS schools could potentially improve principals' perceptions about their ability to make decisions and manage their schools. At this point there is no evidence from this study to support or refute the idea that autonomy in these areas will improve school outcomes, but removing constraints in these areas clearly improved the staff and community sense of autonomy and ownership in the Innovation schools.

Principals are relatively happy with the support they have received from DPS. They found that support improved after the formation of the Office of School Reform and Innovation (OSRI). A number of principals noted that in the early years of Innovation schools there had been challenges getting basic services from the district (particularly around HR and budget) because of a lack of understanding in central office. Departments did not know how to deal with the needs of Innovation schools, which differed from the traditional ways of doing things. Principals said that more recently, there had been a shift towards having dedicated central office liaisons in these departments who were knowledgeable about the Innovation schools and better prepared to assist. OSRI was cited by principals as a key force in helping the district better align systems of support for Innovation schools, though some principals felt that the high turnover of OSRI staff had impeded the unit's effectiveness.

Innovation led to an increase in both real and perceived control over the schools by principals, teachers, and parents. This increased control was viewed as a major positive by these groups, who expressed a sense of greater ownership of their schools. There was a general sense of increased empowerment around decisions including resources, workforce, and instruction. One specific change that was appreciated by many respondents was the enhanced agility to make rapid decisions at the school level, without having to wait for approval of the decision by various central office entities.

Having control over the workforce was a significant change in Innovation schools, from the hiring process to one-year contracts. The Innovation schools have made substantive changes in the way that they deal with their workforce. One major change was around hiring, including changes to timelines and the interview process. Schools were particularly pleased about opting out of direct placements; respondents were very negative about direct placement because they felt it led to schools having teachers who were not a good fit with the school's culture, philosophy, or rigor. Innovation schools tended to use one-year contracts with their teachers, and most respondents were happy with this. Parents and principals particularly liked the idea that they had a chance to determine if the teacher was a good fit before committing to them longer term.

Innovation schools have experienced high rates of mobility among teachers and principals. Their teachers tend to be somewhat less experienced and are less likely to have master's degrees than

teachers in comparable schools. Although the data available for this evaluation did not allow us to draw strong conclusions about the effect that Innovation has on a school's workforce, these findings suggest that Innovation schools may have unique needs around developing and maintaining their teacher (and principal) workforce.

Innovation schools tended to have overall positive cultures. Schools which had less positive cultures had experienced problems with the principal, principal turnover, and often lacked a clear vision for the school. In general, schools tended to be either high or low on all culture indicators. This suggests that different elements of school climate are highly intertwined, and problems in one area are likely to spill over into discontent in others. The interview data suggested that principal leadership was a key element, and that when the principal did not adequately support staff, or created an atmosphere of mistrust or negativity, climate indicators at the school tended to be more negative. Interestingly, the lack of a clear strategic vision was also present in schools which scored lowest on climate measures. Having a strong principal in whom the teachers and parents have trust, who is able to articulate a clear vision and align structures around that, seems to be an important element in the climate of schools.

With high principal turnover at the Innovation schools, there has been some confusion about the role of the district in choosing a new principal. Three of the Innovation schools have changed principals since they gained Innovation status, and this change was associated with difficulties and discontent at the schools. One theme which emerged in these schools was: What is the role of the district and the school in choosing a new principal? There appears to be a lack of clarity around which entity will make the final choice. Going forward, it will be important for the district to clarify the process of principal hiring, and the role that staff, community, and district have in choosing a new administrator.

Most of the Innovation schools were working on alignment across grades and subjects. Schools saw this work as critical, but the process was not necessarily effective at all schools. Innovation schools were dedicating considerable amounts of time to engaging teachers in work around creating better vertical and horizontal articulation. The work tended to focus on understanding what on-standard or on-grade work looked like. However, in several schools respondents felt the time dedicated to articulation was poorly used. This was generally associated with a lack of articulated goals or expectations, or a lack of structure to help move teachers towards the goals (since this left the onus on them to push the process forward). The prevalence of these articulation activities across schools raises the question of what support DPS provides to all district schools around operationalizing the standards, and helping teachers understand what on-standard and on-grade work looks like in various subjects.

There was a lack of clarity around the boundaries of autonomy in Innovation schools – what flexibility they have, and what regulations they are still subject to. This theme emerged in various ways from principals and teachers and was centered on the idea that the district has not adopted a clear vision of what Innovation schools are and what they should be able to do. This has resulted in some frustration for school staff, who at times felt they had to battle for autonomies they thought they were entitled to under Innovation status, or led to confusion around district requirements. With the formation of OSRI, the district may now be better positioned to define the district's understandings around Innovation schools. However, it was clear that principals believed the district has a distance to go in defining and

understanding Innovation schools. It may be very useful for DPS to consider outlining the expectations the district has for Innovation schools in a transparent way, including the autonomies Innovation schools enjoy as well as the boundaries they must still adhere to.

There are not yet clear trends to help us understand how Innovation will affect student achievement.

Prior to gaining Innovation status, many of the Innovation schools were already trending up in terms of the percent of students proficient and advanced, and most also had median growth percentiles above the state average of 50%.

Important questions remain about Innovation schools, and the district's role in supporting them.

These questions are not only important in relation to the Innovation schools themselves, but are also critical for the district as a whole as more schools gain Innovation status. Specific questions the district should consider include:

- Has DPS had a conversation around what it means to be 'innovative'? Are there particular expectations for what an Innovation school looks like and how it may differ or not from its previous practices, and from other DPS schools?
- What does success look like for an Innovation school? Is it only about student achievement? Are there other factors that should be considered? (e.g., teacher satisfaction, parent involvement, student perceptions).
- What are some cost implications (both in terms of additional costs or loss of economy of scale) as schools opt out of traditional district structures? What is the cost to the district and schools?
- How can the district best support Innovation schools as their practices diverge from district offerings (e.g., around curricula, assessment, professional development, leadership, etc.)?
- How is monitoring data about the Innovation schools used? What types of metrics are considered in the monitoring of Innovation schools (e.g., teacher satisfaction, parent involvement, teacher mobility, principal turnover, etc.)? How is this information used?
- What supports does the district provide to assist Innovation schools who are struggling with various issues (e.g., principal leadership, collaboration and planning, articulation, trust, etc.)?
- The Innovation Schools Act requires a 3 year review of each school's Innovation status. What will be considered as part of this review? Under what circumstances would the district take action with regards to a school's Innovation status? Do issues like climate, student achievement, mobility, instruction, etc. play a role? If so, how? If not, why not?

Appendix B: Sampling Procedures for Comparison Schools

STEP 1: Academic Levels

To select other Denver Public Schools (DPS) for comparison to the Innovation Schools, evaluators first sorted the schools into three groups based on the academic level of students served. A preliminary review of possible schools showed that there were no comparable 6-12 schools although there were middle schools with similar demographics. To include students in the high school grades, evaluators decided to search for a middle school and high school within the same feeder system to replicate the population of 6-12 schools. The resulting groups are shown in Exhibit One.

Exhibit One: Grouping and Goals for Comparison School Selection

Innovation Schools	Level		Goal – To identify
Montclair	Elementary	⇒	One or more comparison elementary schools
Valdez	Elementary		
Denver Green	Elementary		
Cole	K – 8	⇒	One comparison K- 8 school
Whittier	K – 8		
Bruce Randolph	6 – 12	⇒	Two comparison schools – one middle school and one high school within a feeder system
MLK Early College	6 – 12		
Manual	High School		

STEP 2: Free/Reduced Lunch Rates

For each group, all other DPS schools were sorted by academic level. Within those groups, schools were sorted by the rate of free/reduced lunch (FRL) at those schools. Schools with FRL rates within +/- 10 percentage points of the average of the Innovation Schools at that level were considered as potential comparison schools.

STEP 3: School Performance Framework

For all potential comparison schools, the School Performance Framework rating (SPF) was identified. Schools were then matched to be consistent with the SPF rating assigned to the Innovation Schools.

STEP 4: Tie- Breaker

Using this process, schools were selected at the K- 8 and middle/high school levels. However, two elementary schools were still potential comparison schools. To decide between the two elementary schools, the percentage of English Language Learners was examined, and that with the closest percentage was selected for inclusion in the comparison group.

Appendix C: Climate Survey Results by Item

This section contains the item-level analyses contrasting Innovation and Comparison schools. The scale for each item is indicated in the table. Items are divided into the nine scales used in this analysis.

Three items were deleted from the final analyses because they exhibited poor scale reliabilities. These items were:

- *Our school would be able to perform better if we had more autonomy than we currently have to make decisions (e.g., scheduling, hiring, budget, instructional program).*
- *Teachers at this school: feel responsible for the students they teach, but not for other students in the school.*
- *To what extent do you feel that you have been successful in providing the kind of education you want to provide for your students?*

Innovation and Professional Learning

	Question text	Mean	N	Std Dev
Comparison	Teachers are willing to take risks to make this school better	2.67	73	0.93
	Teachers are eager to try new ideas	2.82	73	0.86
	Teachers are really working to improve their teaching	3.07	71	0.74
	Teachers have a can do attitude	2.75	73	0.92
	Teachers are encouraged to stretch and grow	2.73	73	0.90
	Teachers are continually learning and seeking new ideas to improve their practice	2.88	72	0.79
	Teachers respect the professional competence of their colleagues	2.71	73	0.94
	Teachers seek or implement innovative strategies for improving the overall quality of our school	2.69	72	0.93
Innovation	Teachers are willing to take risks to make this school better	3.10	152	0.71
	Teachers are eager to try new ideas	3.16	151	0.68
	Teachers are really working to improve their teaching	3.33	154	0.59
	Teachers have a can do attitude	3.25	151	0.63
	Teachers are encouraged to stretch and grow	3.08	152	0.80
	Teachers are continually learning and seeking new ideas to improve their practice	3.21	151	0.64
	Teachers respect the professional competence of their colleagues	3.05	154	0.72
	Teachers seek or implement innovative strategies for improving the overall quality of our school	3.08	153	0.75
Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1)				

Collaborative Environment

	Question text	Mean	N	Std Dev
Comparison	Teachers discuss instructional strategies with one another	2.96	75	0.86
	Teachers discuss curriculum issues with one another	2.96	75	0.81
	Teachers consistently plan together	2.59	75	0.89
	Teachers align their instruction with teachers at the same grade level	2.70	74	0.89
	Teachers align their instruction with teachers at different grade levels	2.39	74	0.87
	Teachers share a common understanding of our students' needs	2.83	75	0.84
Innovation	Teachers discuss instructional strategies with one another	3.09	158	0.65
	Teachers discuss curriculum issues with one another	3.17	157	0.64
	Teachers consistently plan together	2.66	158	0.84
	Teachers align their instruction with teachers at the same grade level	2.96	156	0.79
	Teachers align their instruction with teachers at different grade levels	2.48	155	0.75
	Teachers share a common understanding of our students' needs	3.01	158	0.74
Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1)				

High Quality Outcomes

	Question text	Mean	N	Std Dev
Comparison	Administration has high expectations for teacher performance	2.91	80	1.02
	Teachers have high expectations for student performance	2.91	79	0.82
	Teachers have high expectations for their own performance	2.95	79	0.81
Innovation	Administration has high expectations for teacher performance	3.34	167	0.85
	Teachers have high expectations for student performance	3.39	166	0.69
	Teachers have high expectations for their own performance	3.43	166	0.70
Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1)				

Decision Making

	Question text	Mean	N	Std Dev
Comparison	Decisions take into account the opinions of teachers, staff, and parent groups	2.05	75	0.98
	Teachers appropriately included in decision-making	1.93	75	0.93
	The principal, teachers, and staff school collaborate in effective way around school decision-making	1.91	75	0.90
	Teachers make instructional decisions that are in the best interest of their students	2.62	74	0.82
	Teachers have enough autonomy to make decisions that will positively impact their students	2.29	75	0.85
	Teachers have autonomy to make decisions about instructional delivery	2.51	75	0.84
	Decisions of school leadership about instructional practices are thoughtful and aligned with our schools mission	2.32	74	0.88
	Decisions of our school leadership help improve our school's practices	2.17	75	0.91
	Administrators have enough autonomy to make decisions and changes that will benefit this school	2.41	74	0.86
Innovation	Decisions take into account the opinions of teachers, staff, and parent groups	2.70	161	0.88
	Teachers appropriately included in decision-making	2.59	160	0.90
	The principal, teachers, and staff school collaborate in effective way around school decision-making	2.57	161	0.90
	Teachers make instructional decisions that are in the best interest of their students	3.12	161	0.66
	Teachers have enough autonomy to make decisions that will positively impact their students	2.93	161	0.70
	Teachers have autonomy to make decisions about instructional delivery	3.12	159	0.63
	Decisions of school leadership about instructional practices are thoughtful and aligned with our schools mission	2.91	159	0.87
	Decisions of our school leadership help improve our school's practices	2.88	158	0.85
	Administrators have enough autonomy to make decisions and changes that will benefit this school	3.05	159	0.72
Scale: Strongly Agree (4), Agree (3), Disagree(2), Strongly Disagree (1)				

Development of Capacity

	Question text	Mean	N	Std Dev
Comparison	Take on lots of different projects at once and end up not focusing very well on any of them	3.05*	80	0.91
	There is a lot of incoherence in the instructional programs	2.81*	79	0.96
	Instructional programs are fragmented, and do not fit together very well	2.75*	73	0.92
	Teachers have a shared sense of our schools mission	2.59	75	0.84
	Teachers have a shared sense of what we need to do to achieve the best outcomes for our students	2.59	74	0.84
	The educational programs are thoughtfully designed so they best meet the needs of our students	2.23	74	0.88
	We focus on a small number of practices and try to do those very well	2.00	75	0.87
	PD is differentiated to meet the needs of teachers	2.14	73	0.95
	PD enhances teachers ability to implement instructional strategies to meet student needs	2.19	73	0.94
	Professional learning opportunities in this school are aligned with the schools improvement plan	2.63	72	0.85
Innovation	Take on lots of different projects at once and end up not focusing very well on any of them	2.81*	167	0.96
	There is a lot of incoherence in the instructional programs	2.43*	167	0.85
	Instructional programs are fragmented, and do not fit together very well	2.38*	158	0.83
	Teachers have a shared sense of our schools mission	3.05	157	0.76
	Teachers have a shared sense of what we need to do to achieve the best outcomes for our students	2.98	156	0.72
	The educational programs are thoughtfully designed so they best meet the needs of our students	2.86	156	0.72
	We focus on a small number of practices and try to do those very well	2.37	157	0.82
	PD is differentiated to meet the needs of teachers	2.36	154	0.86
	PD enhances teachers ability to implement instructional strategies to meet student needs	2.64	154	0.79
	Professional learning opportunities in this school are aligned with the schools improvement plan	2.88	153	0.82
Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1)				
*These items were reverse coded when creating scale scores. In this table the values are presented				

Pride and Fulfillment

	Question text	Mean	N	Std Dev
Comparison	I would not want to work in any other school	2.19	79	1.06
	I would recommend this school to parents seeking a place for their child	2.38	79	0.96
	I would send my own child to this school	2.12	78	1.03
	I usually look forward to each working day	2.78	79	0.86
	I feel loyal to this school	2.73	79	0.97
	I feel proud being a teacher at this school	2.74	78	0.97
Innovation	I would not want to work in any other school	2.63	163	0.96
	I would recommend this school to parents seeking a place for their child	2.85	163	0.93
	I would send my own child to this school	2.49	161	1.03
	I usually look forward to each working day	2.99	163	0.79
	I feel loyal to this school	3.15	163	0.84
	I feel proud being a teacher at this school	3.20	163	0.85
Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1)				

Accountability

	Question text	Mean	N	Std Dev
Comparison	Teachers feel responsible for helping all students who are struggling	3.13	79	0.82
	Teachers feel responsible for helping other teachers do their best	2.77	79	0.93
	Teachers feel responsible for helping improve the entire school	2.86	79	0.96
	Teachers feel responsible for helping all students learn	3.09	77	0.88
	Teachers are committed to helping students learn	3.24	79	0.75
Innovation	Teachers feel responsible for helping all students who are struggling	3.43	164	0.68
	Teachers feel responsible for helping other teachers do their best	3.05	163	0.79
	Teachers feel responsible for helping improve the entire school	3.21	164	0.68
	Teachers feel responsible for helping all students learn	3.40	163	0.67
	Teachers are committed to helping students learn	3.48	163	0.61
Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree(1)				

Empowerment

	Question text	Mean	N	Std Dev
Comparison	Teacher influence: Student behavior policies ^b	2.06	84	1.01
	Teacher influence: Planning school budgets ^b	1.70	83	0.87
	Teacher influence: Determining their own teaching assignments ^b	2.42	83	1.01
	Teacher influence: Determining the school's schedule ^b	1.89	84	0.98
	Teacher influence: Determining the school's curriculum ^b	1.81	84	0.95
	Teacher influence: Hiring new teachers ^b	2.16	83	0.86
	Control over decisions: Selecting textbooks ^c	1.76	84	0.91
	Control over decisions: Selecting other instructional materials ^c	2.49	84	1.00
	Control over decisions: Selecting the content, topics, and skills to be taught ^c	2.30	83	0.96
	Control over decisions: Selecting the teaching techniques that you will use ^c	2.80	84	0.93
	Control over decisions: Selecting how to assess your students' learning ^c	2.45	84	0.92
	Adults who work most closely with students best positioned to make decisions to benefit those students ^a	3.40	80	0.72
	Teachers are empowered to make instructional decisions in their classrooms ^a	2.44	80	0.90
	Teachers believe that all students are competent learners ^a	2.71	73	0.94
	Teachers believe that every student is capable of learning and improving ^a	2.86	73	0.90
Innovation	Teacher influence: Student behavior policies	2.73	175	0.86
	Teacher influence: Planning school budgets	1.85	172	0.91
	Teacher influence: Determining their own teaching assignments	2.71	174	0.94
	Teacher influence: Determining the school's schedule	2.14	175	0.97
	Teacher influence: Determining the school's curriculum	2.59	176	1.00
	Teacher influence: Hiring new teachers	2.70	176	0.97
	Control over decisions: Selecting textbooks	2.41	176	1.00
	Control over decisions: Selecting other instructional materials	2.95	175	0.90
	Control over decisions: Selecting the content, topics, and skills to be taught	2.81	174	0.93
	Control over decisions: Selecting the teaching techniques that you will use	3.29	174	0.79
	Control over decisions: Selecting how to assess your students' learning	2.94	176	0.79
	Adults who work most closely with students best positioned to make decisions to benefit those students	3.35	167	0.63
	Teachers are empowered to make instructional decisions in their classrooms	3.13	167	0.74
	Teachers believe that all students are competent learners	3.22	154	0.70
	Teachers believe that every student is capable of learning and improving	3.29	154	0.70
^a Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1) ^b Scale: Great Extent (4), Some Extent (3), A little bit (2), Not at all(1) ^c Scale: Complete control (4), Moderate control (3), A little bit of control (2), No control (1)				

Ownership

	Question text	Mean	N	Std Dev
Comparison	I feel a strong sense of ownership about what happens in my classroom	3.18	80	0.78
	I feel a strong sense of ownership about what happens in my school	2.04	80	0.97
	Culture of ownership, where teachers believe they are responsible for outcomes of all students	2.21	80	0.87
Innovation	I feel a strong sense of ownership about what happens in my classroom	3.56	167	0.65
	I feel a strong sense of ownership about what happens in my school	2.67	166	0.95
	Culture of ownership, where teachers believe they are responsible for outcomes of all students	2.99	166	0.85
Scale: Strongly Agree (4), Agree (3), Disagree (2), Strongly Disagree (1)				

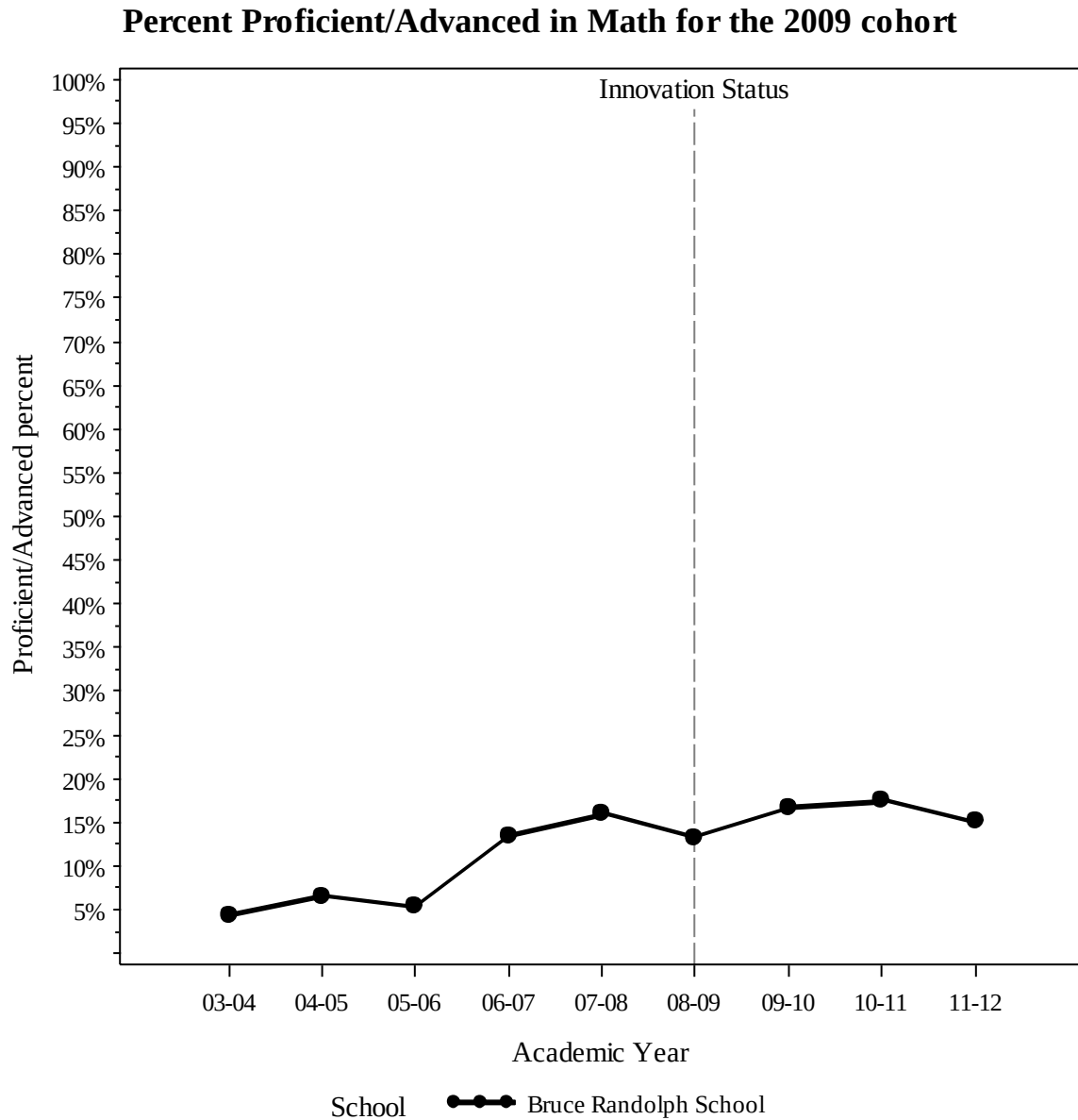
Appendix D: Discussion Questions for Climate Survey Results

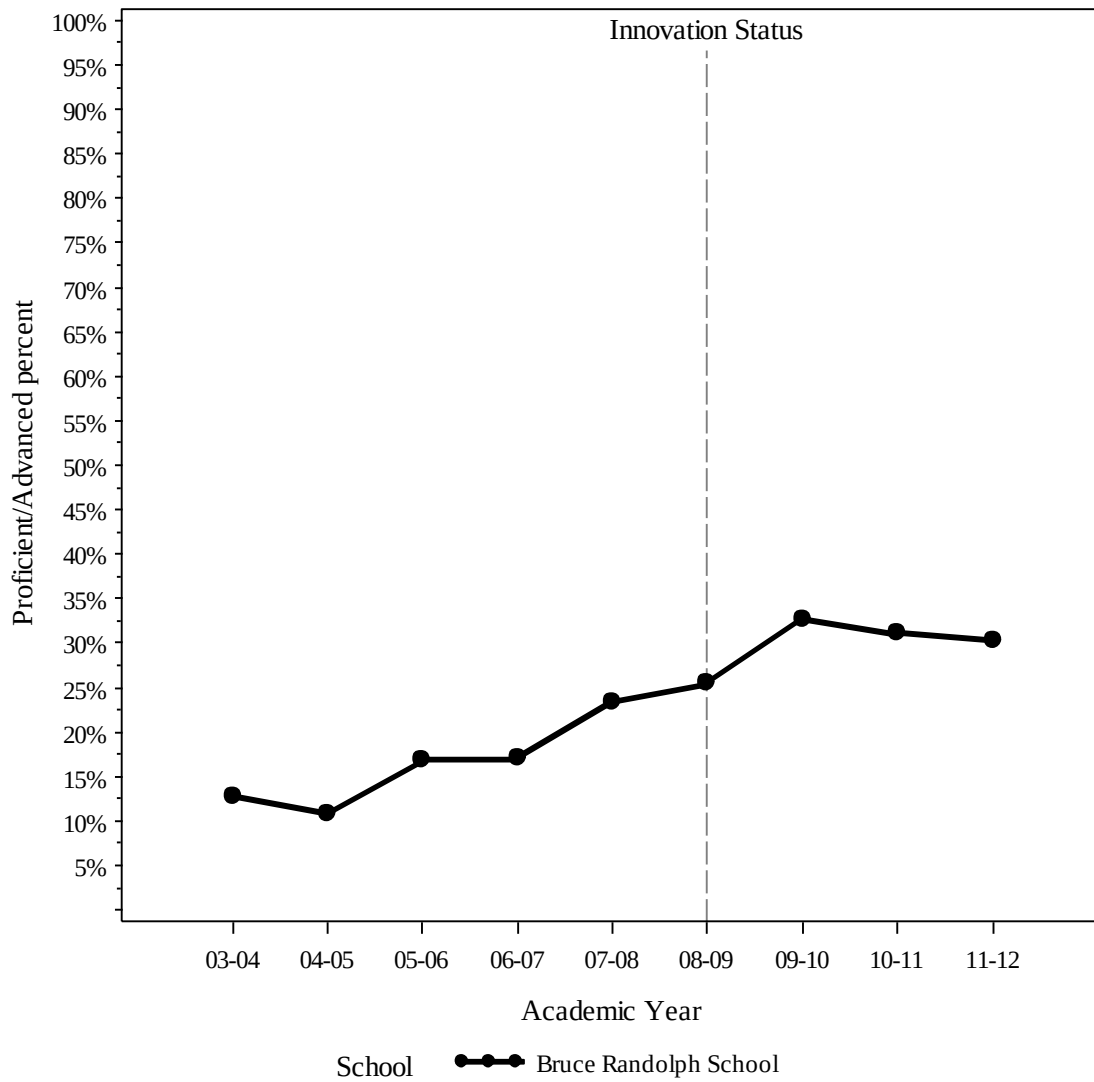
- Which scales are the ones prioritized as areas where Innovation schools should receive higher ratings? Are these in fact the scales that received higher ratings?
- Which scales are lower than wanted?
- Given how central concepts of Empowerment and Ownership are in Innovation schools, are the differences between the Innovation and Comparison schools as large as expected? Are levels of Empowerment and Ownership as high in Innovation schools as expected?
- Innovation schools scored lower on Capacity than on any other scale, yet Capacity had been discussed by stakeholders as an important foundational component of a school's ability to meaningfully enact Innovation. Given the items on the Capacity scale, how can we interpret Innovation schools' scores on this scale?
- If we consider individual items, which items suggest that things are going very well in the Innovation/Comparison schools?
- If we consider individual items, which items suggest that there are areas of challenge in the Innovation/Comparison schools?
- For items which are lower than wanted, are these important issues for Innovation schools? What might be causing some of the challenges? What additional information is needed? What could DPS do in order to help mitigate some of these challenges?
- Looking at items which measure actual behavior, not just perception (for example, review items on the Collaborative Environment, Empowerment, or Decision Making subscales).
 - How different are practices in the Innovation schools and the Comparison schools?
 - Are teacher responses in the Innovation schools as high as wanted?
 - Which behaviors are most important? Are Innovation teachers reporting that these happen at high levels?
 - Which important behaviors are not happening as much as wanted? What role might DPS have in helping promote these behaviors going forward?

Appendix E: Teacher Turnover Rates by Year

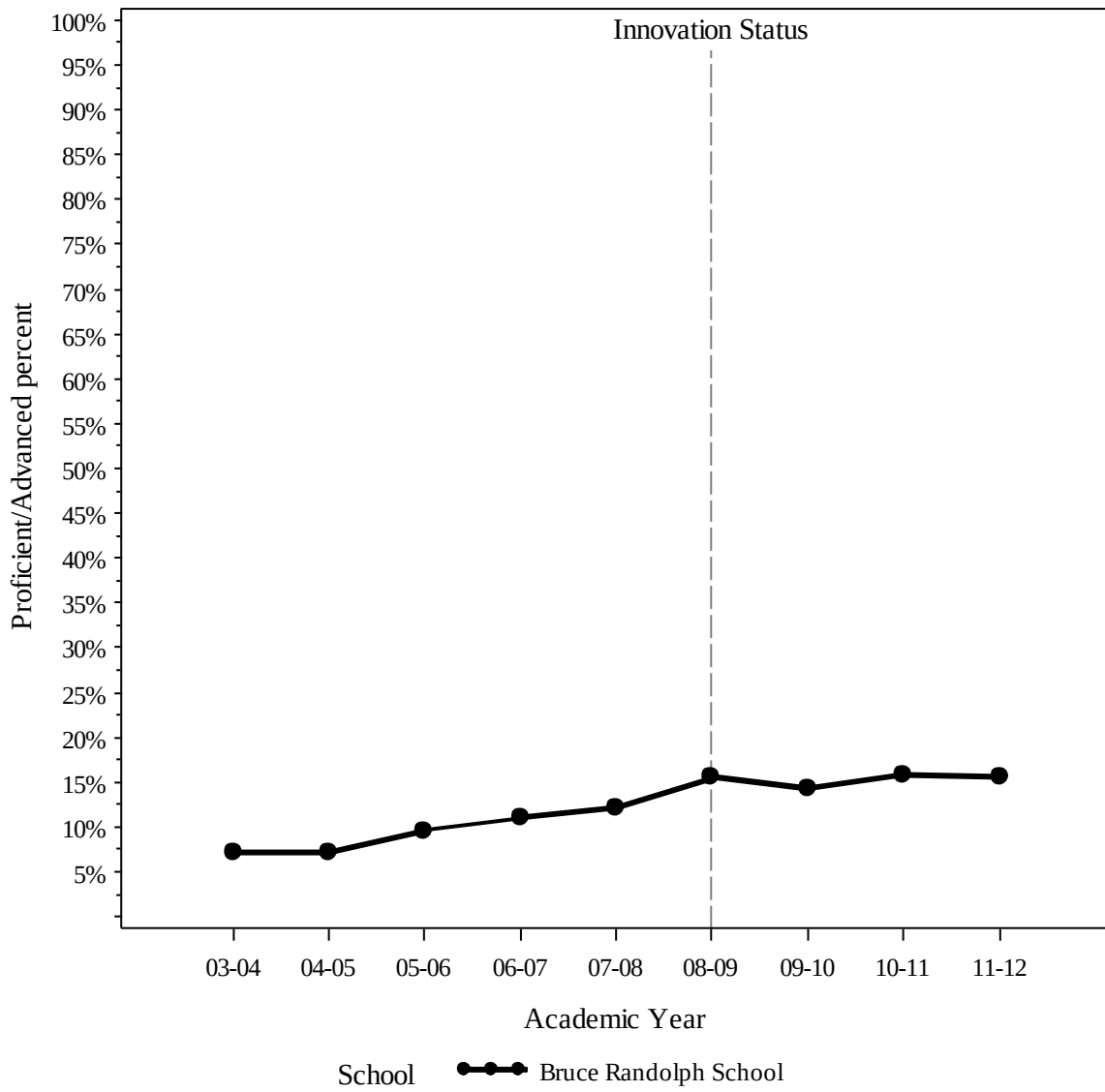
Percentages of teachers who left the school as compared to number employed in prior year:

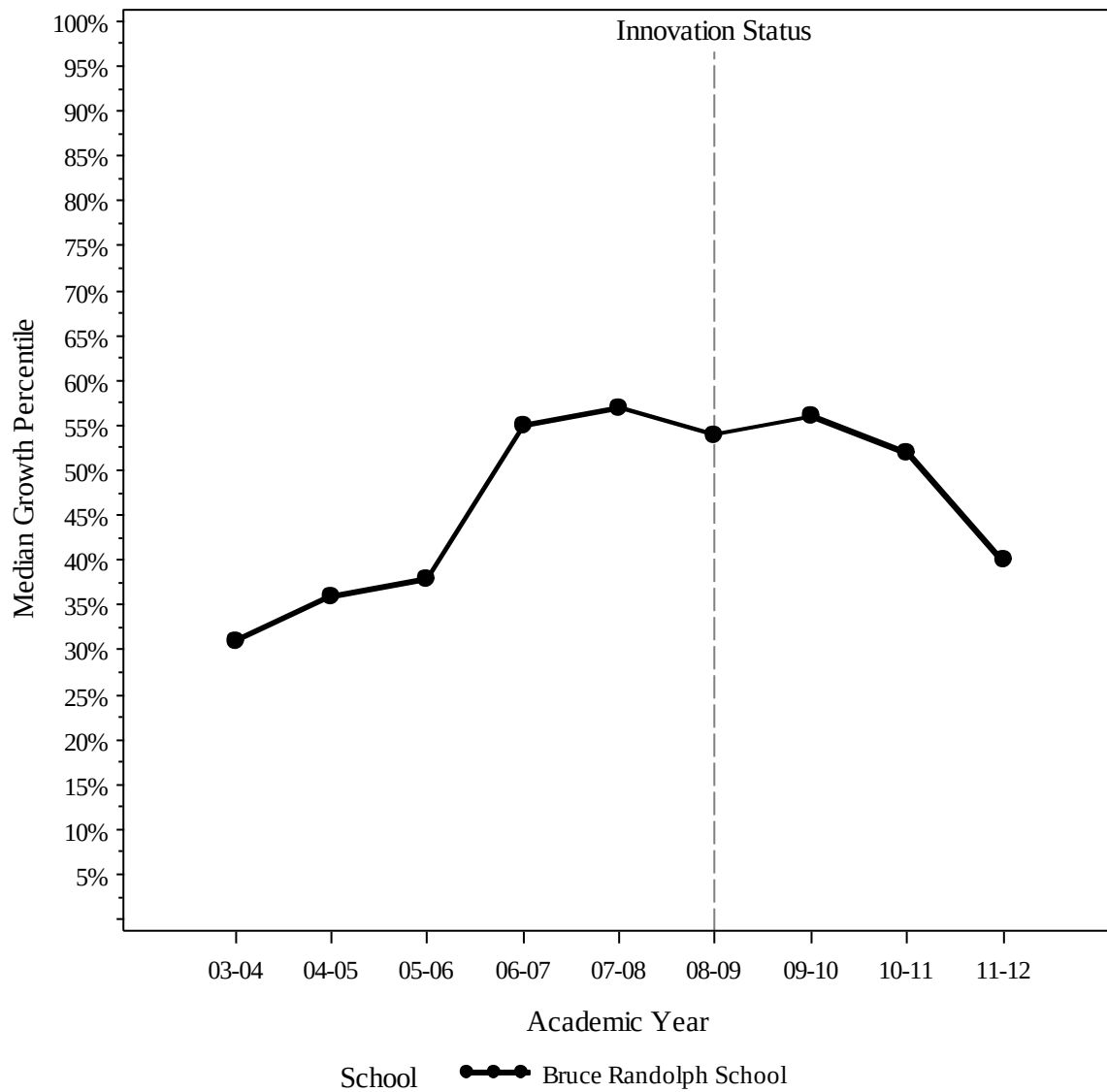
School Year	Innovation Cohort One	Innovation Cohort Two	Comparison	DPS
2007-08	36.5	27.5	34.1	21.3
2008-09	33.0	29.7	22.9	18.4
2009-10	23.3	20.0	11.4	14.1
2010-11	22.7	21.9	9.8	16.6
2011-12	27.7	46.4	24.2	16.6

Appendix F: Innovation TCAP/CSAP Results, by Cohort and Calendar Year

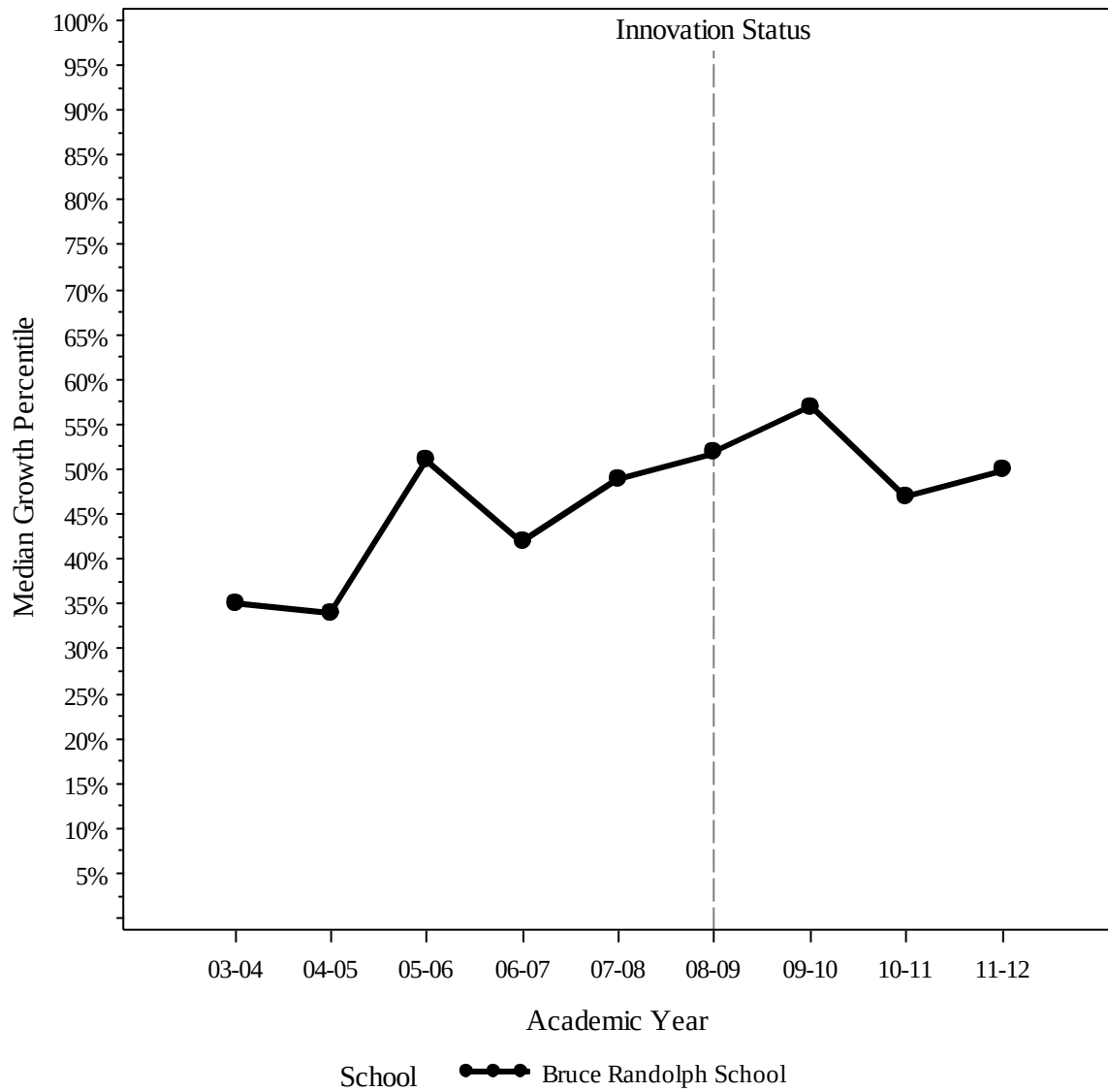
Percent Proficient/Advanced in Reading for the 2009 cohort

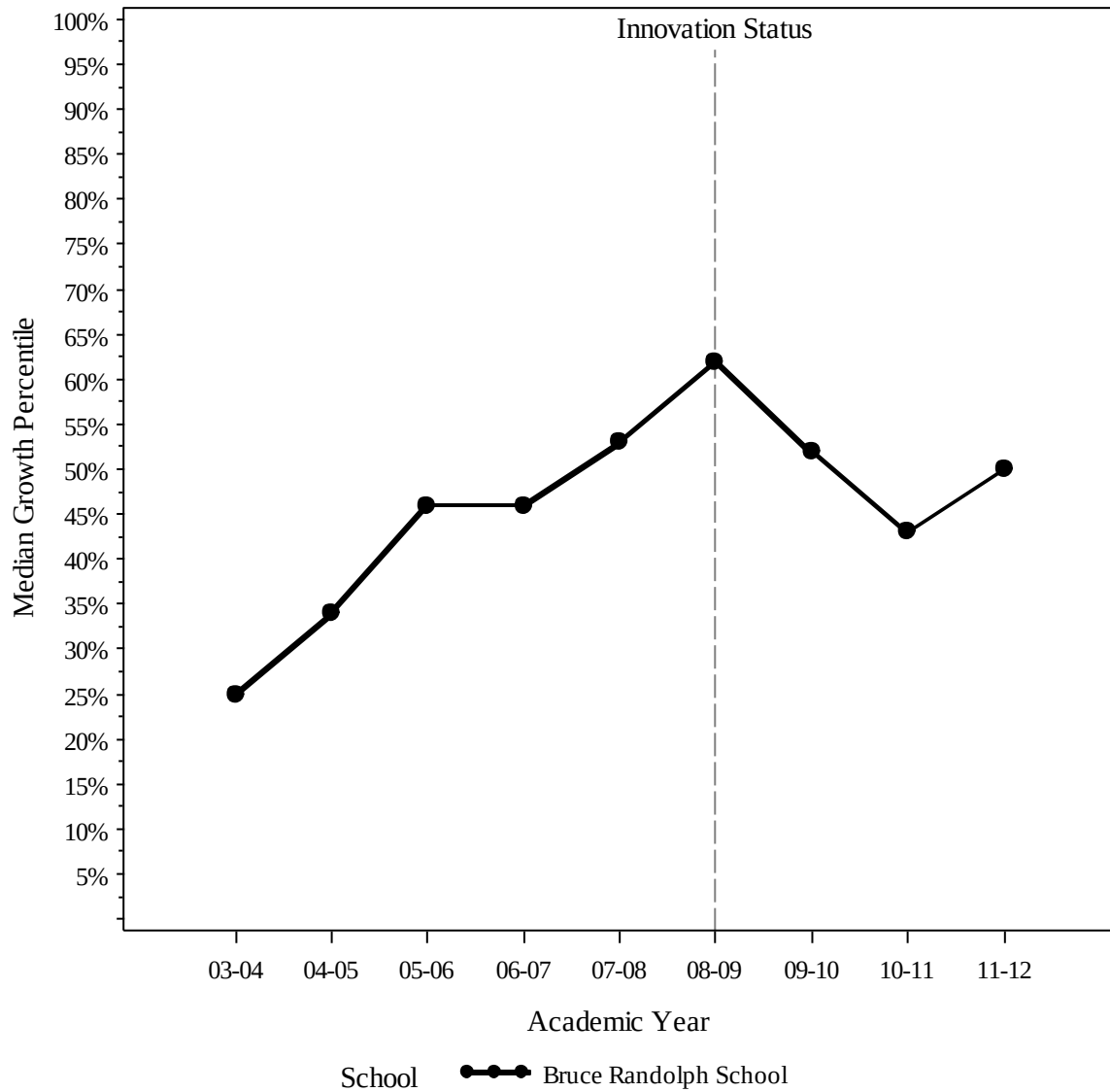
Percent Proficient/Advanced in Writing for the 2009 cohort



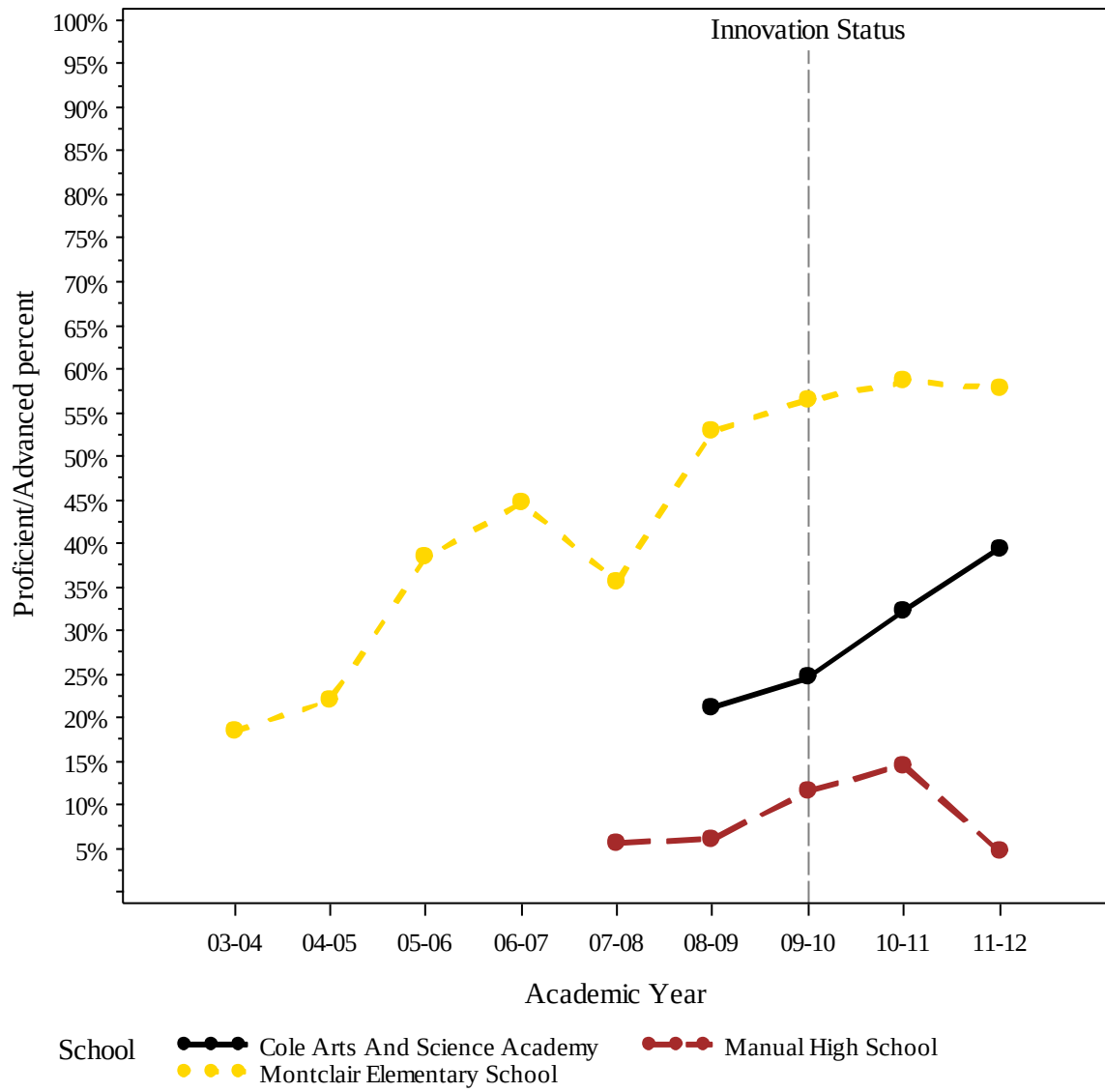
Median Growth Percentile in Math for the 2009 cohort

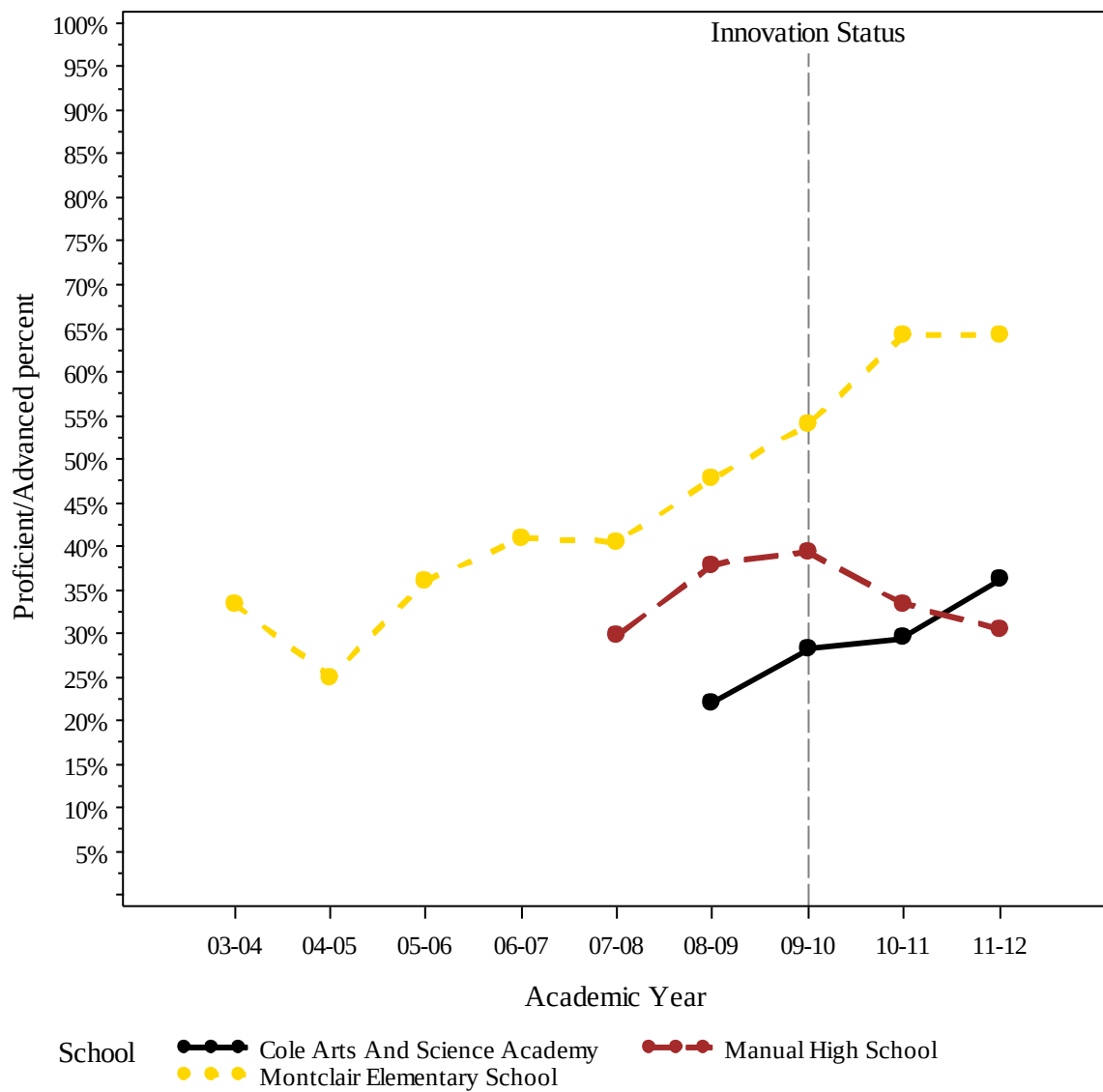
Median Growth Percentile in Reading for the 2009 cohort



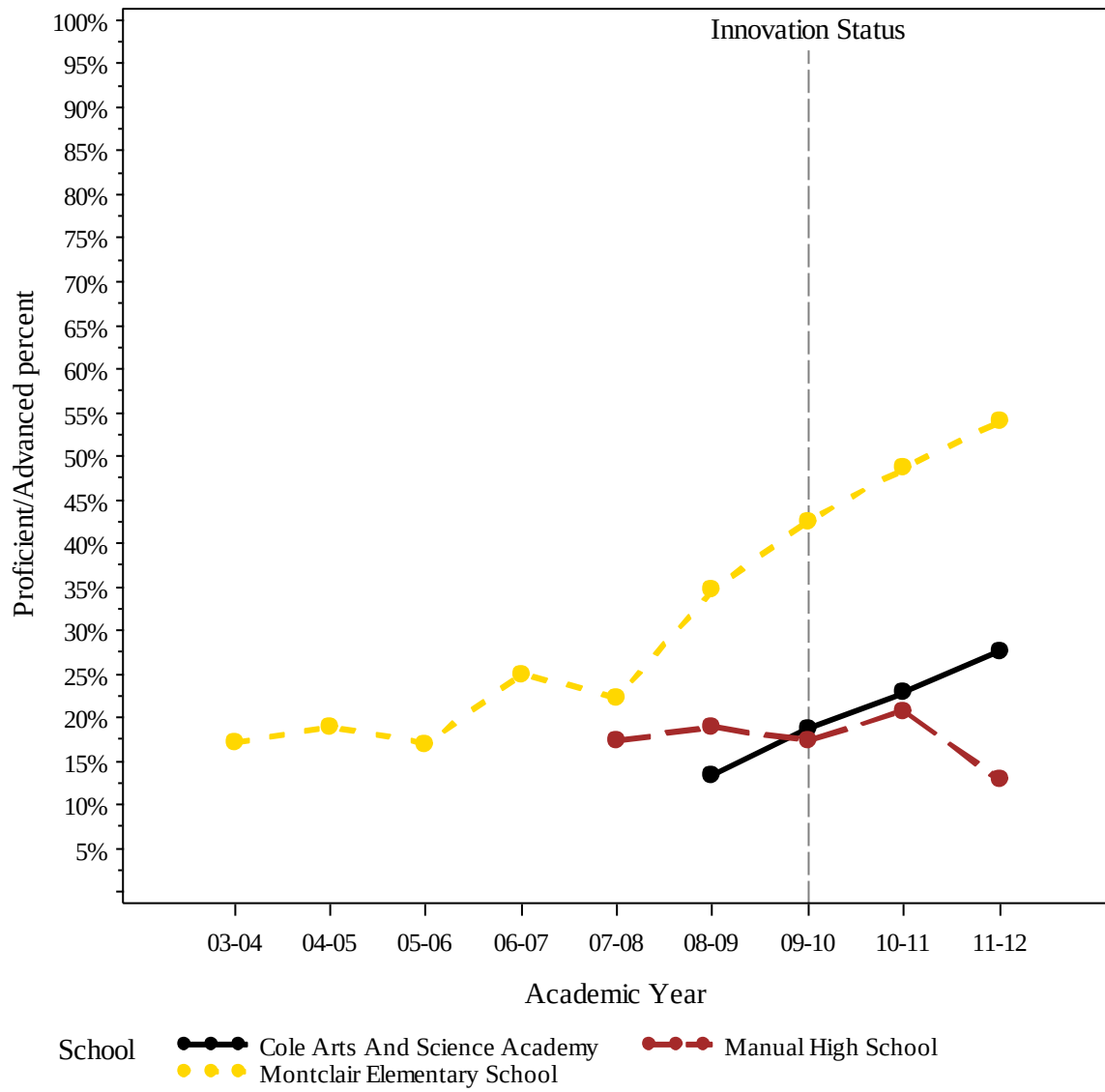
Median Growth Percentile in Writing for the 2009 cohort

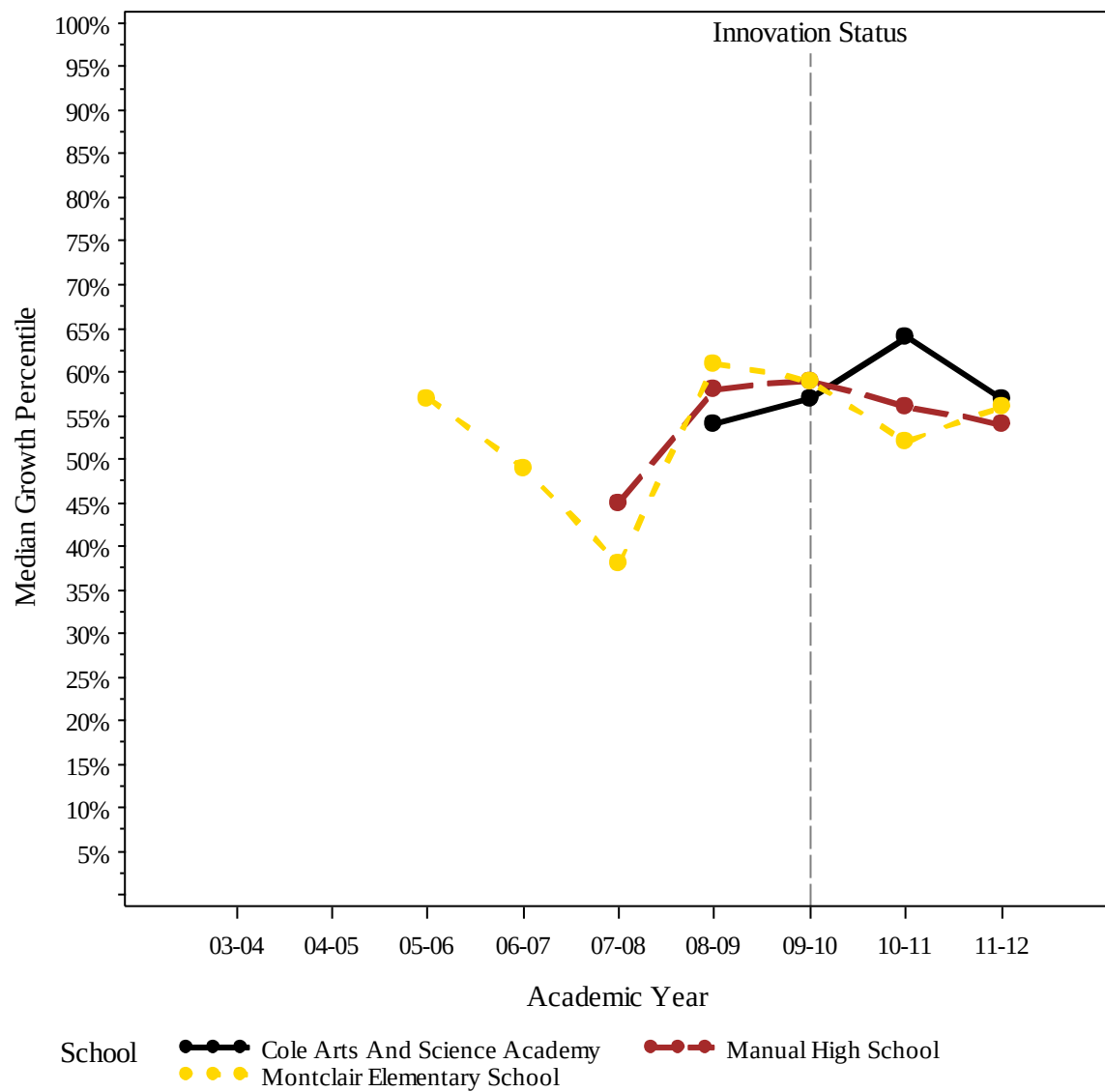
Percent Proficient/Advanced in Math for the 2010 cohort



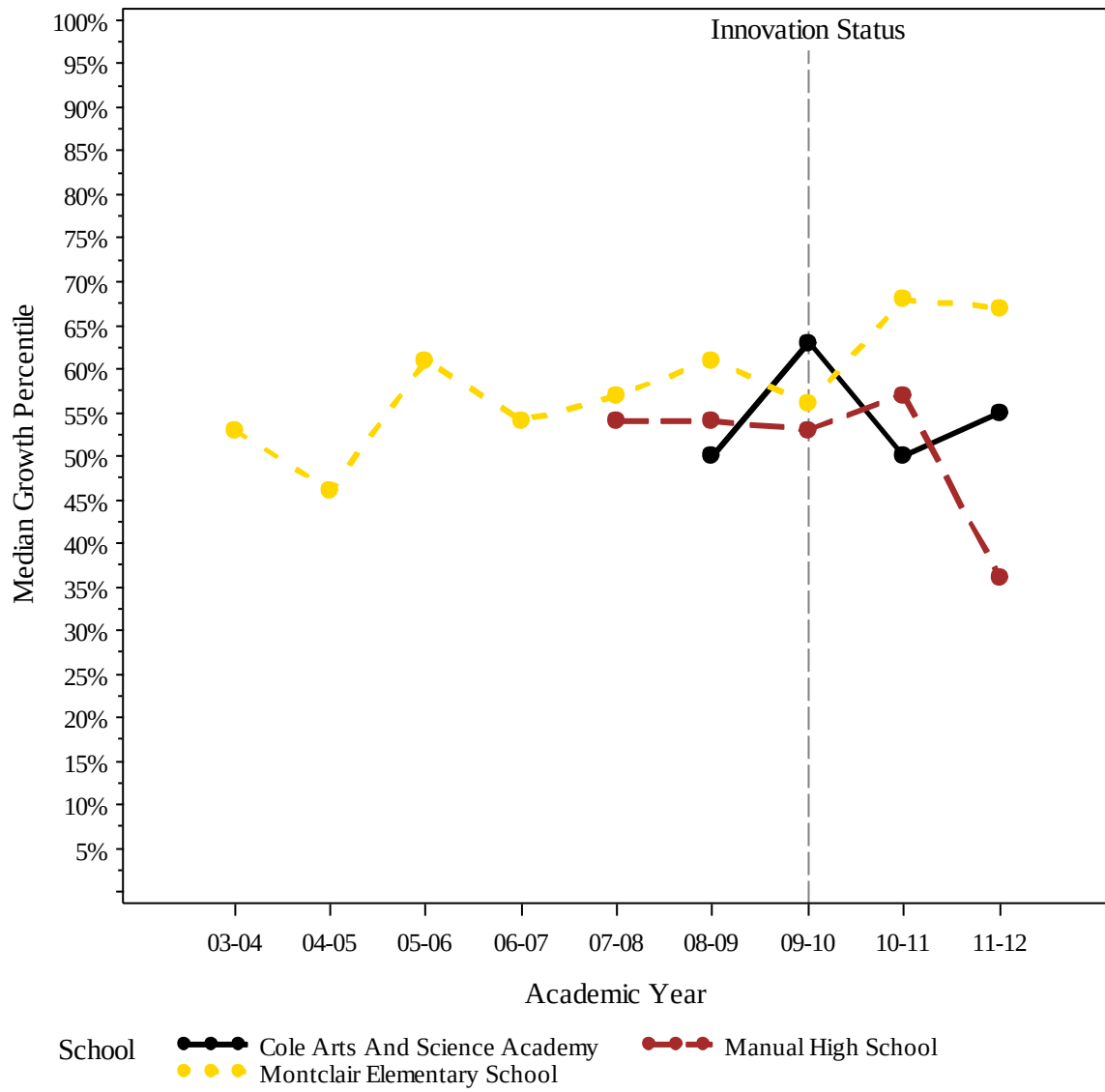
Percent Proficient/Advanced in Reading for the 2010 cohort

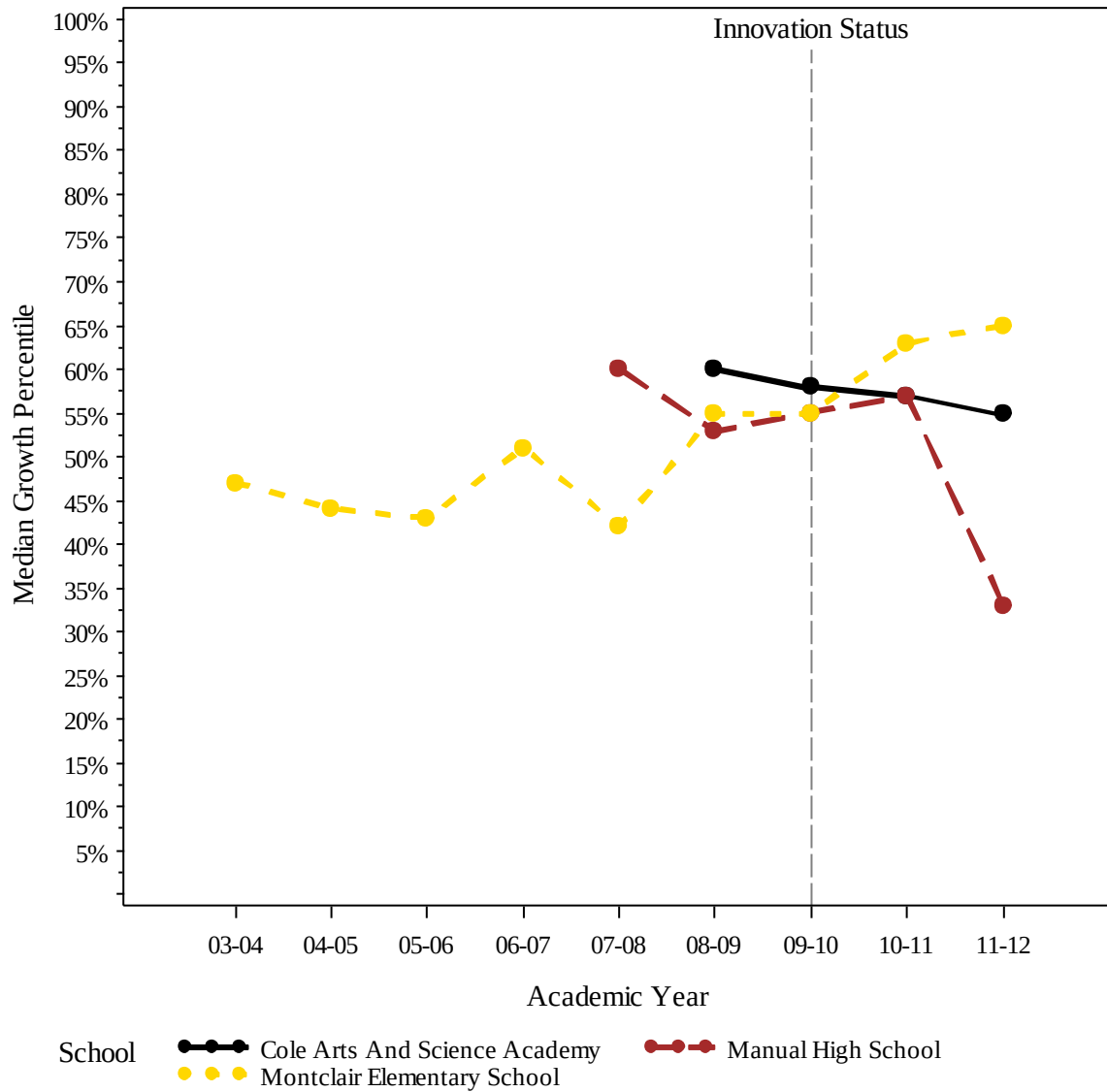
Percent Proficient/Advanced in Writing for the 2010 cohort



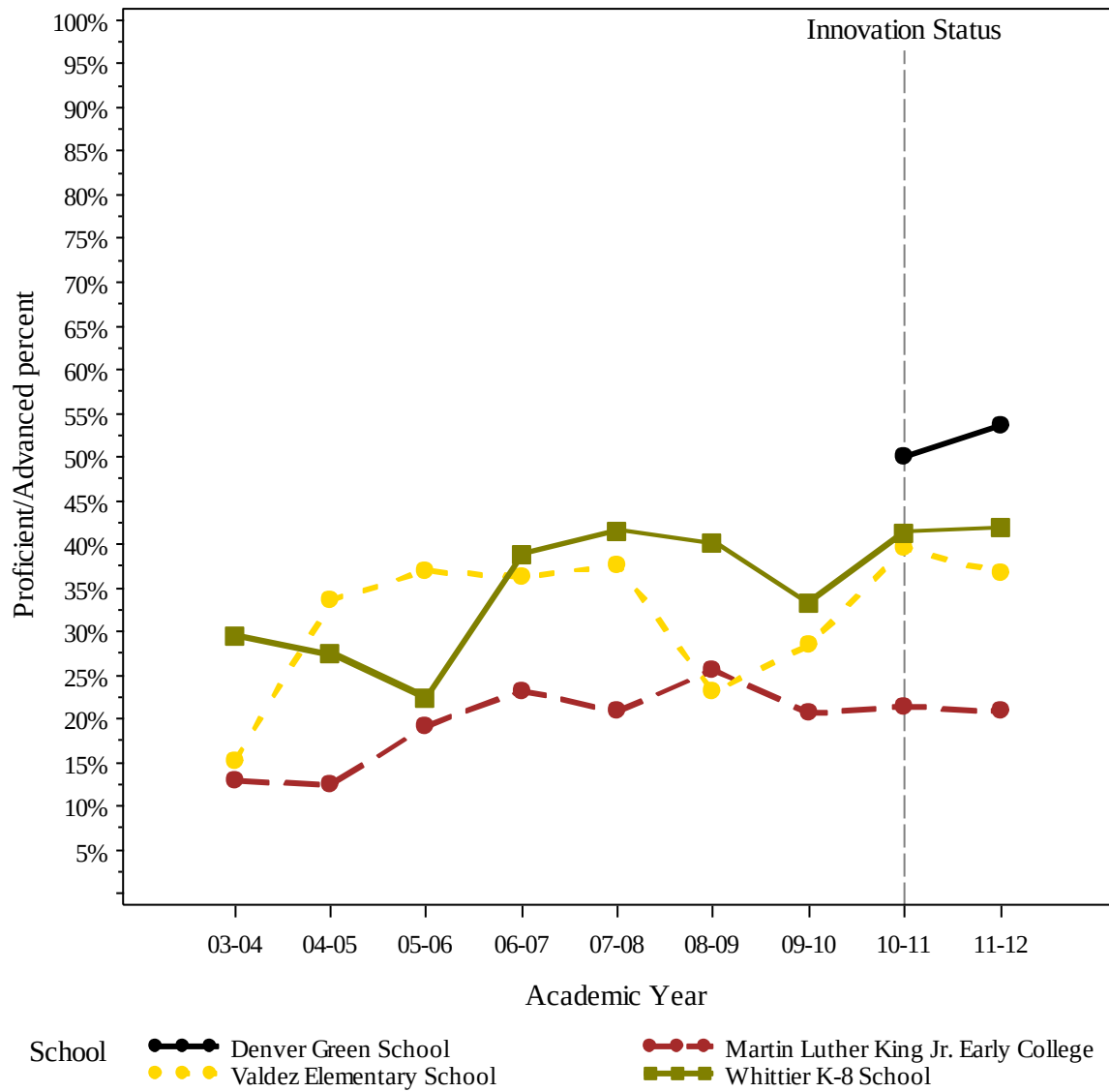
Median Growth Percentile in Math for the 2010 cohort

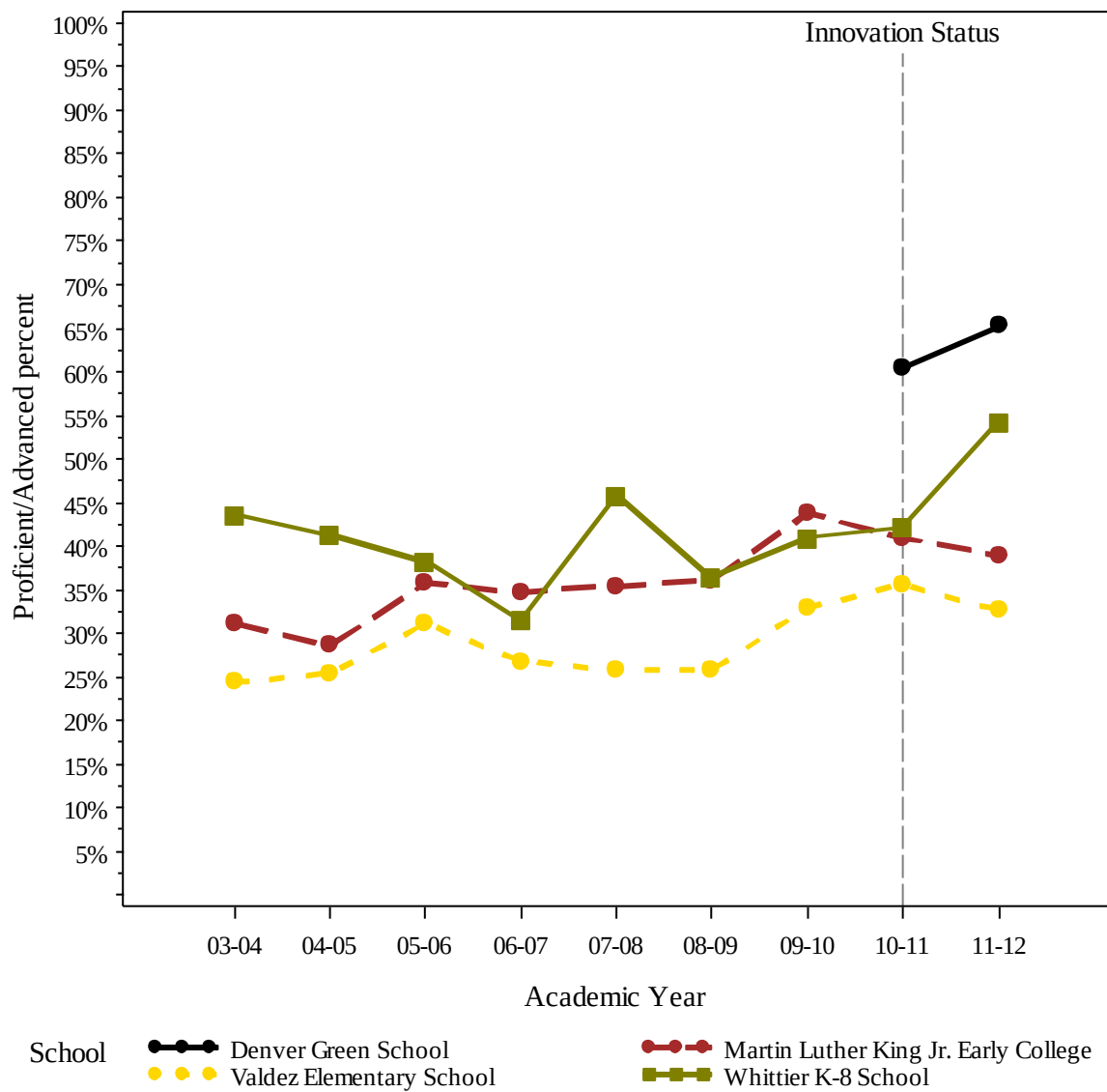
Median Growth Percentile in Reading for the 2010 cohort



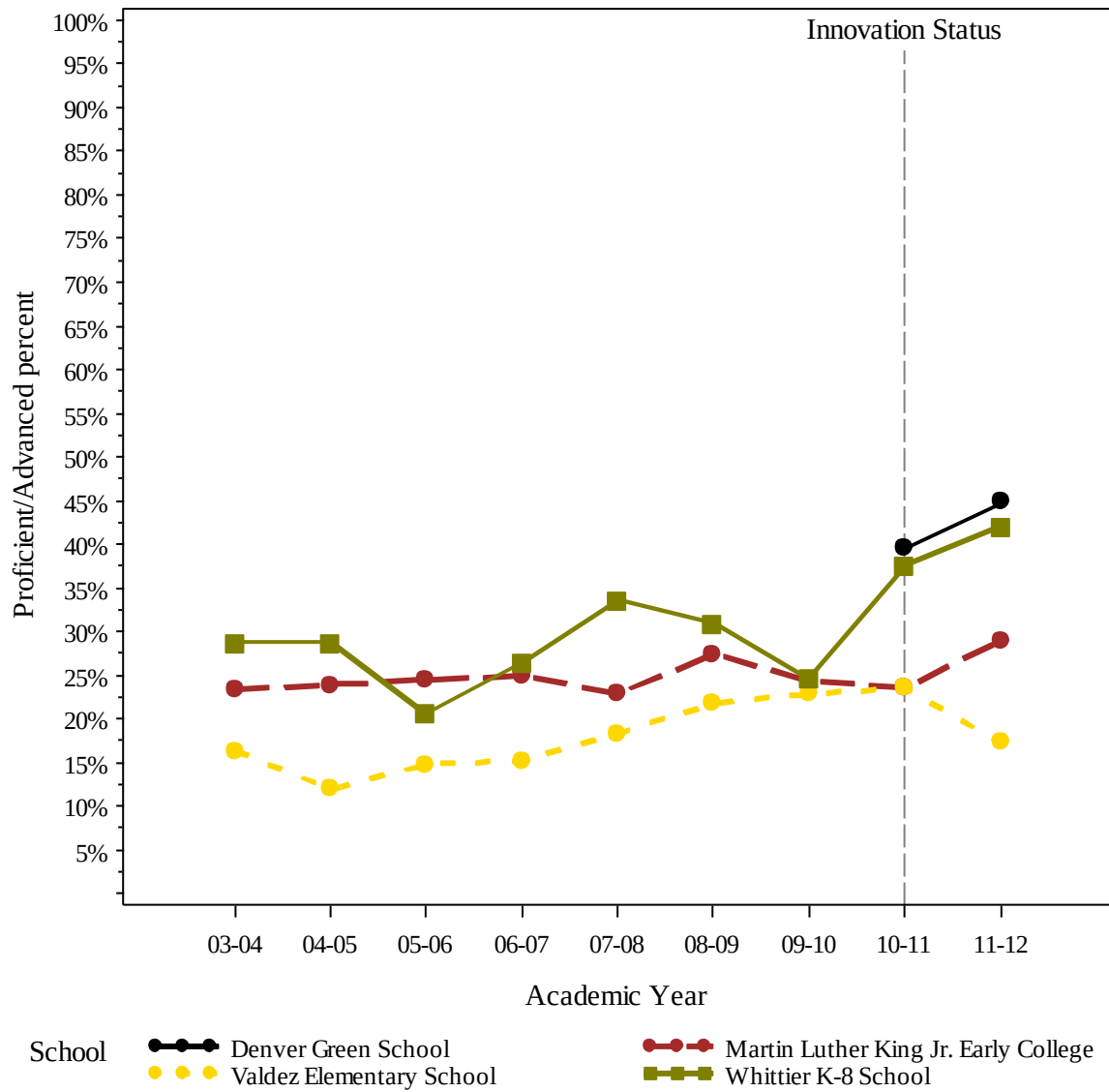
Median Growth Percentile in Writing for the 2010 cohort

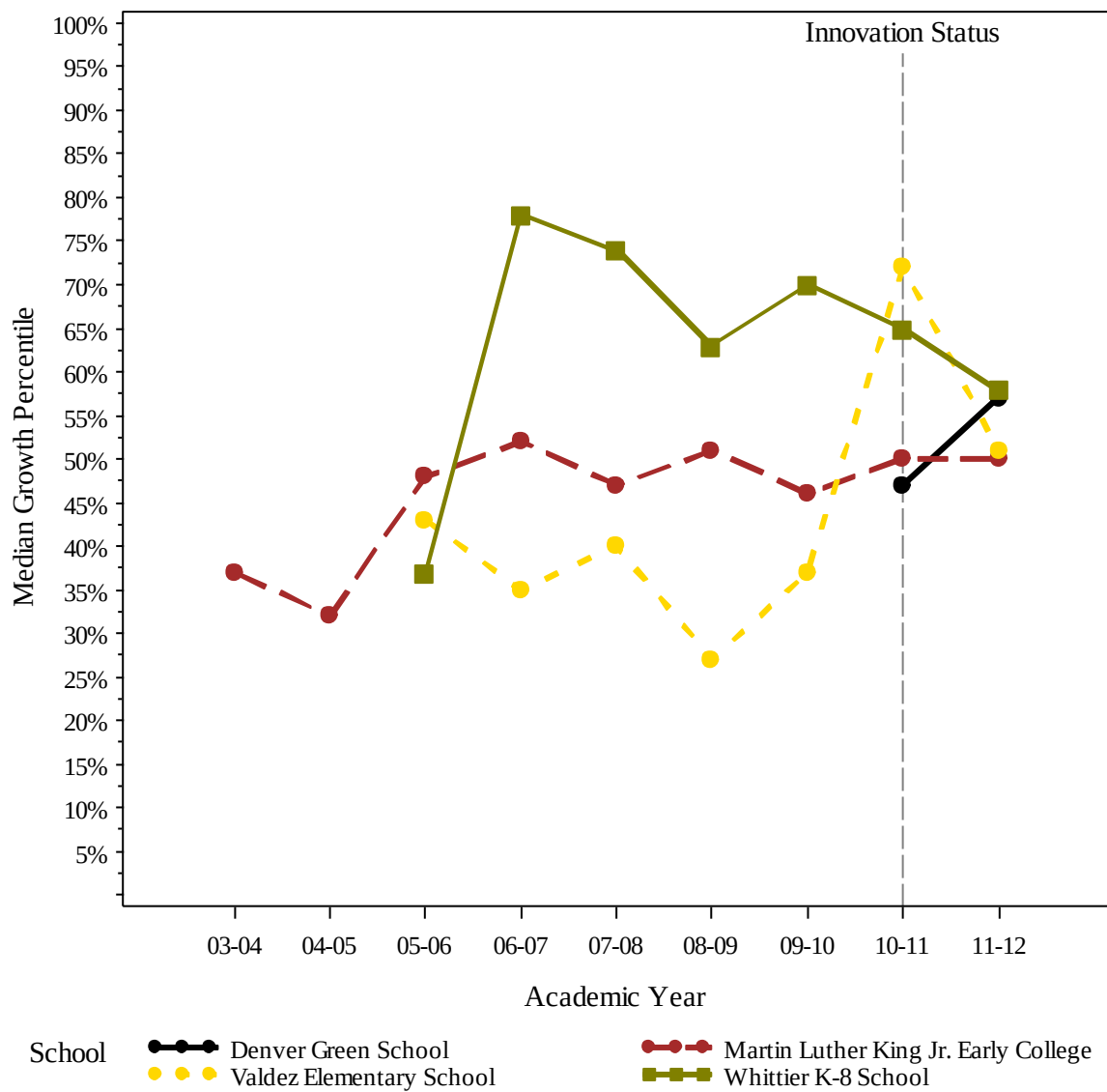
Percent Proficient/Advanced in Math for the 2011 cohort



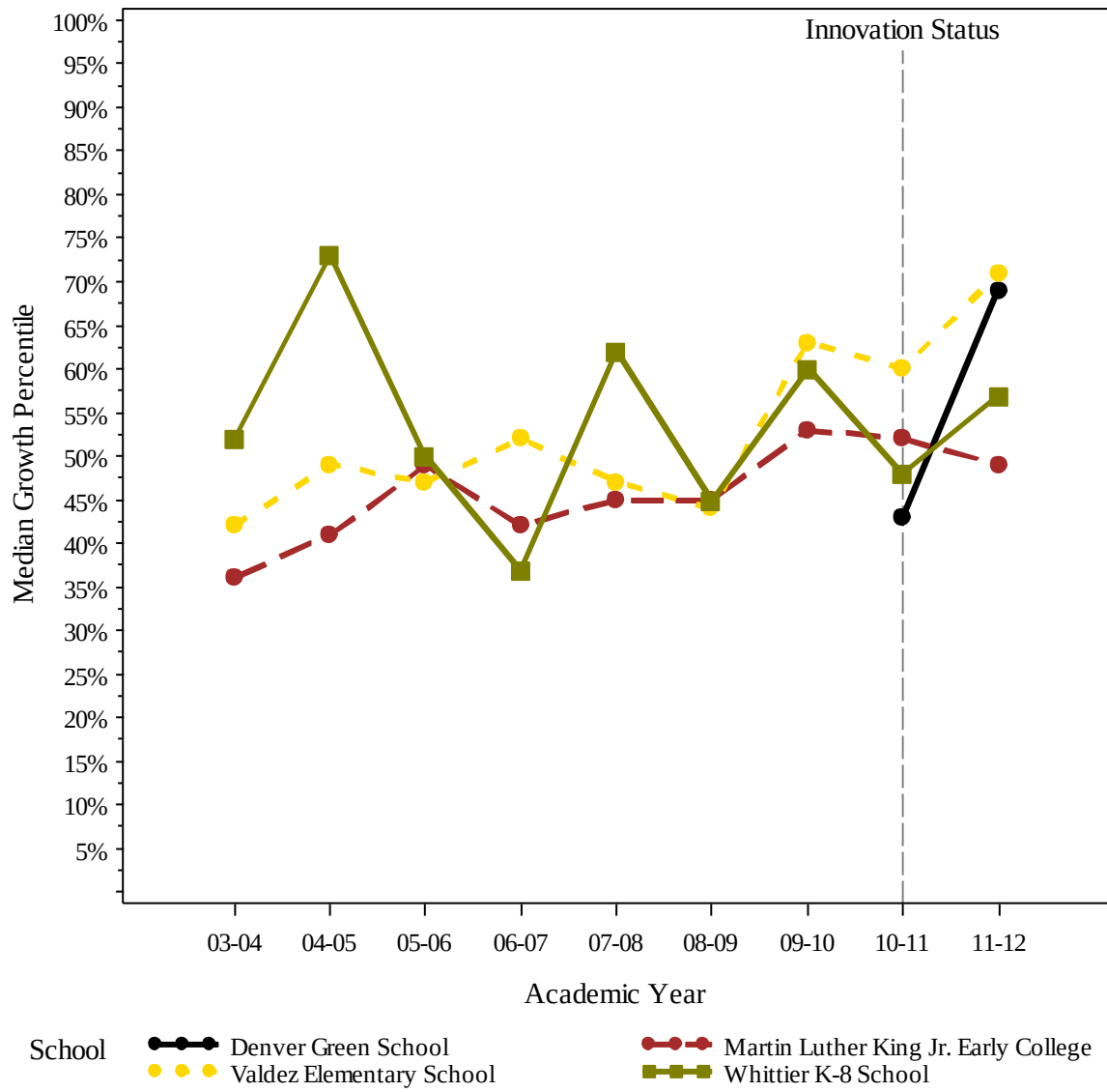
Percent Proficient/Advanced in Reading for the 2011 cohort

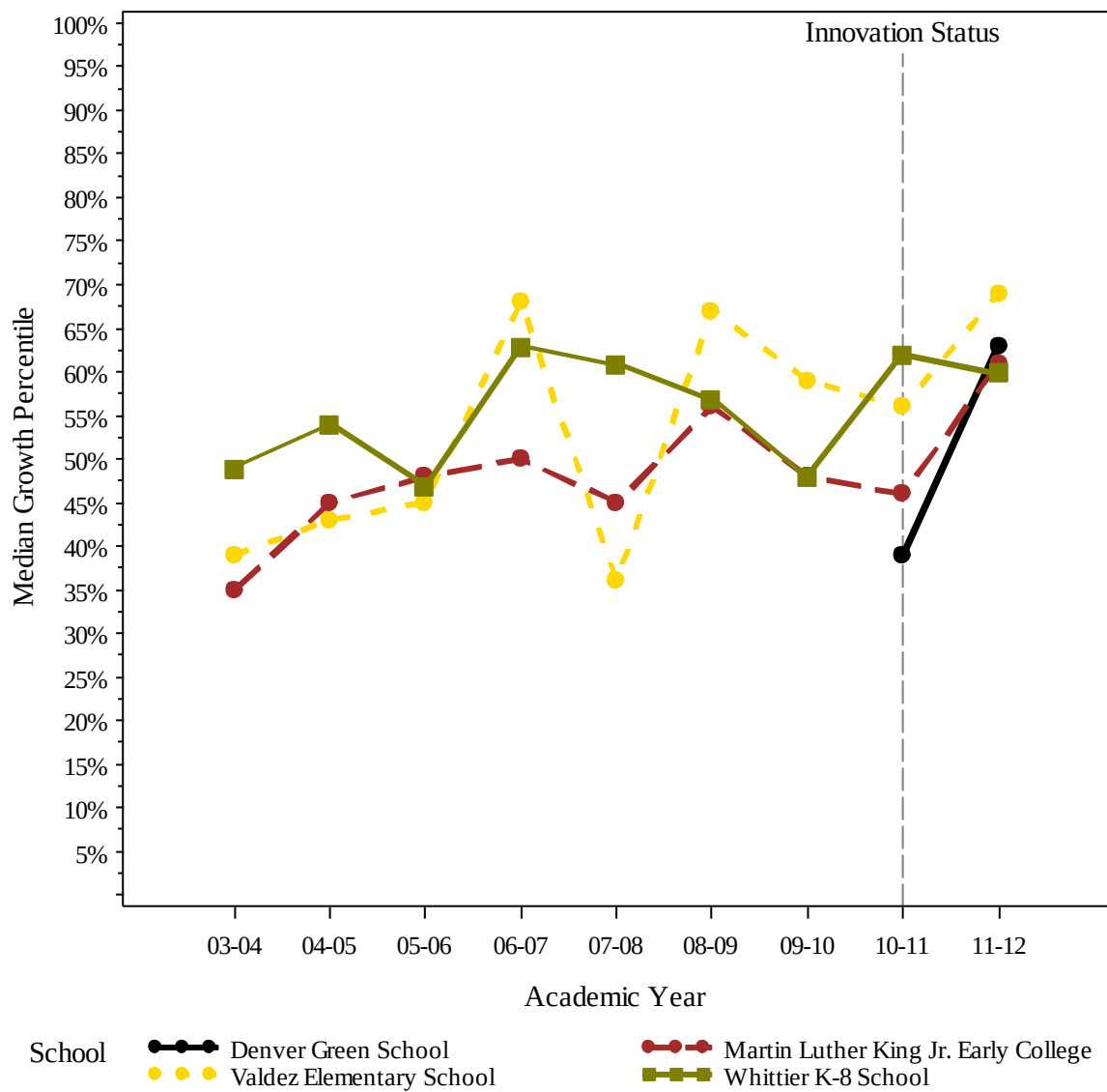
Percent Proficient/Advanced in Writing for the 2011 cohort



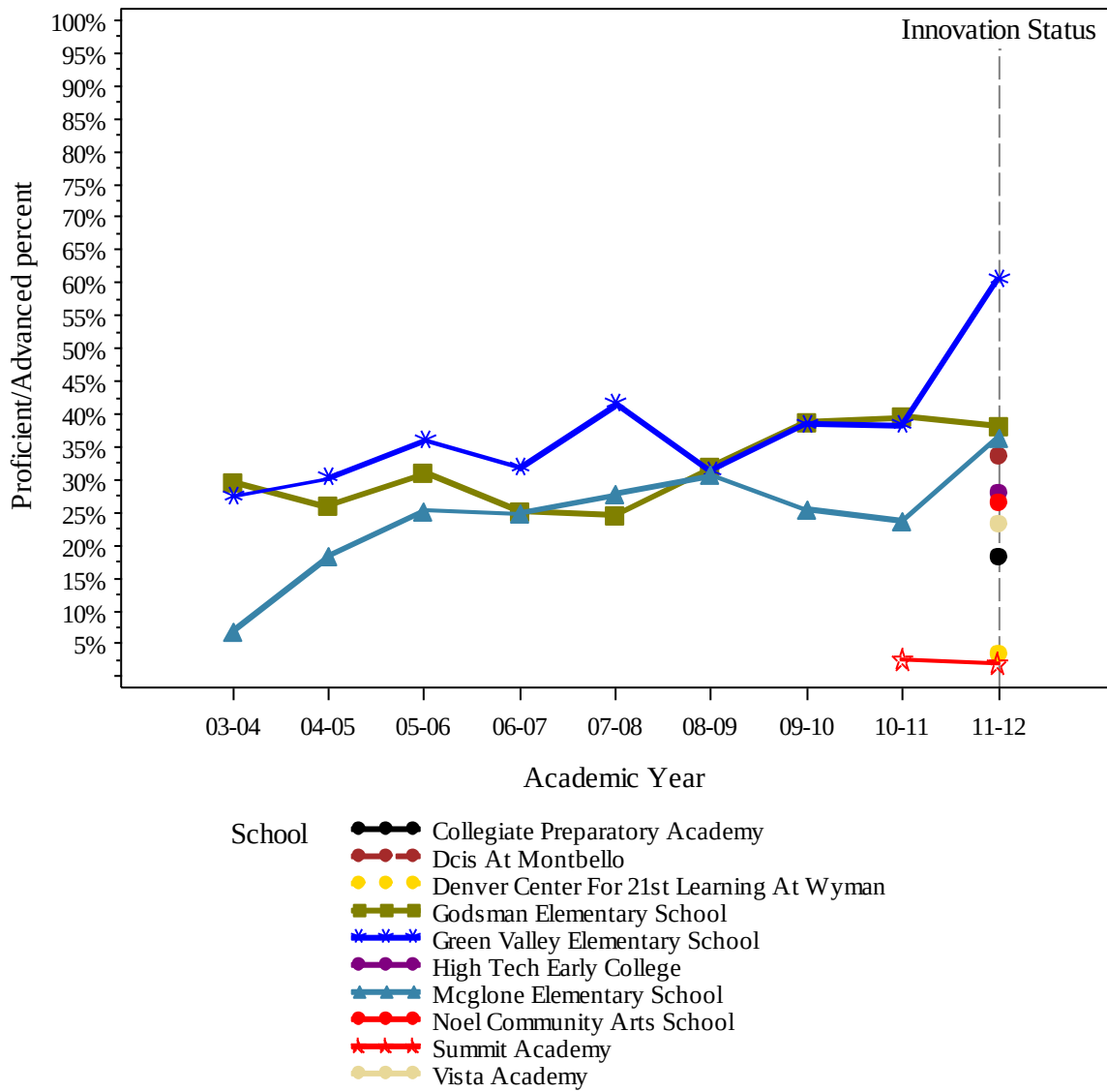
Median Growth Percentile in Math for the 2011 cohort

Median Growth Percentile in Reading for the 2011 cohort

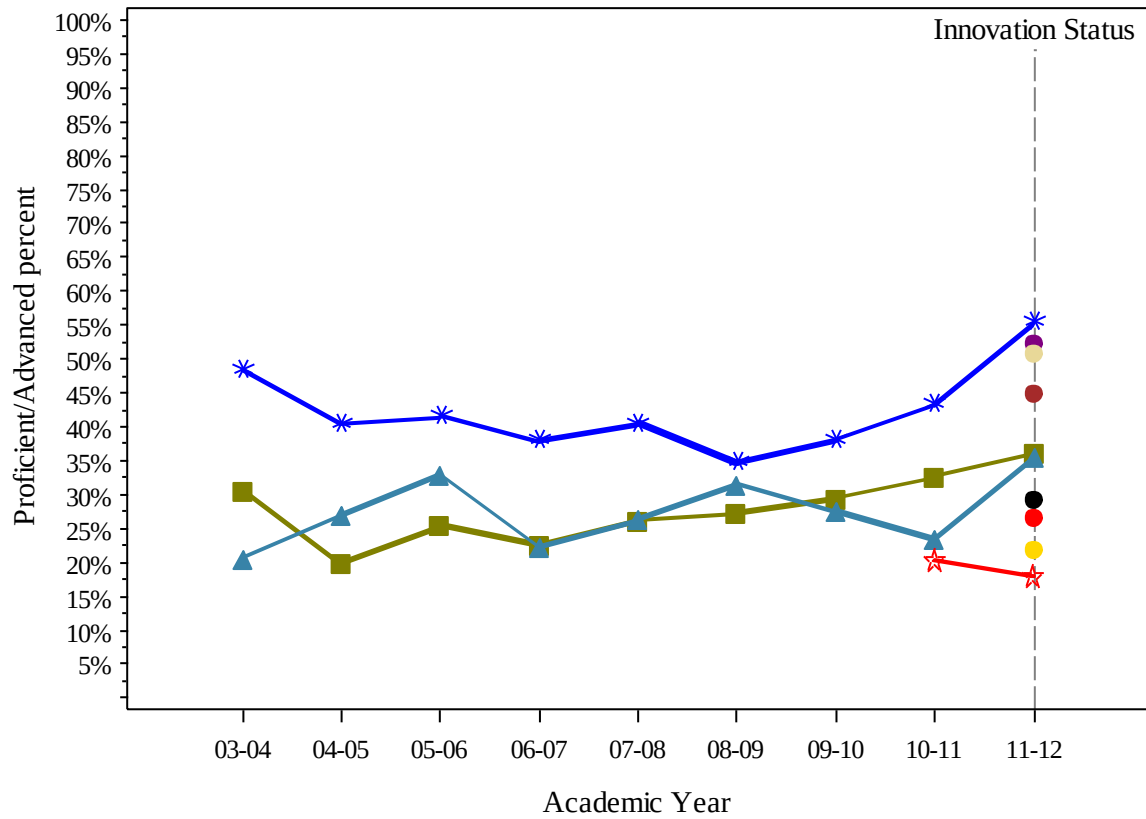


Median Growth Percentile in Writing for the 2011 cohort

Percent Proficient/Advanced in Math for the 2012 cohort

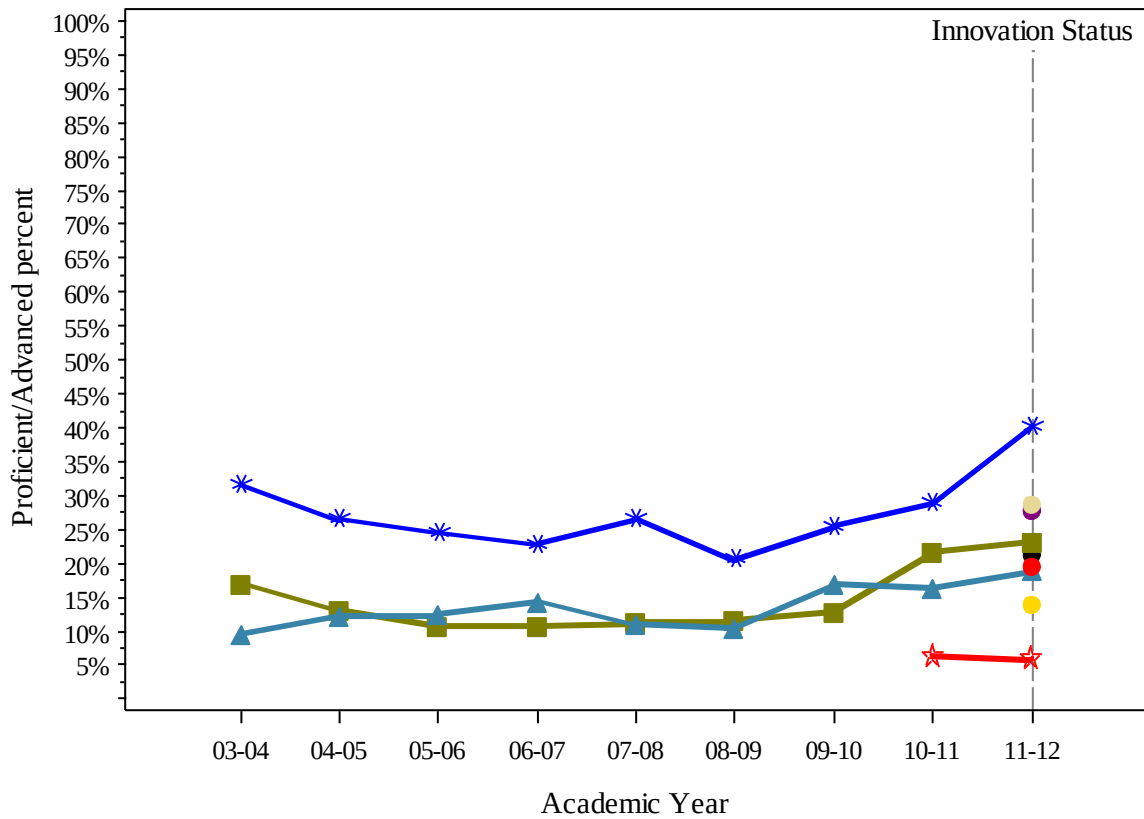


Percent Proficient/Advanced in Reading for the 2012 cohort



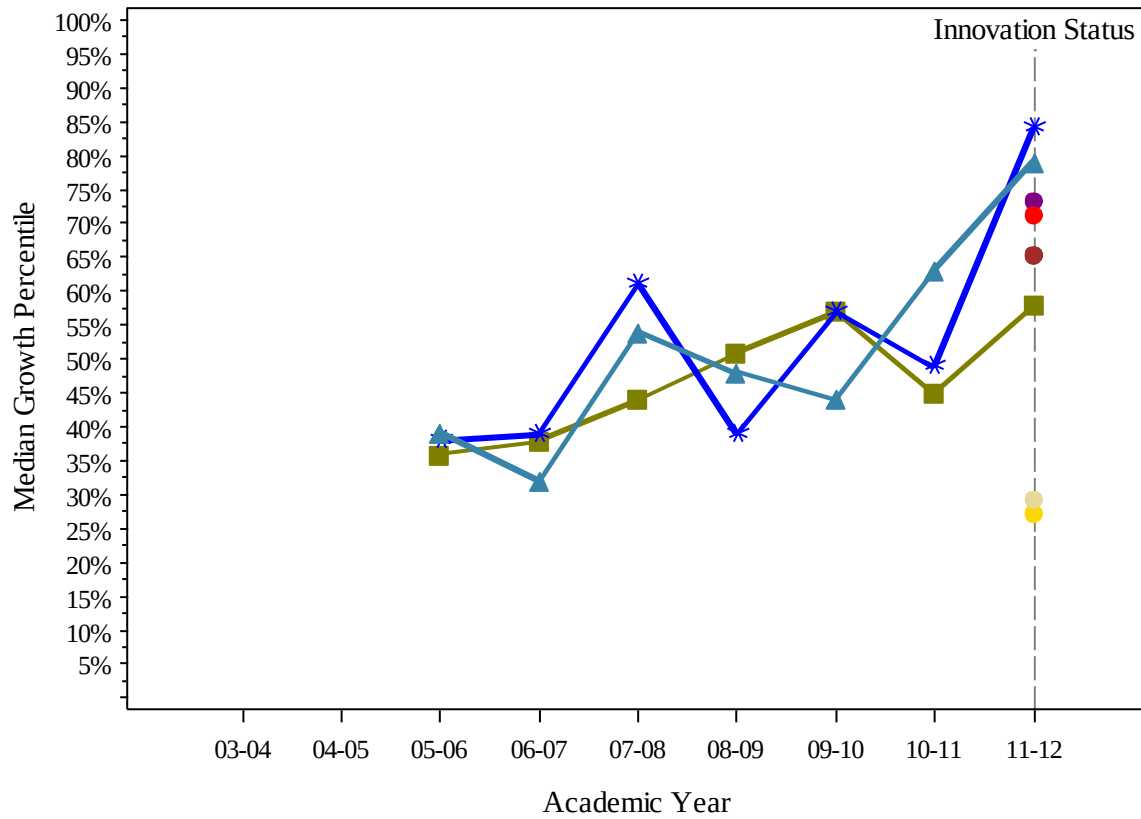
- School
- Collegiate Preparatory Academy
 - Dcis At Montbello
 - Denver Center For 21st Learning At Wyman
 - Godsman Elementary School
 - *●* Green Valley Elementary School
 - High Tech Early College
 - ▲●▲ Mcglone Elementary School
 - Noel Community Arts School
 - *●* Summit Academy
 - Vista Academy

Percent Proficient/Advanced in Writing for the 2012 cohort



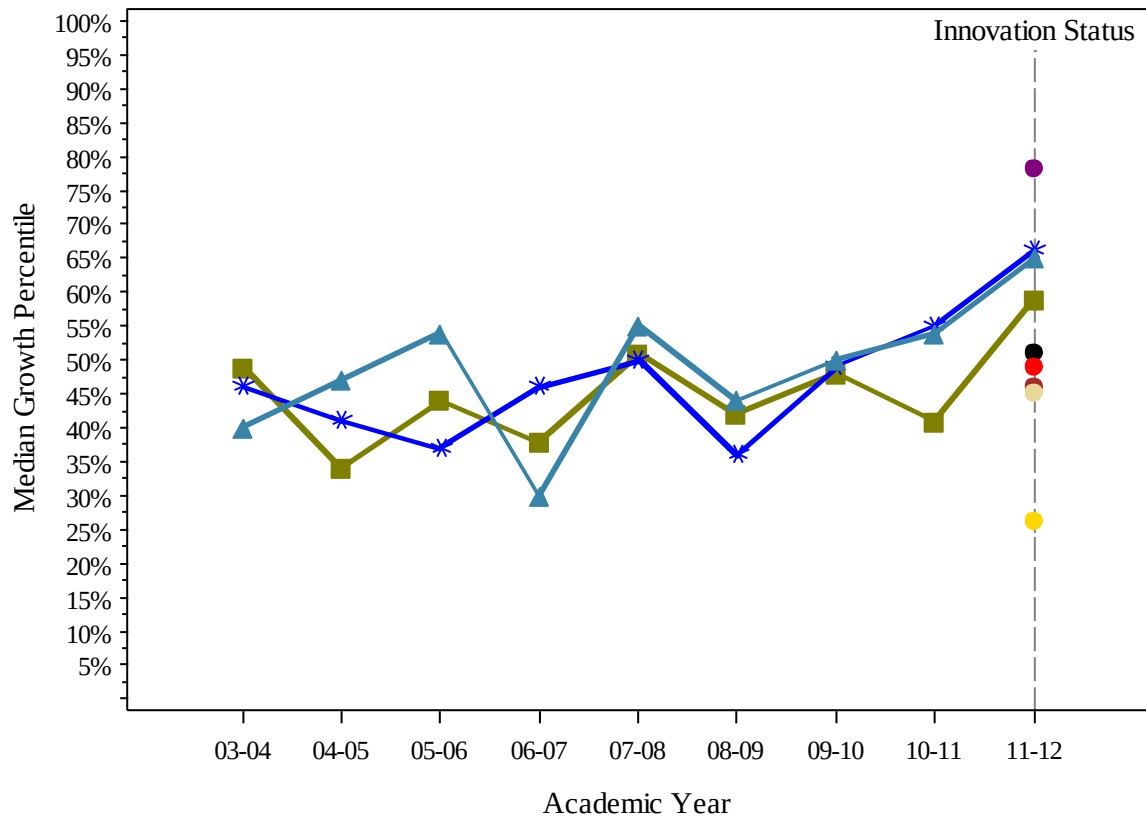
- School
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 - Dcis At Montbello
 - Denver Center For 21st Learning At Wyman
 - Godsman Elementary School
 - *●* Green Valley Elementary School
 - High Tech Early College
 - ▲●▲ Mcglone Elementary School
 - Noel Community Arts School
 - *●* Summit Academy
 - Vista Academy

Median Growth Percentile in Math for the 2012 cohort



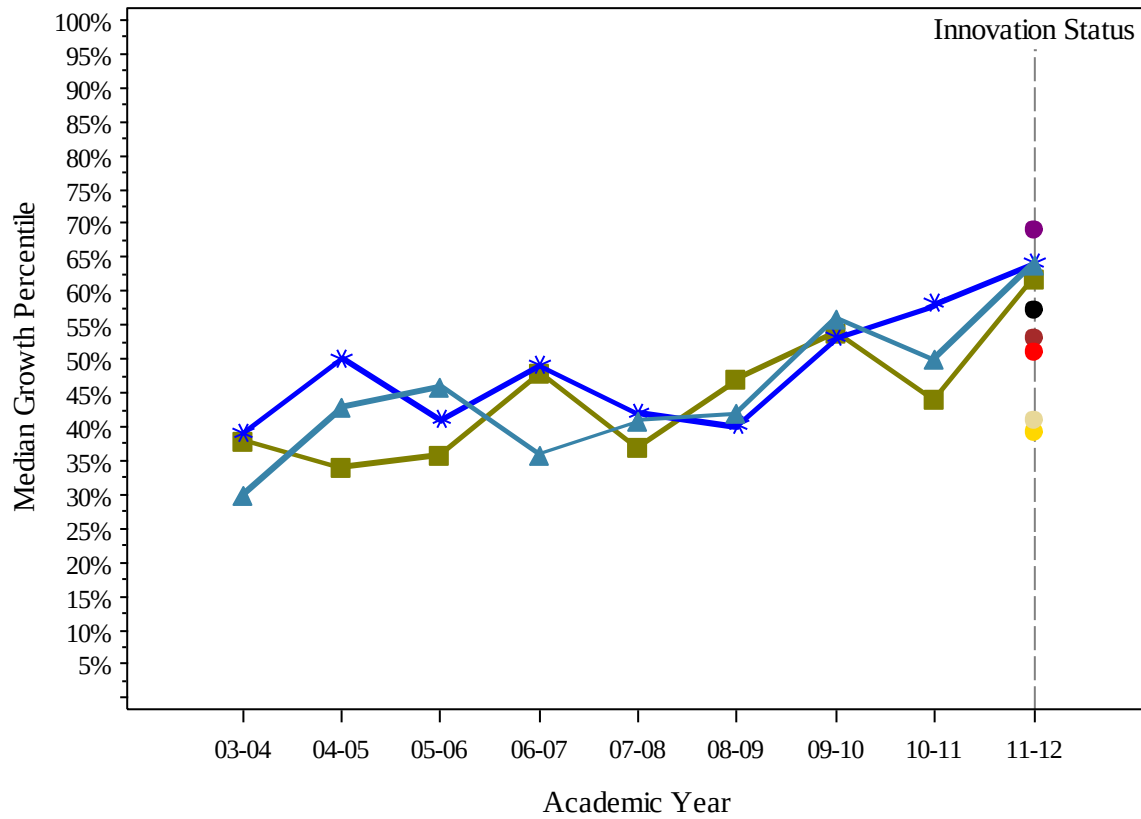
- School
- Collegiate Preparatory Academy
 - Dcis At Montbello
 - Denver Center For 21st Learning At Wyman
 - Godsman Elementary School
 - *●* Green Valley Elementary School
 - High Tech Early College
 - ▲●▲ Mcglone Elementary School
 - Noel Community Arts School
 - ★●★ Summit Academy
 - Vista Academy

Median Growth Percentile in Reading for the 2012 cohort

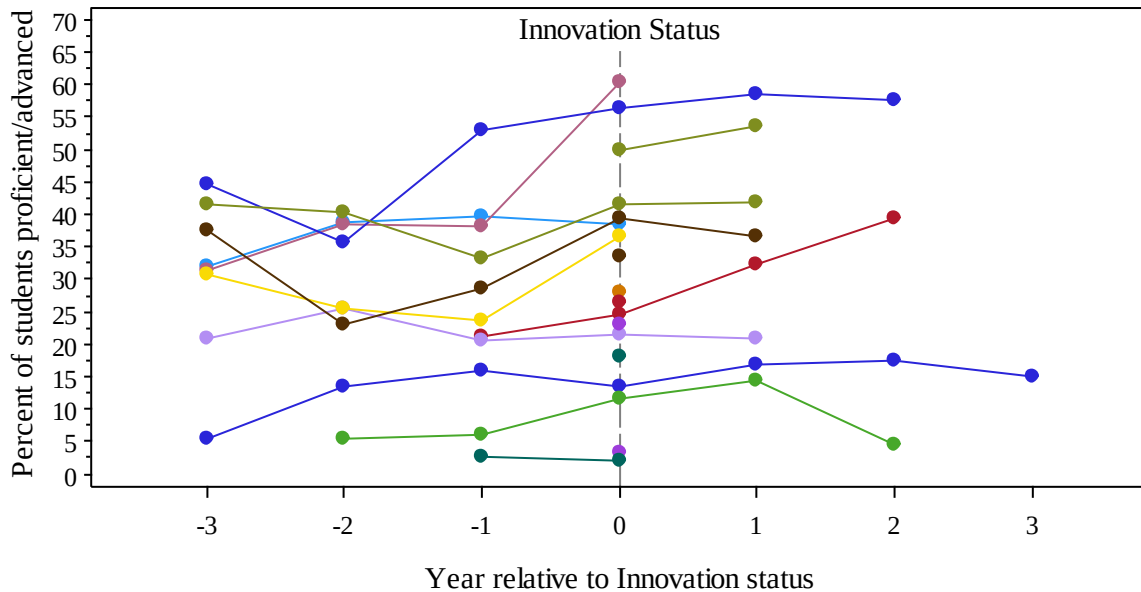


- School
- Collegiate Preparatory Academy
 - Dcis At Montbello
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 - High Tech Early College
 - Mcglone Elementary School
 - Noel Community Arts School
 - *●* Summit Academy
 - Vista Academy

Median Growth Percentile in Writing for the 2012 cohort

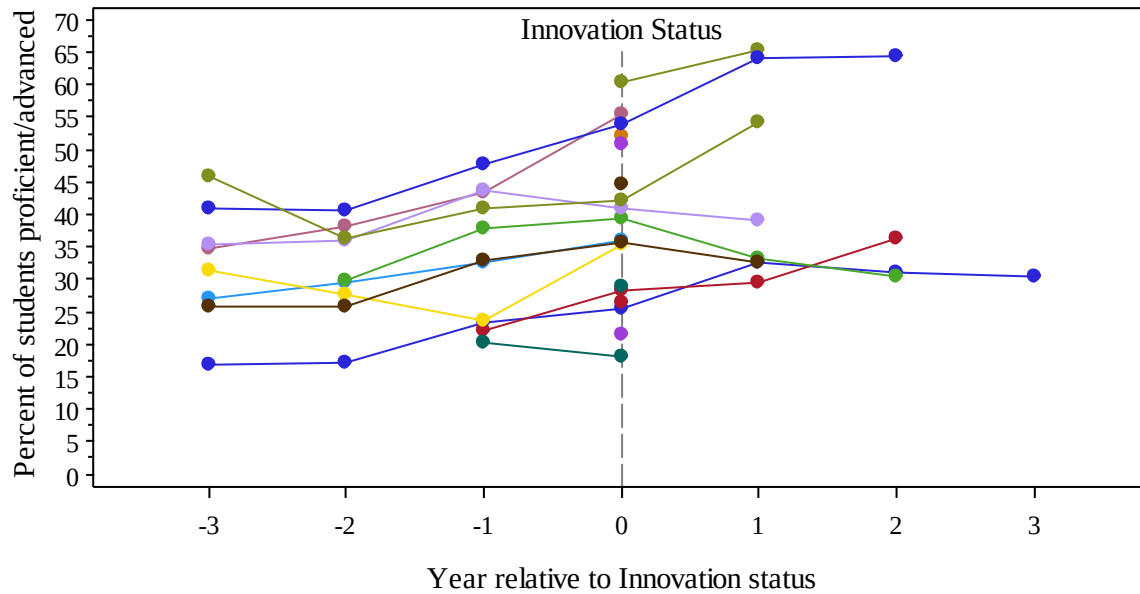


- School
- Collegiate Preparatory Academy
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 - Godsman Elementary School
 - *●* Green Valley Elementary School
 - High Tech Early College
 - ▲●▲ Mcglone Elementary School
 - Noel Community Arts School
 - ★●★ Summit Academy
 - Vista Academy

Appendix G: Innovation Schools TCAP/CSAP Results By Year Relative to Innovation Status**Percent Proficient/Advanced in Math**

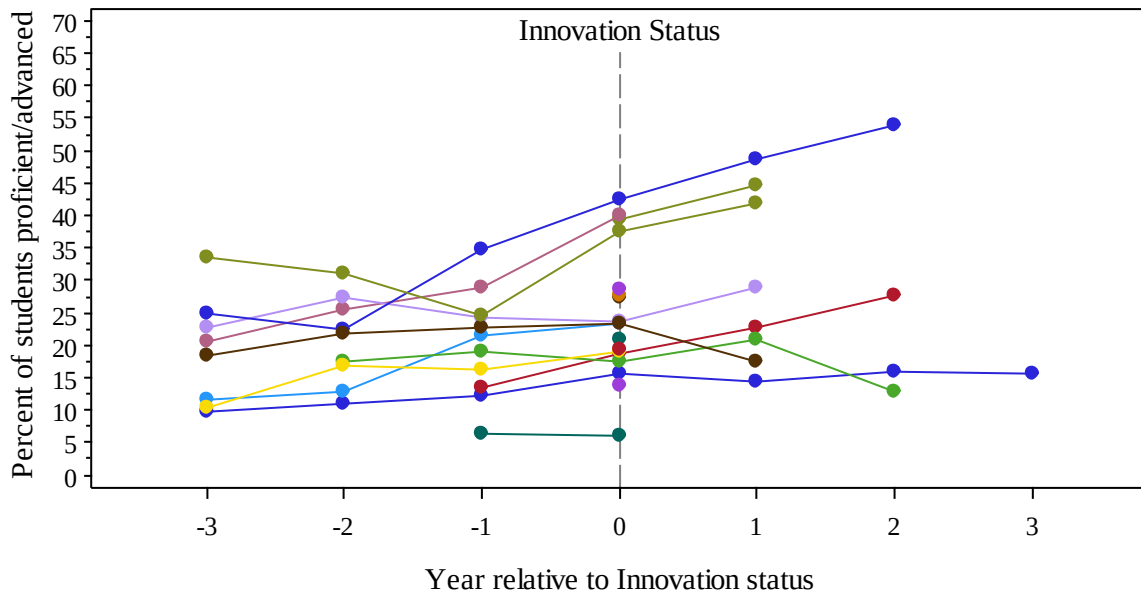
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 - Cole Arts And Science Academy
 - Collegiate Preparatory Academy
 - Dcis At Montbello
 - Denver Center For 21st Learning At Wyman
 - Denver Green School
 - Godsman Elementary School
 - Green Valley Elementary School
 - High Tech Early College
 - Manual High School
 - Martin Luther King Jr. Early College
 - Mcglone Elementary School
 - Montclair Elementary School
 - Noel Community Arts School
 - Summit Academy
 - Valdez Elementary School
 - Vista Academy
 - Whittier K-8 School

Percent Proficient/Advanced in Reading



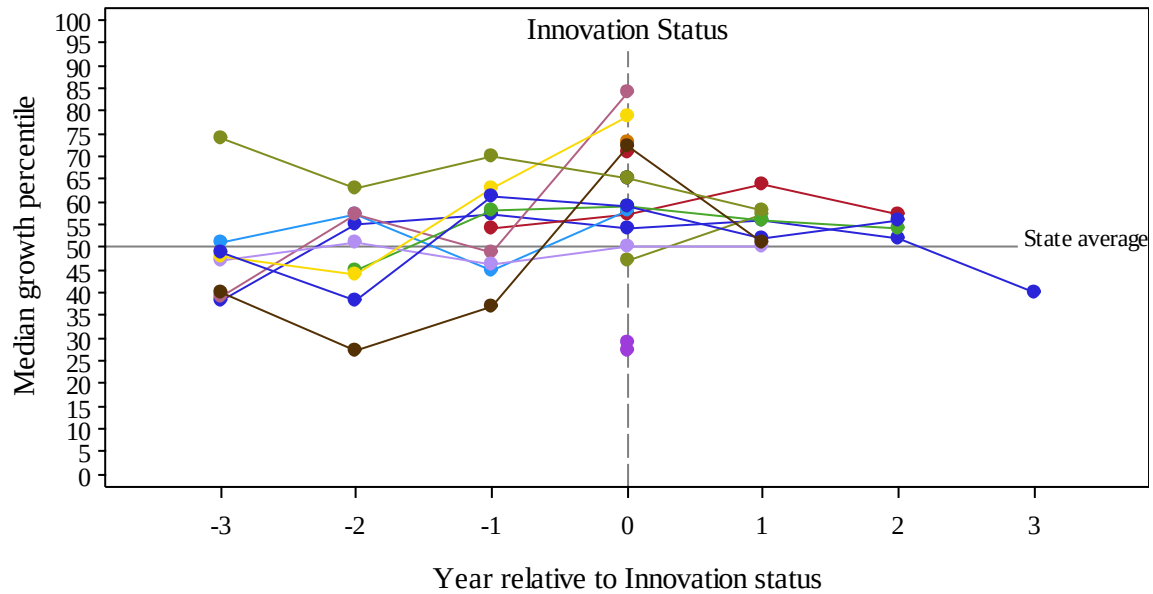
- School
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 - Cole Arts And Science Academy
 - Collegiate Preparatory Academy
 - Dcis At Montbello
 - Denver Center For 21st Learning At Wyman
 - Denver Green School
 - Godsman Elementary School
 - Green Valley Elementary School
 - High Tech Early College
 - Manual High School
 - Martin Luther King Jr. Early College
 - Mcglone Elementary School
 - Montclair Elementary School
 - Noel Community Arts School
 - Summit Academy
 - Valdez Elementary School
 - Vista Academy
 - Whittier K-8 School

Percent Proficient/Advanced in Writing



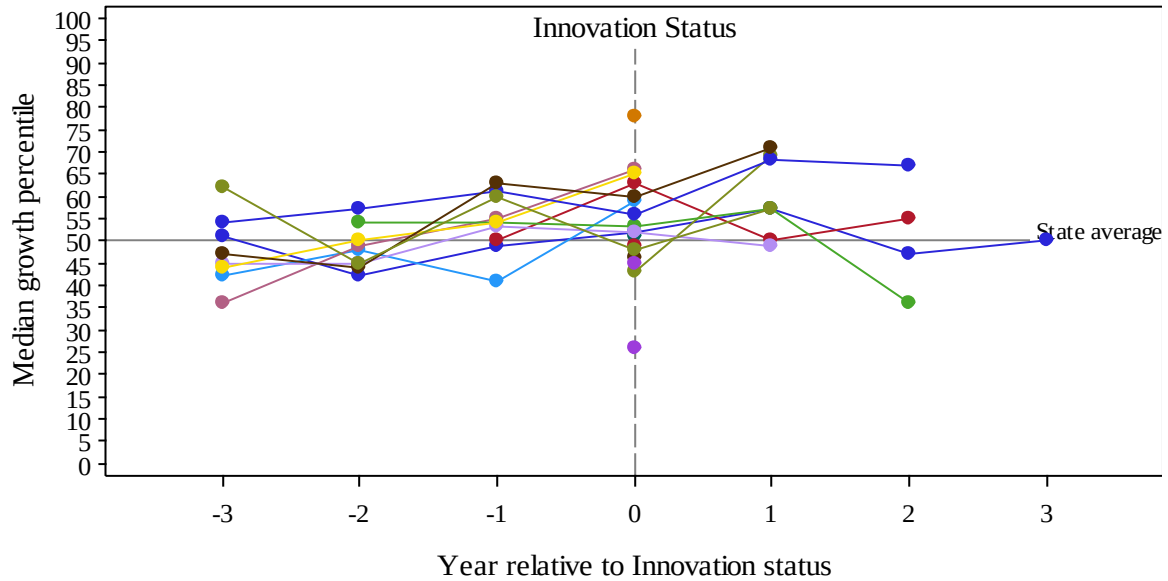
- School
- Bruce Randolph School
 - Cole Arts And Science Academy
 - Collegiate Preparatory Academy
 - Dcis At Montbello
 - Denver Center For 21st Learning At Wyman
 - Denver Green School
 - Godsman Elementary School
 - Green Valley Elementary School
 - High Tech Early College
 - Manual High School
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 - Mcglone Elementary School
 - Montclair Elementary School
 - Noel Community Arts School
 - Summit Academy
 - Valdez Elementary School
 - Vista Academy
 - Whittier K-8 School

Median Growth Percentile in Math

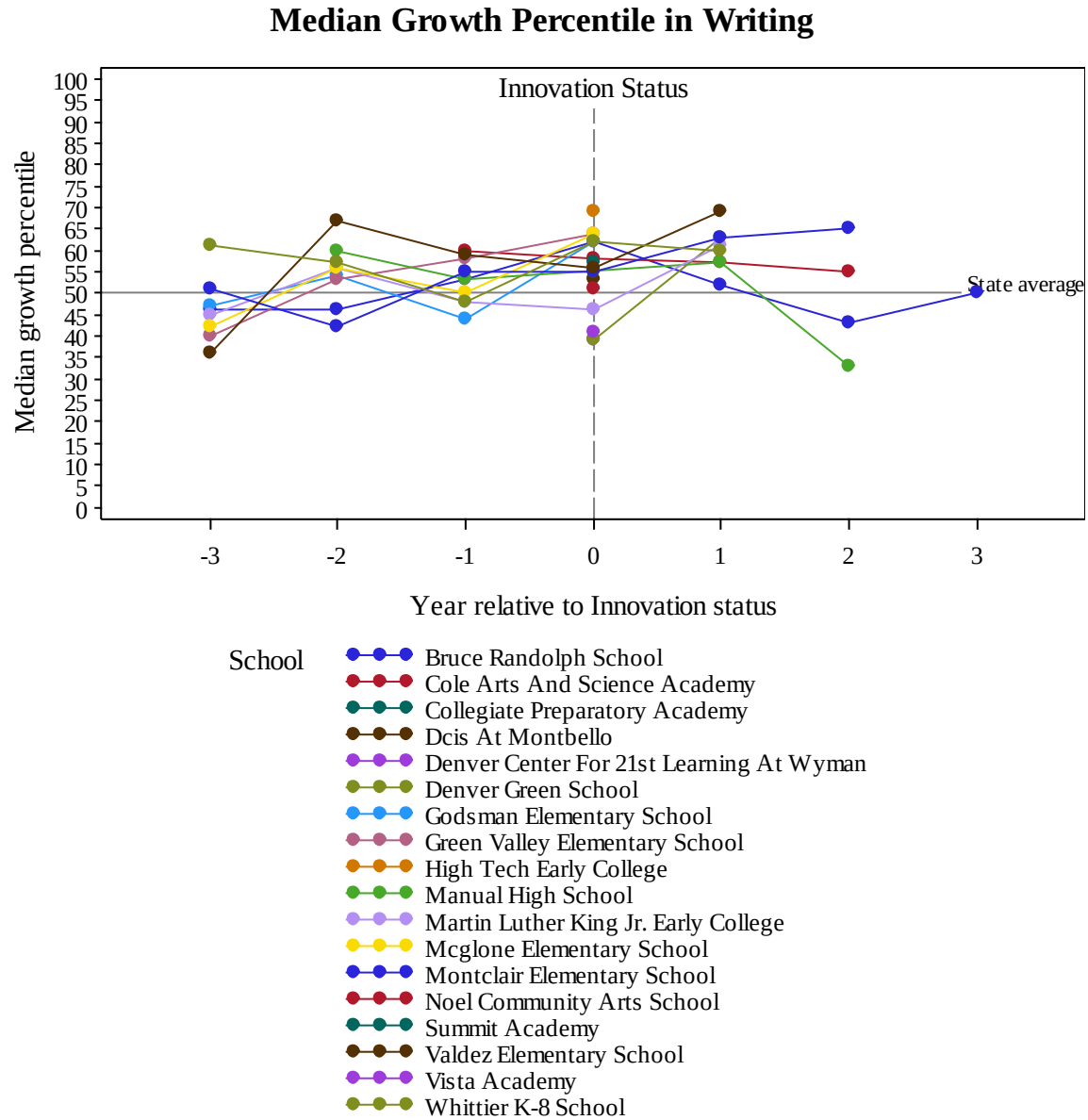


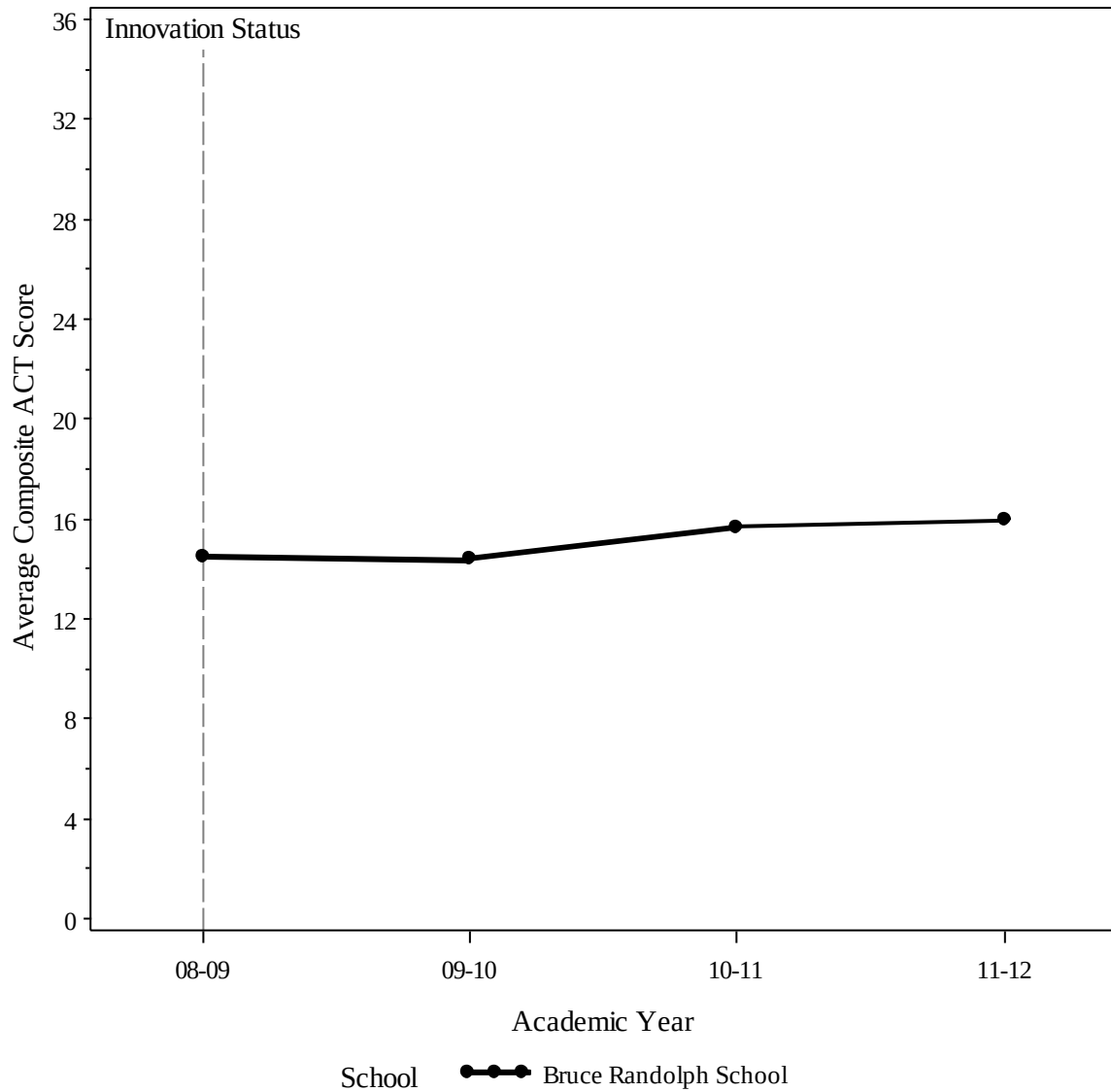
- School
- Bruce Randolph School
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 - Mcglone Elementary School
 - Montclair Elementary School
 - Noel Community Arts School
 - Summit Academy
 - Valdez Elementary School
 - Vista Academy
 - Whittier K-8 School

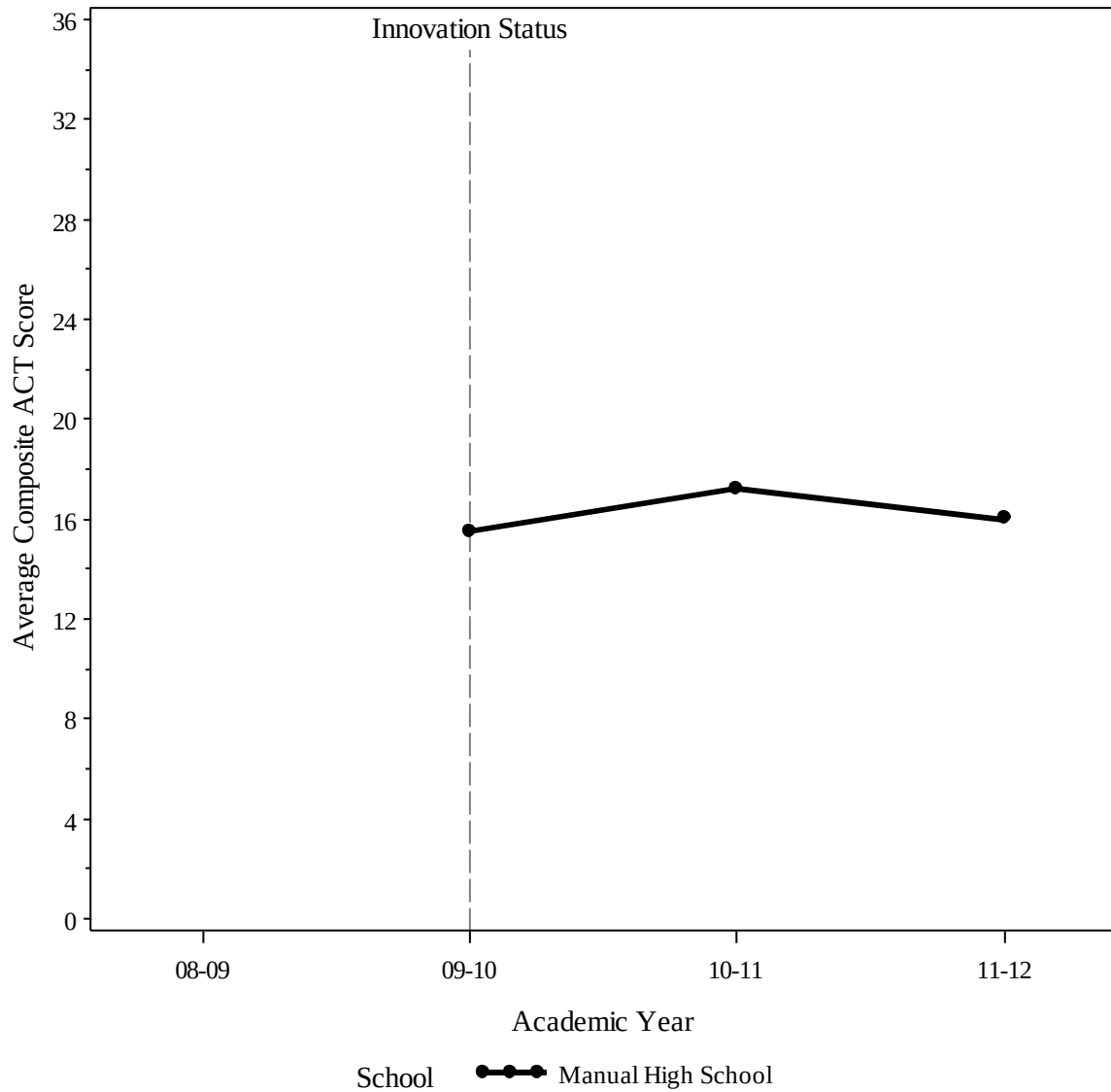
Median Growth Percentile in Reading



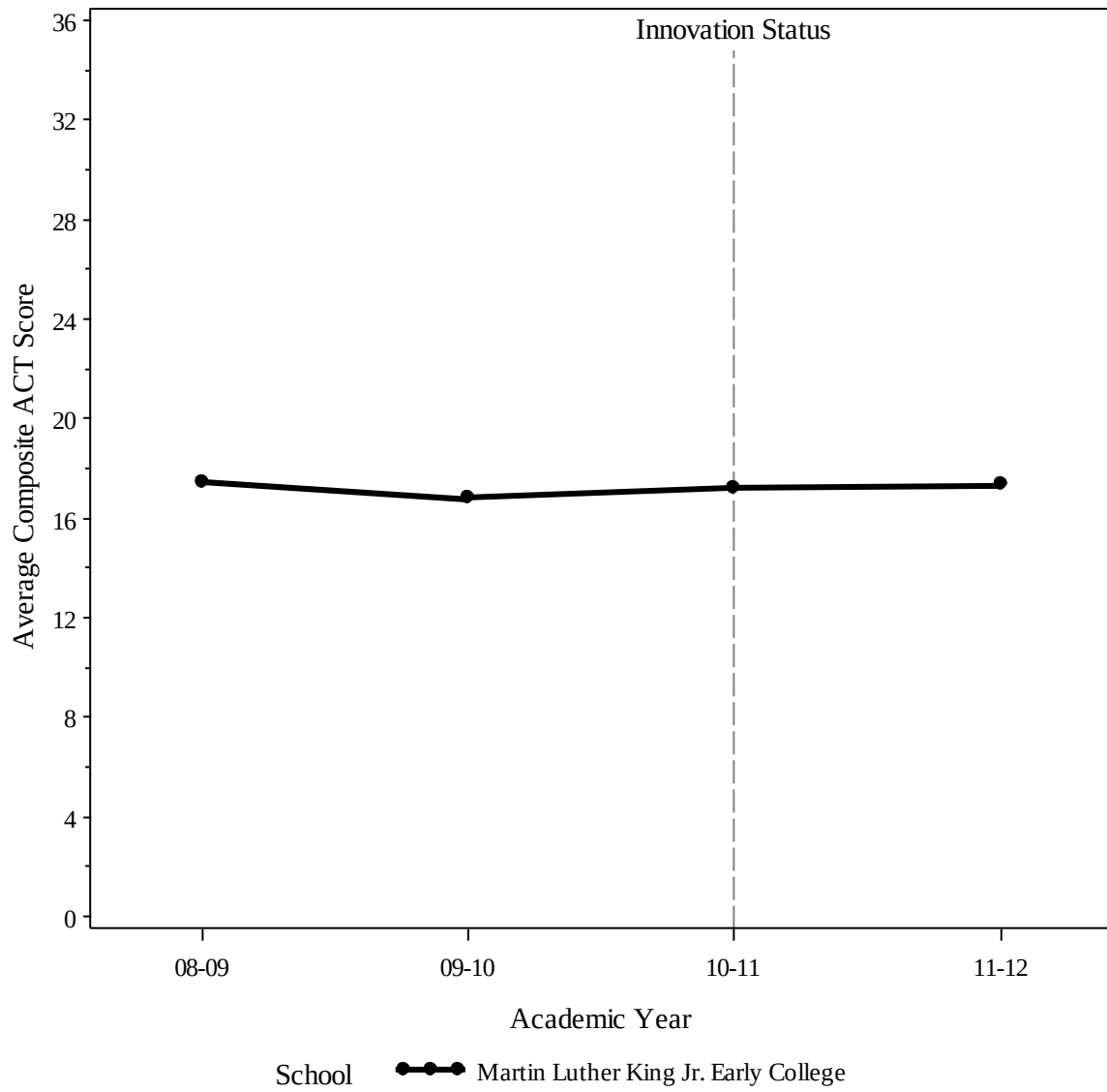
- School
- Bruce Randolph School
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 - Whittier K-8 School



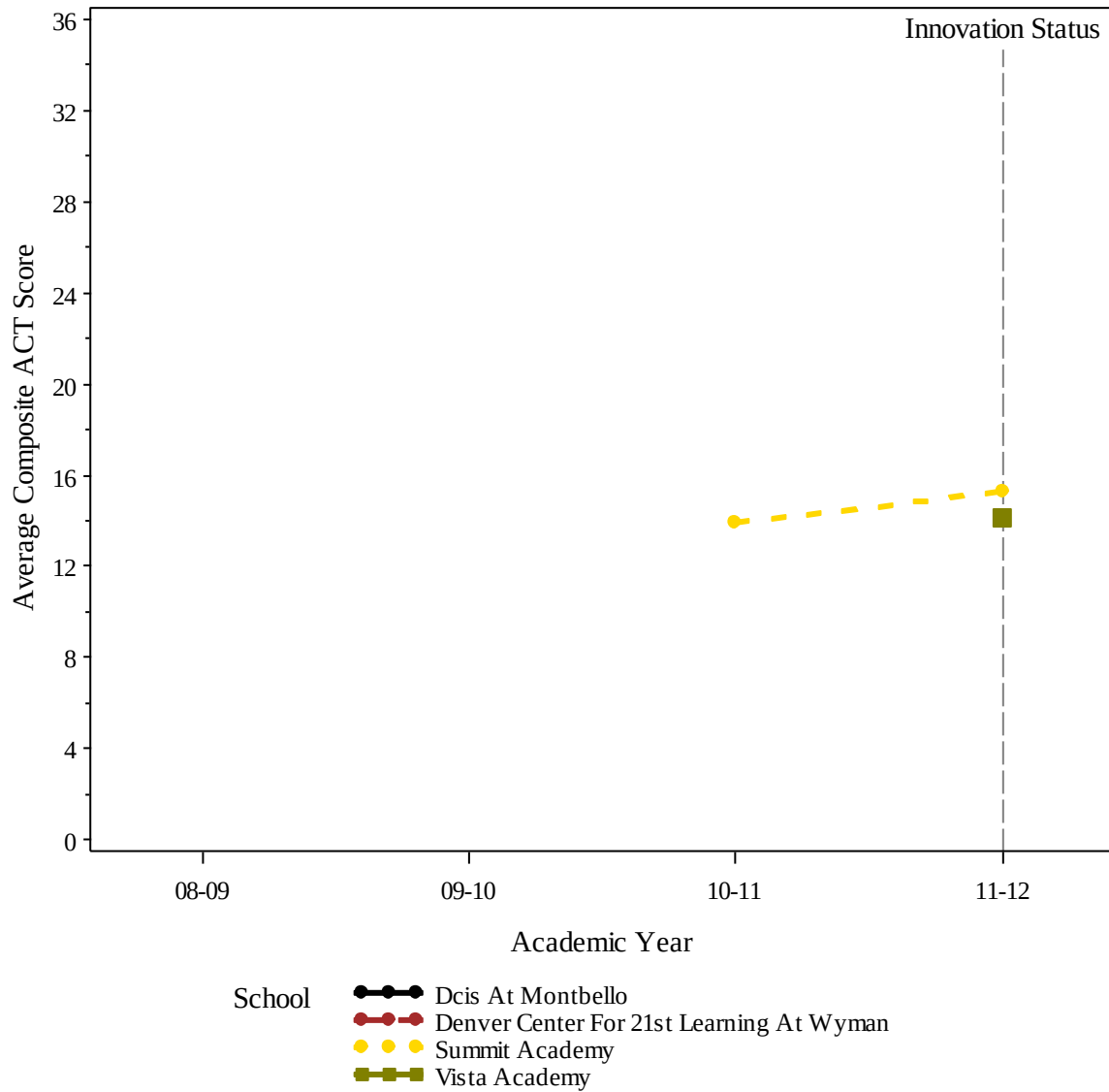
Appendix H: ACT Results by Cohort Relative to Innovation Status**Average ACT Score for the 2009 cohort**

Average ACT Score for the 2010 cohort

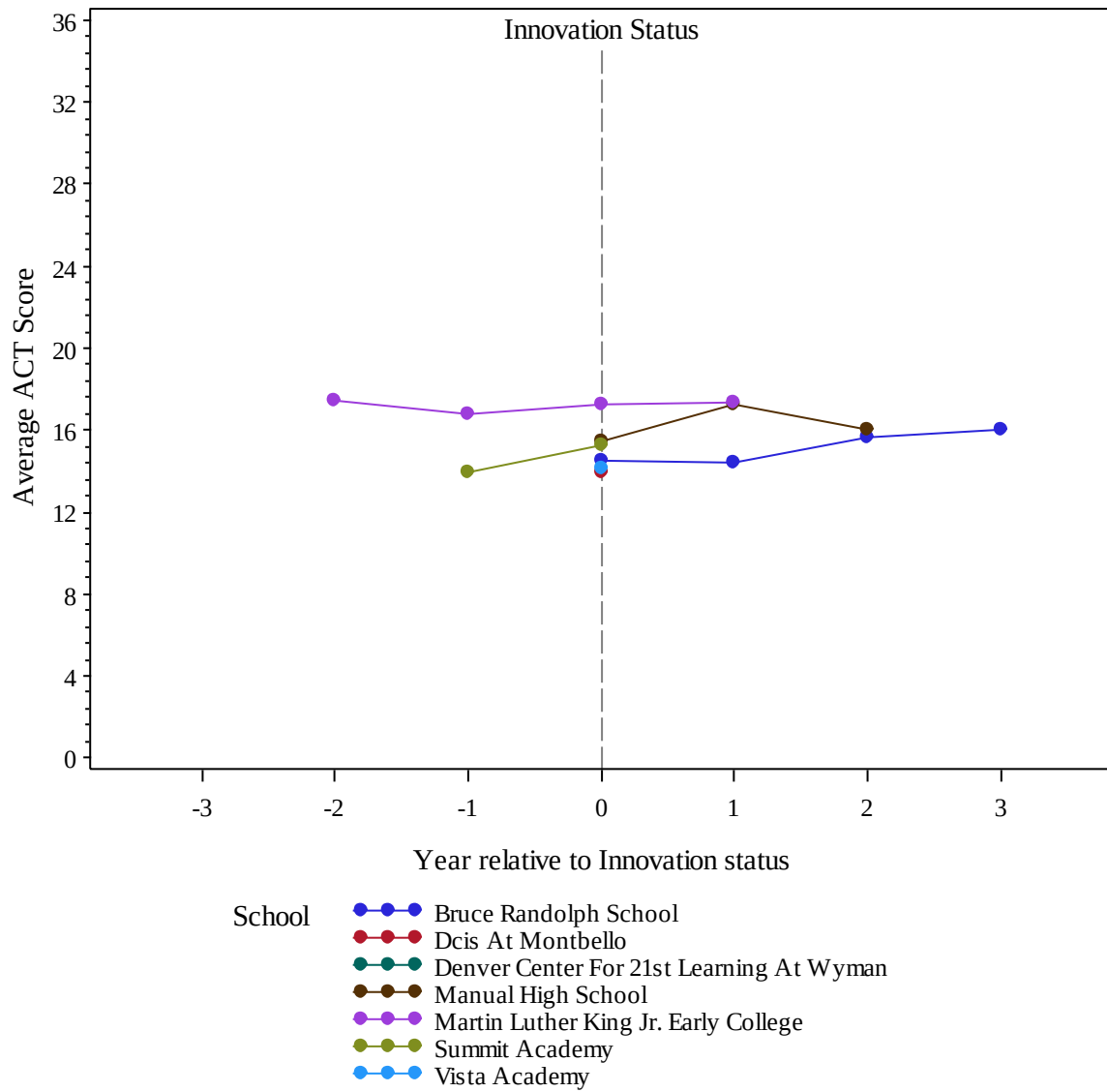
Average ACT Score for the 2011 cohort



Average ACT Score for the 2012 cohort



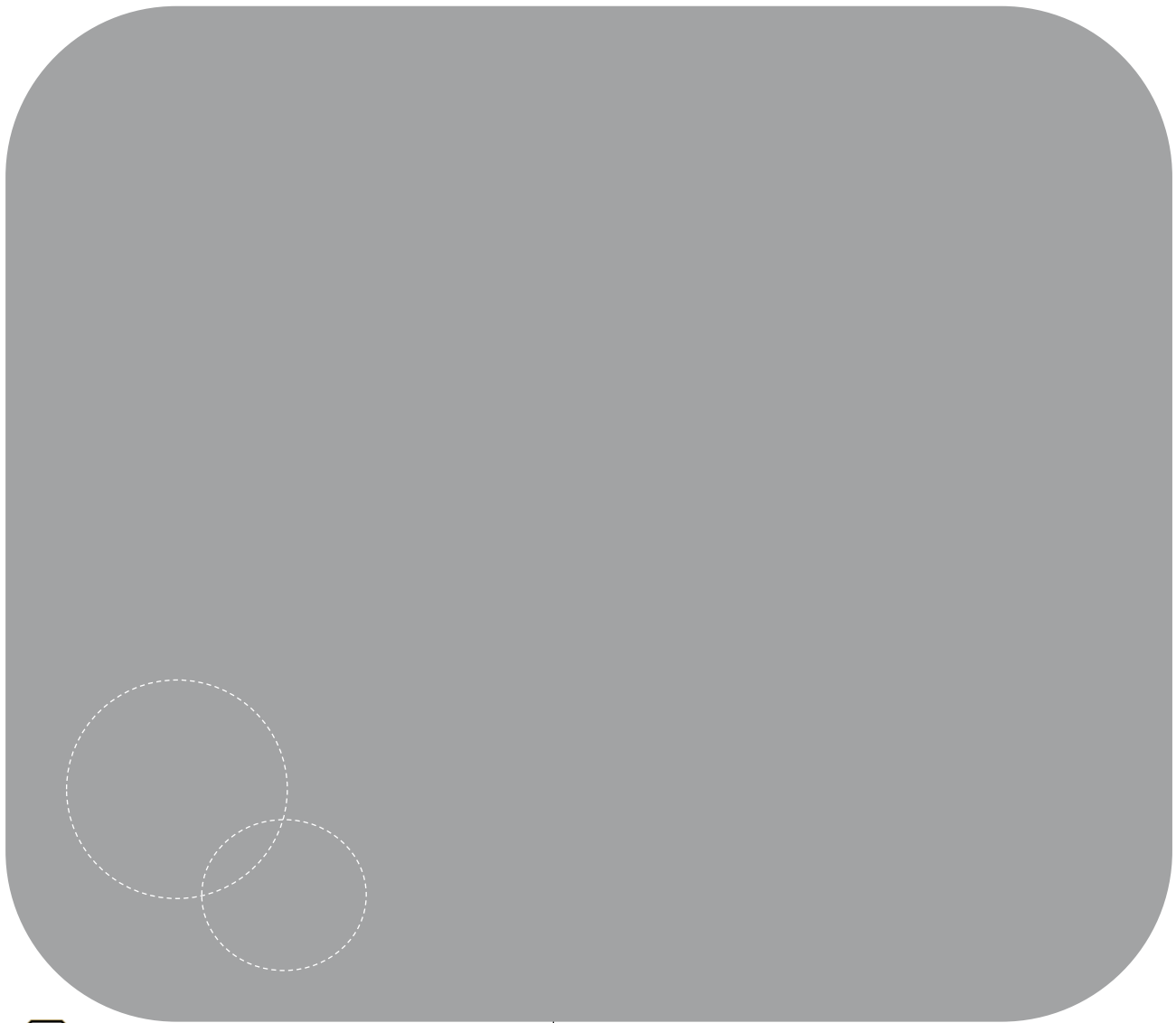
Average Composite ACT Score



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