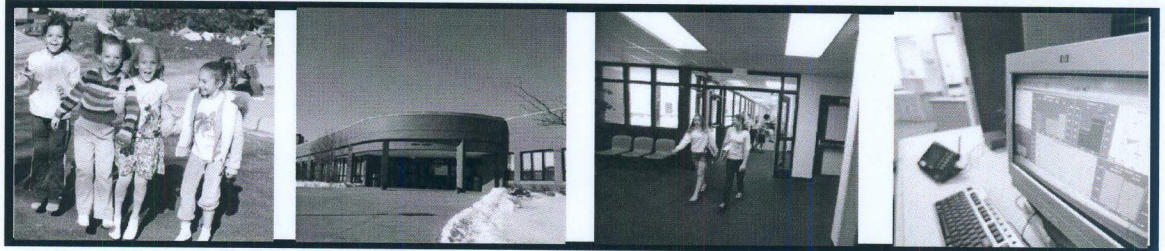


NORTH BOONE COMMUNITY UNIT SCHOOL DISTRICT 200



DISTRICT AND SCHOOL GROWTH EVALUATION

July 2012



North Boone CUSD 200 Growth Evaluation

Executive Summary

Purpose

The purpose of this report is to examine student growth in CUSD 200 during the 2011-2012 school year.

Summary of Findings

Based on the analysis of student ISAT, MAP and AIMSWeb data presented in this report, results suggest that:

- *District Grade-level Growth* - Overall growth across most grades and subjects was considered typical as compared with previous district growth with the exception of 4th and 7th grade math in which students achieved higher than expected growth. In addition, students in 3rd grade reading achieved lower than expected growth.
- *School-level Growth* - Overall growth across the entire district for all schools and subjects was considered typical as compared with previous district growth with the exception of students at Manchester Elementary who achieved higher than expected growth in math.
- *District Subgroup Growth* - Overall growth across most subgroups and subjects was considered typical as compared with previous district growth with the exception of Asian students who achieved higher than expected growth in reading, and students qualifying for free or reduced lunch (in grades 1 and 2) who achieved lower than expected growth in reading.
- *School Mathematics Growth* – Overall student growth across most schools, subjects, and grades was considered typical as compared with previous district growth with the exception of students from Manchester Elementary who achieved higher than expected growth in math. In addition, 4th grade students at Capron Elementary, Manchester Elementary, and Poplar Grove Elementary, as well as 7th and 8th grade students at North Boone Middle School achieved higher than expected growth in math. 3rd grade students at Poplar Grove Elementary achieved lower than expected growth in math.
- *School Reading Growth* – Overall student growth across most schools, subjects, and grades was considered typical as compared with previous district growth with the exception of 4th grade students at Manchester Elementary who achieved higher than expected growth in reading. 2nd and 3rd grade students at Poplar Grove Elementary achieved lower than expected growth in reading.
- *Capron Elementary Growth* – Students at Capron Elementary experienced typical growth as compared with previous district growth with the exception of 4th grade students who experienced higher than expected growth in math.
- *Manchester Elementary Growth* – Students at Manchester Elementary experienced typical growth in reading and higher than expected growth in math compared with previous district

growth. 4th grade students achieved higher than expected growth in math and reading. White students and those not classified as low income at Manchester Elementary also achieved higher than expected in math and reading, while female, male, no IEP, and no LEP students also achieved higher than expected growth in math.

- *North Boone Middle School Growth* – Students at North Boone Middle School experienced typical growth as compared with previous district growth with the exception of 7th and 8th grade students who achieved higher than expected growth in math. In addition, Hispanic, male, low income, LEP, and students without IEPs at North Boone Middle experienced higher than expected growth in math.
- *North Boone Upper Elementary Growth* – Students at North Boone Upper Elementary experienced typical growth as compared with previous district growth across all grades, subjects, and subgroups.
- *Poplar Grove Elementary Growth* – Students at Poplar Grove Elementary experienced typical growth as compared with previous district growth with the exception of 4th grade students who achieved higher than expected growth in math and 3rd grade students who achieved lower than expected growth in math. In addition, 2nd and 3rd grade students achieved lower than expected growth in reading. In addition, white, male, IEP, and low income students at Poplar Grove Elementary achieved lower than expected growth in reading.

Methods

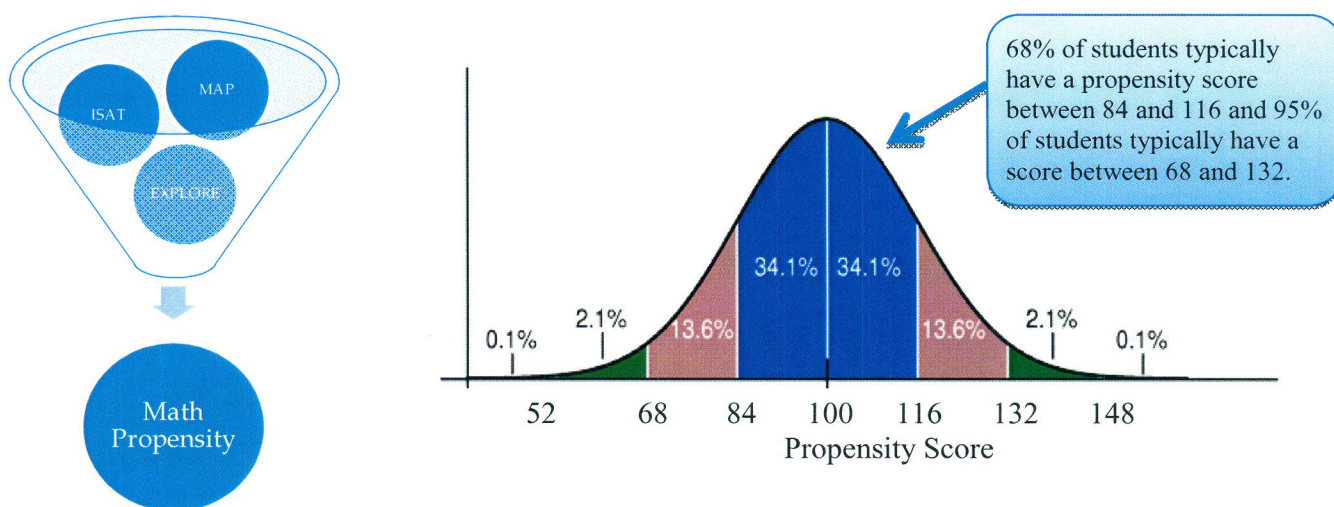
ISAT, MAP, and AIMSWeb data from CUSD 200 students between 2007 and 2012 were used to build a local growth model. Through this model, each student over the past two years who had test score data was assigned a propensity score based on his or her historical data. The propensity score indicates the student's expected future achievement given his or her past test scores. To evaluate student growth, CUSD 200 students' actual 2012 Spring ISAT, MAP and R-CBM test scores were compared to the expected values provided by the prediction models. The specific criterion and predictors used in the model are summarized in the table below.

Grade(s)	Predictors (from prior grade)	Outcome Criterion
1 st Grade	LNF, LSF, PSF (Winter and Spring)	R-CBM (Spring)
2 nd Grade	R-CBM (Winter and Spring) PSF (Winter), and LNF (Fall)	R-CBM (Spring) MAP (Spring)
3 rd Grade	MAP (Fall) and MAP (Spring)	MAP (Spring) ISAT
4 th Grade – 8 th Grade	MAP (Fall), MAP (Spring), and ISAT	MAP (Spring) ISAT

Understanding Growth Measurements

Propensity Scores

Propensity scores reduce the complexity of assessment data by distilling all of the predictive information contained in multiple past test scores into a single score. A propensity score reflects the future performance of an individual student expected from his or her individual past achievement relative to other students in the same grade and district. Propensity scores are scaled with mean of 100 and standard deviation 16 (as seen below). Predictions of subsequent achievement on any particular assessment can then be computed from mathematical models based on local test score growth.



Value-Added Growth Scores (VAG)

Computation of Growth Scores – ECRA develops equations and tables from past years of local student data to find the best equations and tables that relate important achievement criterion to students' previous achievement. These questions and tables form the Local Growth Model (LGM) for the district. Value-added growth (VAG) scores are measures of the amount of growth (either positive or negative) that a student or group of students achieved over a given time period compared with historical local growth. Each student's residual growth is calculated by subtracting their actual test score from their predicted score computed using the growth model. These residuals are then standardized to have a mean of zero and standard deviation of 1. Standardized residuals are easy to compare across grades, subjects and tests. The standardized residual for each student is their value-added growth scores.

Growth Scores in Program Evaluation – To evaluate a given program, VAG scores for all students within the program are averaged. Growth score means by program are then examined for statistical significance to establish whether students in a program have significantly different test score growth than what is predicted by the growth model.

Interpretation of Growth Scores - Value-added growth can be positive (if the student did better than expected), negative (if they scored lower than predicted), or 0 (if they hit their expected score). It should be noted that a negative growth score does not mean that the student did not learn during the school year. The student probably still had growth, but that growth was not as large as that expected based on the average student's growth in the district.

Not all statistically significant results are educationally significant. Large sample sizes can lead to significant differences even when the magnitude of the growth is small and not very meaningful. In order for student growth to be considered higher or lower than expected, the growth has to be not only statistically significant, but also substantial. Because of this, ECRA provides guidelines on how to interpret the magnitude of the value-added growth score.

- If the magnitude of the VAG is less than 0.3 (-0.3 to 0.3), then the difference between expected growth and actual growth is weak, even though they may be statistically significant.
- If the VAG is greater than 0.3 or less than -0.3, the difference between expected and actual growth is noticeable.

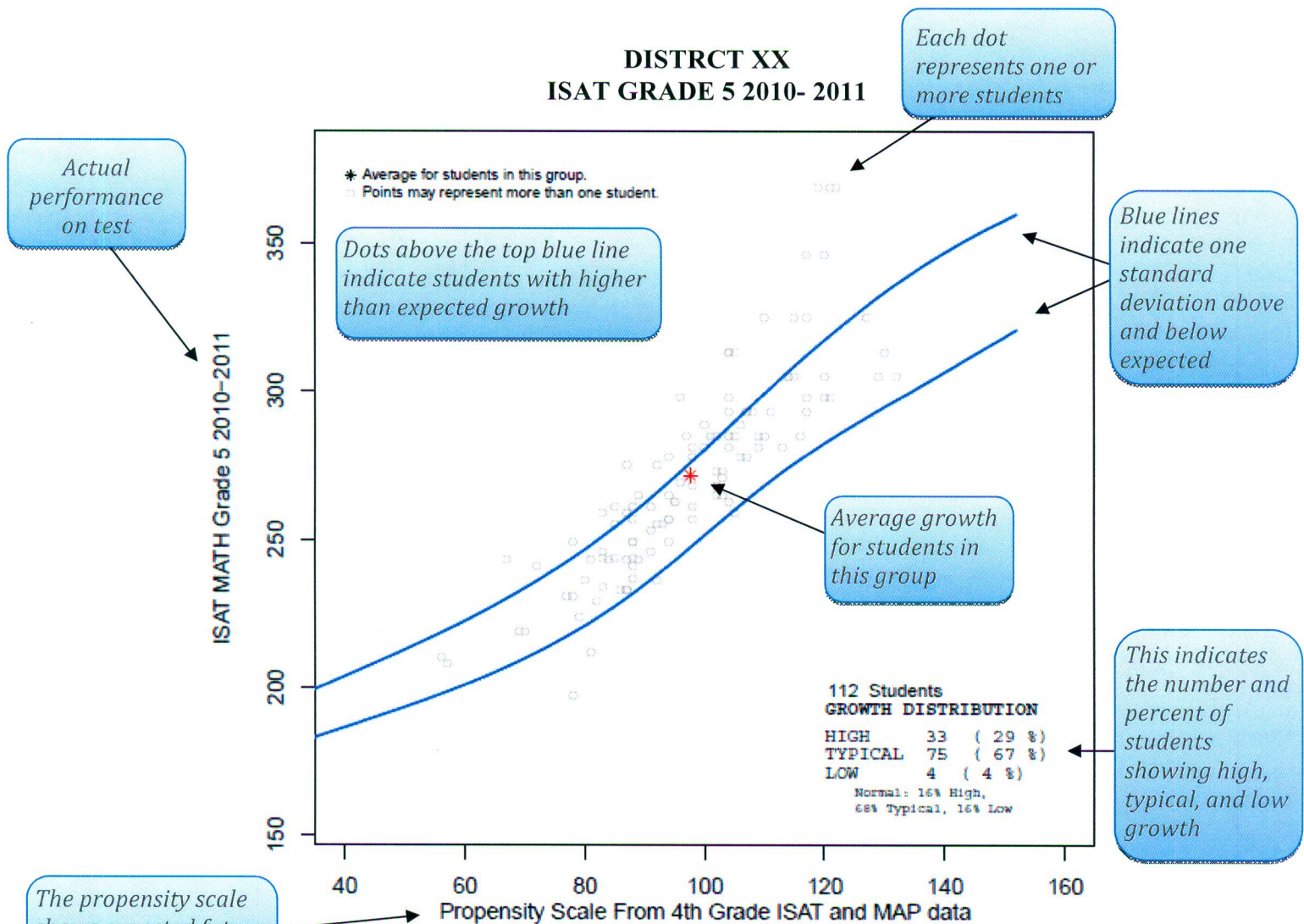
Evaluation Forms

Evaluation forms are sometimes provided that summarize student growth under each program. The overall value-added growth score is reported at the top right and growth scores for each particular subgroup (e.g., *grade*, *subject* or *subgroup*) are reported in the far right column of the table. The bottom row of the table provides the overall results of the program evaluation across the entire student population.

Scatterplots

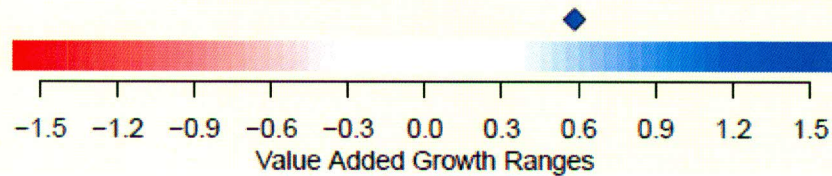
Scatterplots are provided showing actual student test scores (y-axis) by the propensity score from the previous year (x-axis). Superimposed on the scatterplots are positive one- and negative one-standard deviation curves about the expected growth curve. Students who were within one standard deviation of their expected score fall between the top and bottom blue line and are considered to have achieved *typical* growth while students outside of this range were considered to have atypical (high or low) growth. The distributions of students' growth about their individual expected scores are normal, so if students in the program show similar performance to what was expected based on past local growth, one should find 16 percent of the students with *high* growth, 16 percent with *low* growth, and 68 percent with *typical* growth. The next page serves as a guide on how to read the intricacies of the scatterplot.

Sample Scatter Plot



The propensity scale shows expected future performance based on historical scores

**This group's Value-Added Growth was 0.58 .
This group showed higher than expected growth.**



The scale indicates whether there was above, typical, or below average growth for this group of students. Significant growth scores above 0.3 are blue, and significant growth scores below -0.3 are red.