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# Patterns of English Language Arts Academic Growth in Middle Grades

**At a Glance**

This Research Brief investigated differences among schools in the initial student achievement and annual rates of ELA growth in middle grades using a variety of student and school demographic characteristics. It found a statistically significant difference in the initial ELA achievement but not in the annual rates of ELA growth between students in K-8 Centers vs. those in traditional middle schools and between students in traditional vs. charter schools.

In addition, the Brief identified schools with relatively high rates of annual ELA growth. These schools may have found some pedagogical approaches that resulted in higher rates of ELA learning. These approaches may deserve a deeper look by the District curriculum staff.

This Brief has two major goals. One goal is to explore what student and school factors are related to the student achievement and the rates of academic growth in English Language Arts (ELA) for students in grades 6-8. The second goal is to identify the schools in which the students experience higher than average growth in ELA knowledge and skills.

Generally, two facets of academic success are discussed: student achievement and academic growth. Although both facets are important, the academic growth is arguably more affected by instructional quality of teachers and schools. Teachers generally have no control over the initial achievement of their students, but they can influence how fast their students grow academically. Teachers and schools that demonstrate high rates of academic growth can "move" a low-achieving student to higher levels of academic achievement.

Students in middle grades (6-8) participate in two statewide standardized assessments every year: ELA and Mathematics components of the Florida Standards Assessments (FSA). The difficulty of using the Mathematics component of the FSA is that most advanced students in grades 7 and 8 take the Algebra 1 course and, consequently, participate in Algebra 1 End-of-Course assessments, making the longitudinal exploration of FSA Mathematics results problematic. Therefore, the ELA component of the FSA was selected for the exploration in this Brief. The FSA ELA scale is vertically aligned, making it suitable for a longitudinal analysis.

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## Sample Selection

All students in the District who were in grade 6 during the 2014-2015 school year were selected. Of those, only the students who were promoted to the next grade level in this and the following academic year, who remained in the same school during the 2014-2015 through 2016-2017 period and had FSA ELA scores in 2015, 2016, and 2017 were retained as part of the Student Sample. Altogether, there were 17,553 students in that sample representing 138 schools.

### Student Characteristics (Based on the February 2016 Snapshot)

- 75% were eligible for the federal free/reduced price lunch (FRL) program.
- 17% were English language learners (ELLs).
- 8% had a primary exceptionality other than gifted (ESE).
- 18% were identified as gifted.

### School Characteristics

- 75% was the school average of FRL percentages.
- 17% was the school average of ELL percentages.
- 9% was the school average of ESE percentages.
- 12% was the average of the percentages of gifted students.
- 43 schools (31%) were charter schools (including both K-8 Centers and middle schools).
- 67 schools (49%) were K-8 Centers (including both charter and traditional schools).

## Statistical Analysis

A three-level Hierarchical Linear Model (HLM) was used to analyze the data. The first level of the model was time (testing occasion) clustered within students, with exactly three test score results for each student. The testing occasions were the spring of grade 6, 7, and 8. The student and school constituted the second and third levels of the model, respectively.

It would have been better to conduct this investigation using the end of grade 5 scores as well. Unfortunately, they were not available, as the operational FSA testing began in the spring of 2015 when the students in the Student Sample were in grade 6.

The first level of the model fitted a linear model of ELA academic growth between the three testing occasions. This model had two parameters: intercept and slope. The intercept represented the initial (2015, or the end of grade 6) scale score on the ELA component of the FSA, whereas the slope represented the annual rate of academic growth between the testing occasions in scale score units per year.

Student- and school-level predictors were used in the model to determine their effect on the initial scale score and the annual rate of academic growth in ELA. All variables listed in the previous section were considered for inclusion in the second and third levels of the model. Statistical significance tests were used as a guide to decide whether to retain a specific variable in the model. These tests were conducted at the conventional .05 level of statistical significance.

## Overall Results

The results of the full 3-level model regarding the initial student achievement vs. rates of academic growth in ELA are discussed separately below.

### Student Achievement Results

The initial mean ELA scale score from a full 3-level model was 331.5 scale score points overall. That was the score of an average student for whom the values of all predictors in the model were zero; that is, an average student who was not FRL, not ELL, not ESE, not classified as gifted, attending a school in which the percentages of FRL students, ELL students, and gifted students were average among schools.

Attending a K-8 Center or a charter school were significant predictors of the initial ELA achievement: the initial ELA mean scale score of students in K-8 centers (including both charter and traditional schools in that comparison) was 2.1 scale score points higher than that of students in middle schools; it was 6.5 scale score points higher for students in charter schools (including both K-8 Centers and middle schools) than for students in traditional schools when the values of all other predictors in the model were the same. Keeping the values of all other predictors the same when comparing K-8 Centers vs. traditional schools means comparing ELL students in K-8 Centers with ELL students in traditional middle schools, FRL students with FRL students, etc. The effects of other variables in the model with statistically significant effects on the initial student achievement are shown in the table below.

| Student Characteristics | | School Characteristics | |
|---|---|---|---|
| **FRL** | -4.7 | **FRL percentage** | -1.4* |
| **ELL** | -21.9 | **ELL percentage** | 1.1* |
| **ESE** | -15.4 | **Gifted percentage** | 2.9* |
| **Gifted** | 17.6 | | |

*Measured in units of 10 percentage points.

The results shown in the table above can be interpreted as follows (using the ELL status as an example). An average ELL student exhibited the initial ELA achievement that was 21.9 scale points lower than that of non-ELL students when the values of all other predictors in the model were kept the same. An increase in the school percentage of ELL students of 10 percentage points was associated with an increase in the initial ELA achievement by approximately 1.1 scale score points when the values of all other predictors in the model were kept the same.

### Academic Growth Results

The average growth rate from the full three-level model was 8.0 scale score points per year. This was the rate of ELA growth of an average student who was not FRL, not ELL, not ESE, not classified as gifted, attending a school in which the percentages of FRL students, ELL students, and gifted students were average among schools.

Attending a K-8 Center or a charter school were not statistically significant predictors of the annual rate of ELA growth. That is, there was no statistically significant difference between students in charter vs. traditional schools (including both K-8 Centers and middle schools in that comparison) or between students in K-8 centers vs. those in middle schools (including both charter and traditional schools) in terms of their annual rates of growth in ELA scores. These findings along with the ones reported earlier for the initial student achievement indicate that the initial difference in the average scale scores between students in charter and traditional schools or between students in K-8 centers and those in traditional schools was maintained throughout the middle grade years.

The effects of the predictors in the model with statistically significant effects on the annual rate of ELA growth are shown in the table below.

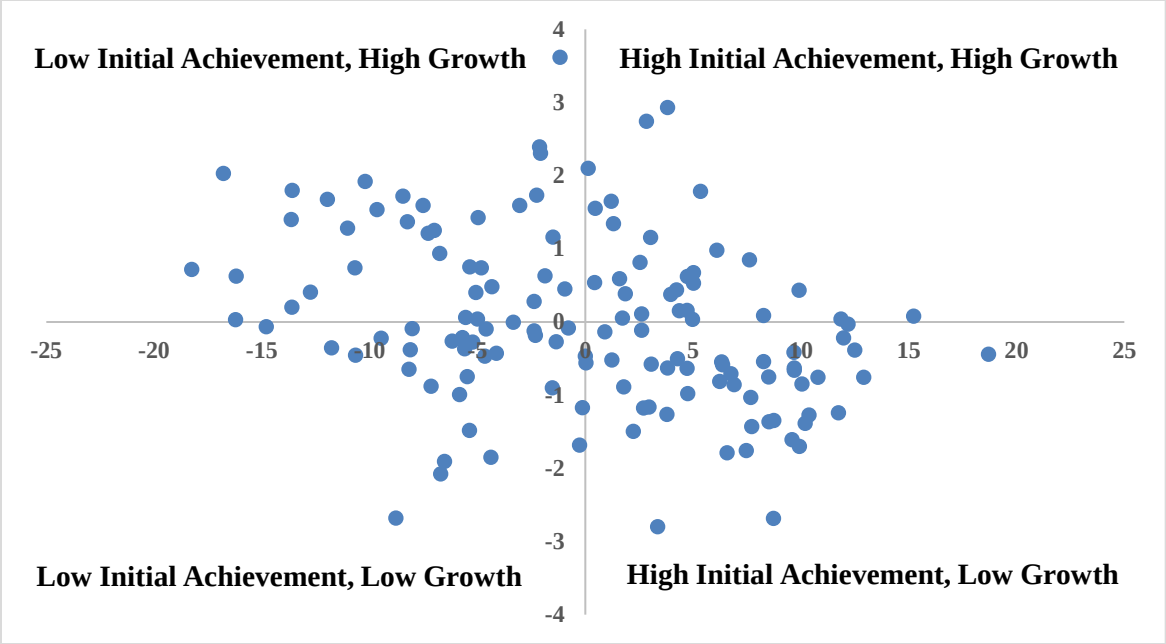
| Student Characteristics | | School Characteristics | |
|---|---|---|---|
| **ELL** | 3.1 | **ELL percentage** | 0.4* |
| **Gifted** | -0.6 | **FRL percentage** | 0.1* |

*Measured in units of 10 percentage points.

The results shown in the table above indicate that an average ELL student exhibited an annual rate of ELA growth that was 3.1 scale points higher than that of a non-ELL student when the values of all other predictors in the model were kept the same. An increase in the school percentage of ELL students of 10 percentage points was associated with an increase in the annual rate of ELA growth by approximately 0.4 scale score points per year when all other predictors in the model were kept the same.

## Individual School Results

In addition to the overall results, the model provides results on the initial achievement and the annual rate of ELA growth for individual schools. The chart below shows these results for all 138 schools in the sample. The difference between the school's initial achievement and the average of all such results is shown on the horizontal axis; the difference between the annual rate of ELA growth and the average of such rates is shown on the vertical axis.




The dots representing schools with higher than average rates of ELA growth are shown above the horizontal axis; the dots representing the schools with higher than average initial ELA achievement are shown to the right of the vertical axis. The chart above shows the classification of all schools in the sample into the four quadrants with schools exhibiting high growth located in the two upper quadrants. It is interesting to note that the correlation between the initial achievement and the annual rate of growth at the school level was negative (approximately -.28), so that the schools in which the initial average scale score was lower than the average tended to demonstrate higher than average rates of annual growth and vice versa.

The model-based school results for the schools exhibiting relatively high annual rates of ELA growth are shown in the table below, which was sorted by the annual rate of ELA growth. The choice of schools is explained later in the text.

| School | Initial Scale Score | Difference from the Mean | Annual Rate of Growth | Above the Mean |
|---|---|---|---|---|
| 5029 EXCELSIOR LANG ACADEMY | 329.09 | 5.39 | 11.60 | 3.25 |
| 5025 LINCOLN-MARTI CHARTER | 334.08 | 10.38 | 10.91 | 2.56 |
| 3421 MARCUS A MILAM K-8 CENTER | 333.11 | 9.41 | 10.72 | 2.37 |
| 6121 RUBEN DARIO MIDDLE SCHOOL | 328.15 | 4.45 | 10.37 | 2.03 |
| 6060 ASPIRA LEADERSHIP/COLLEGE PREP | 328.19 | 4.49 | 10.28 | 1.94 |
| 6041 PAUL W BELL MIDDLE SCHOOL | 330.40 | 6.70 | 10.08 | 1.73 |
| 6051 CAROL CITY MIDDLE SCHOOL | 313.49 | -10.21 | 10.01 | 1.66 |
| 6761 REDLAND MIDDLE SCHOOL | 320.06 | -3.64 | 9.90 | 1.55 |
| 6070 ASPIRA E M DE HOSTOS YOUTH | 316.67 | -7.03 | 9.78 | 1.43 |
| 5051 ERNEST R GRAHAM K-8 CENTER | 335.61 | 11.91 | 9.77 | 1.42 |
| 0761 FIENBERG/FISHER K-8 CENTER | 328.01 | 4.31 | 9.71 | 1.36 |
| 6961 WEST MIAMI MIDDLE SCHOOL | 321.81 | -1.89 | 9.70 | 1.35 |
| 6010 FLORIDA INTERNATIONAL ACADEMY | 318.31 | -5.39 | 9.65 | 1.31 |
| 6821 ROCKWAY MIDDLE SCHOOL | 331.47 | 7.77 | 9.63 | 1.28 |
| 5005 DAVID LAWRENCE JR K-8 CNTR | 327.23 | 3.53 | 9.57 | 1.23 |
| 6048 MIAMI COMMUNITY CH MID SCHOOL | 322.74 | -0.96 | 9.57 | 1.22 |
| 1721 EVERGLADES K-8 CENTER | 330.73 | 7.03 | 9.53 | 1.19 |
| 6611 COUNTRY CLUB MIDDLE SCHOOL | 320.61 | -3.09 | 9.51 | 1.17 |
| 5141 HUBERT O SIBLEY K-8 CENTER | 325.30 | 1.60 | 9.41 | 1.06 |

The average annual rate of growth from the initial model with no predictors at the student and school levels was 8.48 scale score points per year. This can be interpreted as the rate of growth of about 2.12 scale score points per grading period or 1.06 scale score points per one half of the grading period. The schools, which demonstrated the rate of growth of at least 1.06 scale score points higher than the average, were selected for the table above. These schools effectively added at least one-half of an entire grading period worth of ELA learning into a school year compared to an average school. Schools in the upper three positions in the table in effect added an entire grading period worth of learning into a school year compared with an average school.

## Summary

This Research Brief investigated differences among schools in the initial student ELA achievement and annual rates of ELA growth of students in middle grades using a variety of student- and school-demographic characteristics. It found a statistically significant difference in the initial ELA achievement but not between the annual rates of ELA growth between students in K-8 Centers vs. those in traditional middle schools and between students in traditional vs. charter schools. That is, the type of school organization did not have an effect on the rate of ELA growth.

It is a rather common belief that students in K-8 Centers are learning better that their counterparts in traditional middle schools. This research demonstrates that this belief is true as far students' ELA achievement is concerned. It is not true, however, that students in K-8 Centers grow academically in ELA any faster that students in traditional middle schools. Students in K-8 Centers start out at higher levels of ELA achievement and then grow at the same rate as their peers in traditional middle schools, thus maintaining their initial advantage.

The Brief also identified schools with relatively high rates of annual ELA growth. These schools may have found some pedagogical approaches that manifested themselves in higher rates of ELA learning. These approaches may deserve a deeper look by the District curriculum staff.