Student Growth on a Statewide Progress-Monitoring Assessment System by District: Median Income, Minority Enrollment, Setting, and Title I

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Abstract

The study analyzes student growth in English language arts (ELA) and mathematics at the district level ($N = 67$) in Florida. Student growth is compared across districts in terms of (a) median income, (b) minority enrollment, (c) setting, and (d) Title I eligibility. Multivariate regression models tested the effect of these variables on student growth. Minority enrollment had a statistically significant effect in most grades for both ELA and mathematics. Title I eligibility was positively correlated with ELA student growth in grades 4–8 and 10, although it was negatively correlated with ELA growth in grades 3 and 10. The models accounted for a higher percentage of the variation in student growth at the district level when coupled with social promotion or high school graduation. Controlling for the district setting and population density provided a more precise measurement of the variables under investigation. School leaders at the district level and state policymakers can use this research to inform how resources are allocated and how existing accountability systems impact schools and districts.

Keywords: student growth, school accountability, progress monitoring, school districts

Introduction

Most, if not all, state assessment systems in the United States are administered annually in the spring. The current accountability systems designed by states as a result of the Every Student Succeeds Act (ESSA) use these scores to indicate the overall quality of schools and local educational agencies (LEAs) across the nation, but are less useful for instructional decision-making. The State of Florida recently introduced a state assessment system that uses progress monitoring three times a school year. It encompasses Grades 3–10 for English language arts (ELA) and 3–8 for mathematics. Understanding student growth within a school year can provide important information about the impact of various instructional interventions that affect students. Furthermore, it allows for a greater understanding of the capabilities of schools in addressing the achievement gaps between subgroups of students—a major focus of accountability through ESSA.

The decision to move from a summative assessment system to a through-year assessment system, defined as a testing system that combines interim and summative assessments (Data Quality Campaign, 2022), was announced one year before the implementation of the new assessment system. Formative assessments are a critical piece of the teaching-learning process within the classroom, while summative assessments are meant to assess students in meeting a certain standard (criterion-based). In noting this, Looney (2011) showed the necessity for systems to integrate formative and summative assessments to have a consistent feedback loop. According to the Florida Department of Education (2023b), progress-monitoring assessment systems should provide "…real-time, immediate, and actionable data at the beginning, middle, and end of the school year to drive student improvement." Governor DeSantis focused on student growth as a key aspect of education, along with continuous improvement efforts guided by data-driven actions in classrooms, schools, and districts (State of Florida, 2021). In considering standardized testing, the loss of instructional time is prevalent and has led to the deskilling of teachers (Au, 2011)—providing hope with a progress-monitoring assessment to be ameliorated. In practice, this new assessment system has the potential to create a feedback loop based on a standard assessment across districts. It further shows the potential for assessments to be both for learning and of learning.

Assessments play a vital role in the accountability systems within states, although these assessments are typically administered only once per year (Quenemoen et al., 2004; Ready, 2013). Curriculum-based measurement (CBM) serves as the foundation for this system because it relies on the monitoring of progress and improved student outcomes (Deno, 2003; Deno et al., 2009; Foegen et al., 2016). Some implications include the ability to analyze student growth and determine the effects of certain interventions in the classroom, proving salient in instructional decision-making (Stecker et al., 2008). The use and applicability of CBM at the secondary level are more difficult as skills become more abstract and complex (Espin et al., 1999; Foegen & Deno, 2001). However, the focus of the CBM assessment is a tool to predict performance on the state assessment rather than the assessment itself (Deno, 2003; Shinn, 1998). This allows for the research conducted to add to the existing research base in terms of both applicability and generalizability—for researchers, central offices, and policymakers.

The analysis of student growth between districts is distinct, given the need to view school districts as economies of scale. Driscoll et al. (2003) found that districts affect the education production process in ways similar to the functioning of firms. Although important, it becomes difficult to fully understand the effect as schools are nested within districts, and classrooms are nested within schools. That being stated, viewing districts in this fashion provides a better understanding of student growth at the district level compared to within schools and classrooms. District size was found to play an important role in the education production process in California (Driscoll et al., 2003), whereas Hayes III (2018) found that district size has a low effect on student achievement, while still having a moderate effect size on district expenditures. Chingos et al. (2015) discuss that education reform has a direct impact at the district level, such as in teacher evaluations.

Districts only account for approximately 1–2% of the variance in student achievement, noting that differences between districts have implications in practice and policy (Alexander & Griffin, 1976). Alexander and Griffin (1976) demonstrated the difficulty in treating school districts as organizational units while noting the importance of differentiating between higher- and lower-performing districts with demographically similar students. One standard deviation in the distribution of district effects is associated with an increase in student achievement of 0.07–0.14 standard deviations (Alexander & Griffin, 1976). Leadership is second in affecting student learning, with Leithwood et al. (2019) finding that this is true at the district level as it relates to student achievement. For the purposes of this study, district leadership variables were not included in the analysis. Lastly, the variation in how districts use resources is associated with the applicable socioeconomic context (Unnever, et al., 2019).

Student growth data across the three progress monitoring periods were only available at the district level. Student growth is used for accountability of teachers, schools, and districts, even though between-year growth is the most common measurement used (Quenemoen et al., 2004). Ready (2013) discussed that there can be three different correlations between academic status and student growth: positive, negative, or no correlation. As a result of the focus on between-year growth, there is very limited research available on the use of within-year growth for accountability purposes. A comparison of rural school districts in Pennsylvania elaborated on the notion of economies of scale and showed lower expenditures in rural districts (Yan, 2006); moreover, a complex pattern emerged as it related to greater academic achievement. Upon analyzing rural districts alone, there was an unequal distribution of educational resources—making salient the concept of the district setting (Yan, 2006). Upon reviewing the literature, no other studies discussed the effect of setting at the district level; instead, they focused on the differences between schools and neighborhoods (Fan & Chen, 1999; Logan & Burdick-Will, 2017; Reardon et al., 2015).

Socioeconomic status (SES) and race/ethnicity are confounding factors in the differences between student achievement and student growth (McCall et al., 2006); furthermore. tracking student performance across time allows for the effects of instruction to be clearer (McCall et al., 2006). In the constant discussion of inequalities that exist in schools, one of the most pertinent aspects is the achievement gap. Student growth in reading and mathematics differs by racial/ethnic group, with African-American students having slower reading growth and Hispanic students having higher reading growth than European American students in grades 3–8 (McCall et al., 2006). McCall et al. (2006) further elaborated on student growth of African-American and Hispanic students being dependent on the poverty concentration in schools. Here, the authors demonstrate that growth measures provide a different story from achievement measures, which depict a continuous cycle of stratification (McCall et al., 2006). Reardon (2016; 2018) further elaborated on the impact of socioeconomic status and race/ethnicity at the district level.

The inequality of student outcomes between high- and low-income students has been found to increase over time, accounting for most of the variation between school districts (Fahle & Reardon, 2018; Mayer, 1997; Owens, 2018). While more funds and resources are provided to Title I schools, their effect on student achievement is inconclusive, ranging from no effect to a moderate effect (Borman & D'Agostino, 1996; van der Klaauw, 2008). Roza (2005) demonstrated that the spending patterns of districts limit the intended effect of Title I funding, leaving the reality of policy to not fit the paradigm of school leaders—schools in low-income communities receive more benefits. Furthermore, districts tend to use state and local funds for non-categorical spending to the benefit of affluent schools (Roza, 2005). The existing research allows for a greater understanding of the nuances of student academic growth and the various characteristics that explain student outcome differences between districts. The current research adds to the literature as it looks at the various characteristics in conjunction with what is known of student growth via progress monitoring.

Purpose of the Present Study

The existing literature does not account for progress monitoring being used at such a scale as the assessment system under investigation for this study. The lack of consensus on the effects of Title I status and the district setting indicates a need to better understand the effect on student growth during a school year. Due to data limitations, it was necessary to analyze the data at the district level as public data on student growth were only available at that level. The questions asked for this study focused on the relationship between student growth and the following characteristics: median income, minority enrollment, setting, and Title I eligibility. I posed two questions: First, what is the correlation between student growth on the Florida Assessment for Students Thinking (FAST) English Language Arts assessment at the district level based on (a) setting, (b) minority enrollment, (c) Title I eligibility, and (d) median family income in Grades 3–10? Second, what is the correlation between student growth on the Florida Assessment for Students Thinking (FAST) Mathematics assessment at the district level based on (a) setting, (b) minority enrollment, (c) Title I eligibility, and (d) median family income in Grades 3–8?

Method

Data Sources and Sample

The data sources used for this study involved the Common Core of Data from the National Center for Education Statistics (NCES), the Florida Department of Education (FLDOE), the Florida Department of Transportation (FDOT), and the Florida Department of Health (FDOH). The setting of the district was based on the classification provided by NCES, which provides the following classifications: city, rural, suburban, and town. The growth in progress monitoring was obtained based on a summary of districts shown annually on the department's website, providing the percentage of students obtaining on grade level or above (3 or higher on a scale of 1–5) for the 2022–2023 school year. The Know Your Schools Portal was accessed to assess the minority enrollment by district based on the third survey of full-time equivalent (FTE) students—a unit of measurement used to calculate student attendance and allocate funding (FLDOE, 2023a)—in Spring 2023, which also included the sole inclusion of schools defined as general education. The department provided an Excel spreadsheet with a list of schools by district that qualified for Title I in the 2022–2023 school year. The FDOH portal listed the median income of each county in 2021, which was then inflation-adjusted to calculate the approximate median income in 2022. An inclusion of population density was used to control for this on a county-by-county basis, which was collected based on data from the FDOT. The main limitation of the population density measure is that it is based on an estimation from the year 2021. The predictive power of population density is lessened because of population growth occurring in 61 counties from April 1, 2020, to April 1, 2023; moreover, five counties had a population growth greater than 50,000 individuals (Office of Economic and Demographic Research, 2024). Table 1 provides the descriptive statistics for the counties as they relate to the aforementioned variables. A total of 67 school districts were included in this study, making up all of the public school districts in the State of Florida.

Analytic Method

To assess student growth in both ELA and mathematics by grade and school level, a formula in Excel was used to subtract the first progress monitoring percentage from the final progress monitoring assessment percentage. The average by school level was calculated through a formula that took the sum of student growth divided by the number of grades by level. A pivot table was created to enumerate the total number of schools and Title I schools by school level and district, which was then divided to obtain the percentage of Title I schools by school level. The inflation adjustment was done by multiplying the median income by 1.08, representing an 8% inflation rate between 2021 and 2022. The data from the Excel file were then imported into Stata for statistical analysis. The data from the FDOT on the population density of each district was manually inputted as a new variable into the Stata dataset. The setting consisted of four dummy-coded variables representing the four categories (city, rural, suburban, and urban), with 1 signifying that the district was classified as such and 0 signifying that the district was not classified in that category. With the dummy variables, each district had only one variable with a value of 1. A series of *t*-tests were conducted to compare student growth in Grades 3–8 for mathematics and ELA, as well as analyzing Cohen's *d*. Cohen's *d* is used to standardize the difference between two means, being useful in properly situating the implications of an effect (Cohen, 1988; Fritz et al., 2012). Various crosstabulation tables were created to analyze the variables' correlations and the corresponding *p*-value for statistical significance. Lastly, various multivariate regression models were created for student growth at each grade level and collectively for elementary, middle, and high school, as applicable.

Findings

This study measured the correlation between student growth at the district level with setting, minority enrollment, Title I eligibility, and median family income. The percentage of students in elementary schools from a minority background was significantly correlated with student growth in Grades 3–5 for English Language Arts ($p < 0.001$); moreover, this shows the impact that race/ethnicity has on student growth as shown by McCall et al. (2006). The strength of this correlation decreases from $r = –.59$ for Grade 3, $r = –.54$ for Grade 4, to $r = –.42$ for Grade 5 as shown in Table 2. The starting pass rate, the average of all elementary students that passed the ELA assessment based during the first progress monitoring assessment (PM1), is highly correlated with the standardized median household income ($r = .75$; $p < 0.001$) and moderately correlated with the district Title I eligibility ($r = .36$; $p < 0.001$). Such a finding elaborates on both the differences in academic status and student growth (Ready, 2013), along with the saliency of (a) Title I on student growth as compared to student achievement and (b) how districts spend Title I funds (Roza, 2005). The standardized median income still demonstrates a high correlation for the starting pass rate of ELA in middle school (r = .77) and high school (r = .71) at the .001 significance level. Minority enrollment was found to be statistically significant at the .05 level or less as it relates to the average student growth in ELA for elementary (r = –.66; p < .001); middle school (r = –.42; p < 0.001); and high school (r = –.25; p < .05).

Table 1. *Descriptive Statistics of Variables*

Variable[a]	*M*	*SD*	95% CI	
			LL	*UL*
Minority Enrollment for Elementary Schools	0.484	0.202	0.140	0.960
Minority Enrollment for Middle Schools	0.489	0.203	0.140	0.970
Minority Enrollment for High Schools	0.474	0.204	0.110	0.970
Title I for Elementary Schools (%)	0.702	0.253	0	1
Title I for Middle Schools (%)	0.402	0.276	0	1
Title I for High Schools (%)	0.263	0.243	0	1
Inflation–Adjusted Median (2022)	60,869	12,745	41,135	95,898
Student Growth for Grade 3	0.299	0.0562	0.170	0.420
Student Growth for Grade 4	0.267	0.0470	0.140	0.410
Student Growth for Grade 5	0.114	0.0483	0.0400	0.280
Average Student Starting Point for Elementary	0.275	0.0676	0.0900	0.483
Average Student Growth for Elementary School	0.227	0.0401	0.147	0.337
Student Growth for Grade 6	0.114	0.0483	0.0400	0.280
Student Growth for Grade 7	0.125	0.0419	0.01000	0.260
Student Growth for Grade 8	0.151	0.0442	0.0400	0.300
Average Student Starting Point for Middle	0.316	0.0739	0.150	0.543
Average Student Growth for Middle School	0.130	0.0361	0.0700	0.257
Student Growth for Grade 9	0.138	0.0378	0.0400	0.240
Student Growth for Grade 10	0.152	0.0484	0.0600	0.310
Average Student Starting Point for High	0.322	0.0762	0.105	0.535
Average Student Growth for High School	0.145	0.0382	0.0750	0.265
Student Growth for Grade 3	0.516	0.0809	0.310	0.720
Student Growth for Grade 4	0.512	0.0933	0.180	0.720
Student Growth for Grade 5	0.401	0.0847	0.140	0.670
Average Student Starting Point for Elementary	0.0953	0.0411	0.0300	0.217
Average Student Growth for Elementary	0.476	0.0750	0.230	0.673
Student Growth for Grade 6	0.367	0.0917	0.160	0.670
Student Growth for Grade 7	0.299	0.0893	–0.0400	0.500
Student Growth for Grade 8	0.400	0.123	–0.0600	0.660
Average Student Starting Point for Middle	0.152	0.0548	0.0500	0.357
Average Student Growth for Middle School	0.355	0.0702	0.197	0.520
Z-score of Inflation-Adjusted Household Income	2.46e-08	1.000	–1.548	2.748
Population Density in 2021 (per square mile)	389.8	579.7	8.980	3,523
Standardized Population Density 2021	–1.51e-08	1.000	–0.657	5.404

Note. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.
[a]*N* = 67 for each variable.

Other correlation outputs provide information about the relationship between the four variables and student growth in mathematics in Grades 3–8. Here, Title I eligibility had a low overall correlation with student growth in Grades 6, 7, and 8 (see Table 3). It is important to note that Title I eligibility is negatively correlated with student growth in mathematics for Grade 6 but is positively correlated with student growth for Grades 7 and 8. In acknowledging that the spending patterns of districts are important (Roza, 2005), it is important to differentiate between Title I status in elementary schools as opposed to middle schools. This relationship was not statistically significant. The value of the correlation coefficient corresponding to district minority enrollment decreased from Grades 3 to 5 ($r = –.57$, $r = –.49$, and $r = –.41$, respectively) and was statistically significant ($p < .001$ for Grades 3 and 4; $p < .01$ for Grade 5).

As stated previously, effect sizes were computed to compare ELA and mathematics scores in elementary and middle school. The values of Cohen's *d* were –3.11 for Grade 3 student growth, –3.32 for Grade 4 student growth, and –4.16 for Grade 5 student growth, as shown in Table 26. This demonstrates that there is greater student growth occurring in mathematics in elementary schools at the district level; however, the starting pass rate for ELA is 3.21 standard deviations higher than mathematics in elementary schools. Such findings are consistent with existing research in understanding the initial starting point of a student and student growth (Ready, 2013), here demonstrating an overall negative correlation as a district. The same pattern is evident in middle school, where there is less difference. The value of Cohen's *d* for Grade 6 student growth is –3.46, –2.49 for Grade 7, and –2.69 for Grade 8 (see Table 26). In comparing the starting pass rate between ELA and mathematics in middle school, the pass rate for ELA is 2.53 standard deviations higher than for mathematics. Further analysis was conducted to determine student growth (a) by individual grade level and (b) by elementary, middle, and high school, as applicable. The regression result for a district being classified as a city is nonexistent as a result of collinearity. Nine districts are classified as a city setting based on the dichotomous dummy variable (Alachua, Duval, Highlands, Leon, Pinellas, Sarasota, St. Lucie, Sumter, and Volusia). This result is applicable in all regression models as seen in Tables 7-25.

The variables for minority enrollment, Title I, and the average student starting point are reported from a scale of 0 to 1, as shown in Table 1. Upon reviewing student growth in ELA in elementary, minority enrollment was statistically significant in all models ($p < .01$); however, the coefficient decreased across Grades 3–5 when holding all other variables constant (see Tables 7–10). Chingos et al. (2015) noted that the differentiation between districts is impactful to practice and policy considerations, in this case, providing support as to the impact of race/ethnicity on education at the district level (Reardon, 2016; 2018).Title I has some statistical significance when standardized inflation-adjusted household income is controlled ($p < 0.05$), noting that inequality of student outcomes causes stratification to low-income students (Fahle & Reardon, 2018; Owens, 2018), but it loses statistical significance once controlling for setting and population density ($p > .05$). While the impact of income is noted, here controlling for the standardized household income for each district further shows the impact of how Title I funds are spent and allocated—either allowing for social mobility or furthering social stratification (McCall et al., 2006; Roza, 2005). Minority enrollment had a smaller coefficient upon analyzing student growth for ELA in middle school. However, the value of the coefficient was not statistically significant in Grade 7, as shown in Table 12 ($p > .10$). None of the variables were found to have a statistically significant relationship with ELA growth for high schools upon adding controls for district setting and population density.

The regression model results for mathematics student growth show a different pattern than the models for ELA student growth in Grades 3–8 (elementary and middle school). Minority enrollment was significantly correlated with mathematics student growth in all elementary grade levels, as shown in Tables 18–20 ($p < .01$ for Grades 3 and 4; $p < .05$ for Grade 5). The coefficient for Grade 3 is $r = –0.20$; Grade 4 is $r = –0.22$; Grade 5 is $r = –0.15$. This is different from the decrease by grade level in elementary school that occurs with ELA student growth. Minority enrollment reaches statistical significance in analyzing student growth in Grades 6 and 7 ($p < .01$), noting a more negative coefficient going from –0.15 to –0.21, respectively (see Tables 22 and 23). This occurs after controlling for Title I eligibility, median household income, starting pass rate, district setting, and population density. By controlling for these variables and with minority enrollment still having statistical significance, the gap between minority and White students may extend beyond reading as shown by McCall et al. (2006); however, such a determination cannot be made by this study because (a) districts only account for 1 to 2% of the variance in student achievement and (b) in treating districts as organizational units we cannot ascertain the impact on individual students (Alexander & Griffin, 1976; Chingos et al., 2015; Driscoll et al., 2003). In Grades 4 and 6, the starting point of students is statistically significant at the $p < .05$ level. In Grade 4, for each additional percentage point of students who passed in PM1, there were 0.06 percentage points of additional mathematics student growth. In Grade 6, for each percentage point of students who passed PM1, there were 0.05 percentage points of additional mathematics student growth. The aforementioned results can be found in Tables 19 and 22.

The impact of Title I eligibility cannot be overstated, especially considering that less affluent schools receive more benefits (Roza, 2005). Controlling for the population density, median household income, starting pass rate, and minority enrollment sheds more light on accountability measures. Student growth in ELA in elementary is negatively affected by Title I eligibility in Grade 3, having a coefficient of –0.02; moreover, student growth in Grades 4 and 5 had a positive coefficient (see Tables 7–9). A similar pattern exists in high school, whereby the coefficient for Title I is –0.002 in the 10th Grade. Upon reviewing student growth in mathematics, there is a smaller, positive coefficient for Grade 3 as opposed to Grades 4 and 5 in elementary school. The coefficient values associated with Title I status shed light on student growth, as seen in mathematics in middle school, where Grades 6 and 7 have a high coefficient (0.04 and 0.07, respectively); moreover, in Grade 8, districts that have a higher percentage of middle schools that have Title I eligibility see a negative coefficient on student growth (–0.0680). The sixth model in Tables 22–24 demonstrates the aforementioned results for mathematics student growth in middle school. The coefficients did not demonstrate statistical significance at the $p = .05$ level in the final regression model.

The district setting had a small to moderate coefficient value in relation to student growth, further illustrating the differences between ELA and mathematics. Belonging to a rural district compared to a suburban district, as defined by NCES, has a ten-fold impact on student growth in Grade 3 for ELA, as seen in Table 7 (rural: 0.02; suburban: 0.003). While the results are not statistically significant, it is intriguing to consider the magnitude of the coefficient. Yan (2006) found that in comparing rural districts, there was an unequal distribution of educational resources while noting that the literature has focused more on the differences between the settings of schools (Fan & Chen, 1999; Logan & Burdick-Will, 2017). Concerning Grade 4 ELA growth, districts classified as town or rural areas had small but negative coefficient values (–0.10 and –0.05 percentage points, respectively). The trend seen in the differentiation between a rural or suburban district also occurs in middle school and high school for ELA student growth; however, in Grade 7, belonging to a rural district had less of an impact based on the coefficient in the regression model than belonging to a suburban district, as seen in Table 12 (0.0016 and –0.01, respectively). The difference in magnitude in belonging to a suburban district compared to a rural district was less in Grade 3 for ELA (rural = 0.03; suburban = 0.01). The difference changes in considering Grade 4, where a rural district setting has a coefficient of –0.02 compared to a suburban district setting with a coefficient of 0.005 (see Table 19). With regard to mathematics growth in Grades 6 and 7, there was a large difference between the coefficients corresponding to the district setting. However, in Grade 8, there was only a 20% difference in magnitude as shown in Tables 22–24 (rural = 0.05; suburban = 0.04). As stated previously, these findings are not statistically significant but may have importance in a practical setting.

Discussion and Implications

Researchers, policymakers, and practitioners can use the results of this study to better understand the nuances of student academic growth within the school year, as opposed to the current measures used by accountability systems (Quenemoen et al., 2004; Ready, 2013). This is especially salient regarding the differences between ELA and mathematics, which may show more resources to be provided to districts and schools based on these results; furthermore, it will be important for researchers to investigate variations among districts with similar characteristics. Even though a majority of the variables did not reach statistical significance in the corresponding models, minority enrollment reached statistical significance in both ELA and mathematics in elementary school and middle school. The subtle differences between the various grades are important, particularly for ELA growth in elementary school, in which Model 6 for Grade 3 explains almost 41% of the variance in student growth as compared to a similar model, only predicting approximately 30% in Grades 4 and 5. This may demonstrate the impact of the 3rd grade having such a strong focus on social retention—primarily based on scores of the corresponding ELA assessment.

Public school districts receive funding from various sources based on the local property tax base, costs of education programs, costs of living, and student population size (Wright, 2010). The Florida Education Finance Program contributed approximately 37% of the funding in the 2020–2021 school year (FLDOE, 2023a). The cost factor, which is the ratio of actual costs to predicted costs, for the 2022–2023 school year was 126% for K–3, 100% for Grades 4–8, and 99.9% for Grades 9–12 (FLDOE, 2023a). The policy states that it takes 12.6% more fiscal effort from the state to provide education to students in 3rd grade than it does to students in Grades 4–8. In analyzing student growth in elementary school for ELA, this additional fiscal effort presents a divergence from this—having more negative coefficients at the third-grade level. The fiscal effort was not controlled for, which may have allowed for greater precision in the regression coefficients.

One of the greatest impacts of the transition to progress monitoring could be in how school accountability is measured, both in Florida and nationwide. Croft et al. (2023) discussed a constraint resulting from tension in the Every Student Succeeds Act that limits the use of growth measures in state accountability systems. Through Fla. Stat. § 1048 (2022), the Florida Legislature authorized the use of student growth from PM1 and PM2 for accountability purposes. Parents may also find some value in having a within-year measure of student growth (Croft et al., 2023). This may have broader implications as it relates to inequalities in schools, as Houston and Henig (2021) found that (a) student growth is less coupled with the racial and socioeconomic composition of students and (b) providing student growth measures with student achievement caused individuals to choose less White and less affluent districts. In the ever-increasing desire to ensure the public knows the quality of schools, only time will tell whether such a shift to focusing on student growth will ameliorate inequalities in schools, shown through racial and socioeconomic segregation. In noting this, the hope is that this study may prove beneficial to the current study being conducted by the State and the future understanding of student growth in education policy reform.

In noting that this research focuses on data at the district level, obtaining school- and student-level data may provide more salient information on these characteristics and others that impact student growth. Further research should focus on specific interventions and resources that may help teachers and school administrators reach higher levels of student growth and overall student achievement. The reason for not discussing these interventions and resources is due to the analysis of researching districts as economies of scale. While further research studies should be conducted, as progress monitoring is a new approach in a handful of states, implications go to the existing paradigm of achievement gaps as well as the common desire for equity to be achieved.

As with all research studies, there are limitations to generalizability along with internal and external validity. One of the most significant limitations is that there are substantial variations within school districts that are not addressed in this study; moreover, this limits the interpretation of Title I due to variations in school size and the use of the percentage of schools in a district based on elementary, middle, and high school. Alexander and Griffin (1976) discussed how treating school districts as organizational units limits this and noted that such variation at the school and district levels accounts for a greater percentage of the variation. The use of setting as an independent variable in this study may be less informative than other variables, noting that existing research mainly focused on comparing settings across schools rather than districts (Fan & Chen, 1999; Logan & Burdick-Will, 2017). In the multivariate regression analysis, the fourth model does not consider the district setting as a variable while noting that the inclusion thereof does impact the coefficient of other variables.

Although it is not addressed in this study, future research should analyze student growth alongside the intricacies of these variations. District leadership is also an important consideration as it relates to learning (Leithwood et al., 2019), but this was not assessed in this study. Another limitation is that various aspects of the literature solely focus on student achievement, but Florida’s approach to analyzing student growth is novel and has not been explored in the existing literature to an ascertainable degree. Future research should focus on the difference in the analytical power between a summative and through-year assessment. A longitudinal study of student growth that accounts for classroom, school, and student characteristics may provide additional information about disparities in student growth between high- and low-income students (Fahle & Reardon, 2018; Owens, 2018), as well as other disparities between students and schools. While these limitations exist, the implications on accountability and existing inequalities in schools are important in a post-pandemic education policy space.

Table 2. *Pearson Coefficients for ELA Student Growth in Elementary*

Variable	1	2	3	4	5	6	7
1. District Minority Enrollment	1.000						
2. Household Income[a]	–.0372	1.000					
3. Population Density 2021[b]	.3572**	.3492**	1.000				
4. District Title I Eligibility	–.0293	–.4781***	–.3074*	1.000			
5. ELA Student Growth–Grade 3	–.5949***	.1961	–.1762	–.1278	1.000		
6. ELA Student Growth–Grade 4	–.5432***	.0938	–.1432	–.0177	.5951***	1.000	
7. ELA Student Growth–Grade 5	–.4327***	–.1851	–.2960*	.3039*	.4927***	.2148	1.000
8. Starting Pass Rate	–.1574	.7520***	.3571**	–.4477***	.2392	.1385	–.1192
9. Average Student Growth	–.6634***	.0539	–.2569*	.0554	.8968***	.7543***	.7151***

Note: [a]Standardized Median.[b]Standardized District.
**p* < .05. ***p* < .01. ****p* < .001.

Table 3. *Pearson Coefficients for ELA Student Growth in Middle School*

Variable	1	2	3	4	5	6	7
1. District Minority Enrollment	1.000						
2. Household Income[a]	–.0372	1.000					
3. Population Density 2021[b]	.3511**	.3492**	1.000				
4. District Title I Eligibility	.2288	–.3421**	–.0379	1.000			
5. ELA Student Growth–Grade 6	–.4421***	–.1851	–.2960*	.1391	1.000		
6. ELA Student Growth–Grade 7	–.1668	.0209	.0253	.0708	.4112***	1.000	
7. ELA Student Growth–Grade 8	–.3764**	.1288	–.1179	.0714	.4275***	.5975***	1.000
8. Starting Pass Rate	–.2465	.7669***	.2944*	–.3156**	–.0266	–.0362	.2200
9. Average Student Growth	–.4150***	–.0219	–.1701	.1184	.7789***	.8138***	.8294***

Note: [a]Standardized Median.[b]Standardized District.
**p* < .05. ***p* < .01. ***p < .001.

Table 4. *Pearson Coefficients for ELA Student Growth in High School*

Variable	1	2	3	4	5	6
1. District Minority Enrollment	1.000					
2. Household Income[a]	–.0544	1.000				
3. Population Density 2021[b]	.3320**	.3492**	1.000			
4. District Title I Eligibility	–.0975	–.0758	.0884	1.000		
5. ELA Student Growth–Grade 9	–.3340	–.383	–.1272	.1167	1.000	
6. ELA Student Growth–Grade 10	–.1353	.0683	–.1893	–.0338	.5610***	1.000
7. Starting Pass Rate	–.3210**	.7101***	.2818*	–.1159	.0850	–.0146
8. Average Student Growth	–.2513*	.0244	–.1831	.0364	.8512***	.9120***

Note: [a]Standardized Median.[b]Standardized District.
**p* < .05. ***p* < .01. ****p* < .001.

Table 5. *Pearson Coefficients for Mathematics Student Growth in Elementary School*

Variable	1	2	3	4	5	6	7
1. District Minority Enrollment	1.000						
2. Household Income[a]	–.0372	1.000					
3. Population Density 2021[b]	.3572**	.3492**	1.000				
4. District Title I Eligibility	–.0293	–.4781***	–.3074*	1.000			
5. Mathematics Student Growth–Grade 3	–.5717***	.2930*	–.0803	–.1082	1.000		
6. Mathematics Student Growth–Grade 4	–.4871***	.2674*	.0079	–.1867	.6143***	1.000	
7. Mathematics Student Growth–Grade 5	–.4084**	.2960*	.0211	–.1951	.5829***	.6922***	1.000
8. Starting Pass Rate	–.0497	.6354***	.3758**	–.4210**	.1739	.3069*	.1696
9. Average Student Growth	–.5613***	.3277**	–.0177*	–.1898	.8337***	.8961***	.8731***

Note: [a]Standardized Median.[b]Standardized District.
**p* < .05. ***p* < .01. ****p* < .001

Table 6. *Pearson Coefficients for Mathematics Student Growth in Middle School*

Variable	1	2	3	4	5	6	7
1. District Minority Enrollment	1.000						
2. Household Income[a]	–.0372	1.000					
3. Population Density 2021[b]	.3511**	.3492**	1.000				
4. District Title I Eligibility	.2288	–.3421**	–.0379	1.000			
5. Mathematics Student Growth–Grade 6	–.4460***	.2438*	–.0517	–.0638	1.000		
6. Mathematics Student Growth–Grade 7	–.4270***	.2170	–.1203	.0325	.4772***	1.000	
7. Mathematics Student Growth–Grade 8	–.1748	.3688**	.0964	–.2641*	.2154	.0085	1.000
8. Starting Pass Rate	–.2299	.6610***	.1220	–.1618	.3344**	.1946	.1702
9. Average Student Growth for Mathematics	–.4772**	.4135***	–.0172	–.1682*	.7634***	.6366***	.6813***

Note: [a]Standardized Median.[b]Standardized District.
**p* < .05. ***p* < .01. ****p* < .001

Table 7. *Regression Model for ELA Growth for Grade 3*

Variable	Model 1	2	3	4	5	6
1. Minority Enrollment	–.166*** (.0278)	–.167*** (.0276)	–.165*** (.0275)	–.164*** (.0283)	–.143*** (.0333)	–.143*** (.0350)
2. Title I Eligibility (%)		–.0323 (.0219)	–.0178 (.0249)	–.0173 (.0255)	–.0242 (.0265)	–.0244 (.0268)
3. Household Income			.0076 (.0063)	.0069 (.0088)	.0082 (.0092)	.0082 (.0092)
4. Starting Pass Rate				.0163 (.1290)	.0752 (.1390)	.0768 (.1410)
5. District Setting						
City					—	—
Suburban					.0031 (.0182)	.0028 (.0187)
Town					.0243 (.0224)	.0237 (.0236)
Rural					.0210 (.0210)	.0204 (.0222)
6. Population Density 2021						–.0006 (.0073)
Constant	.379*** (.0146)	.402*** (.0214)	.391*** (.0232)	.386*** (.0475)	.352*** (.0563)	.352*** (.0569)
R^2	.354	.375	.389	.389	.407	.407

Note: Standard errors are in parentheses.
$*p < 0.1$. $**p < .05$. $***p < .01$

Table 8. *Regression Model for ELA Growth for Grade 4*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.127*** (.0243)	–.127*** (.0244)	–.126*** (.0246)	–.126*** (.0254)	–.129*** (.0302)	–.131*** (.0318)
2. Title I (%)		–.0063 (.0195)	.0004 (.0223)	.0003 (.0228)	.0012 (.0240)	.0016 (.0243)
3. Household Income			.0035 (.0056)	.0037 (.0078)	.0034 (.0083)	.0033 (.0084)
4. Starting Pass Rate				–.0031 (.1160)	–.0104 (.1260)	–.0145 (.1280)
5. District Setting						
City					—	—
Suburban					.0007 (.0166)	.0014 (.0169)
Town					–.0026 (.0203)	–.0011 (.0214)
Rural					–.0020 (.0191)	–.0005 (.0202)
6. Population Density 2021						.0016 (.0066)
Constant	.328*** (.0127)	.333*** (.0190)	.328*** (.0208)	.329*** (.0425)	.332*** (.0511)	.333*** (.0517)
Observations	67	67	67	67	67	67
R^2	.295	.296	.300	.300	.301	.302

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 9. *Regression Model for ELA Growth for Grade 5*

Variable	Model 1	2	3	4	5	6
1. Minority Enrollment	–.104*** (.0268)	–.102*** (.0256)	–.103***(.0257)	–.104*** (.0265)	–.0783** (.0309)	–.0787** (.0325)
2. Title I (%)		.0556*** (.0204)	.0483** (.0233)	.0475* (.0238)	.0434* (.0245)	.0435* (.0248)
3. Household Income			–.00387 (.0059)	–.00279 (.0081)	–.000480 (.0085)	–.000498 (.0086)
4. Starting Pass Rate				–.0231 (.121)	.0402 (.129)	.0394 (.131)
5. District Setting						
City					—	—
Suburban					.0004 (.0169)	.0006 (.0173)
Town					.0165 (.0207)	.0168 (.0219)
Rural					.0265 (.0195)	.0268 (.0206)
6. Population Density 2021						.0003 (.0067)
Constant	.164*** (.0140)	.124*** (.0198)	.130*** (.0217)	.137*** (.0444)	.099* (.0522)	.099* (.0528)
Observations	67	67	67	67	67	67
R^2	.187	.272	.277	.277	.309	.310

Note: Standard errors are in parentheses.
**p* < 0.1. ***p* < .05. ****p* < .01

Table 10. *Regression Model for ELA Growth for Elementary School*

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
1. Minority Enrollment	–.132*** (.0185)	–.132*** (.0186)	–.131*** (.0187)	–.131*** (.0193)	–.117*** (.0227)	–.117*** (.0239)
2. Title I (%)		.0057 (.0148)	.0103 (.0170)	.0102 (.0174)	.0068 (.0181)	.0069 (.0183)
3. Household Income			.0024 (.0043)	.0026 (.0060)	.0037 (.0062)	.0037 (.0063)
4. Starting Pass Rate				–.0033 (.0882)	.0350 (.0946)	.0339 (.0962)
5. District Setting						
City					—	—
Suburban					.0014 (.0124)	.0016 (.0127)
Town					.0127 (.0153)	.0131 (.0161)
Rural					.0152 (.0143)	.0156 (.0152)
6. Population Density 2021						.0004 (.0050)
Constant	.291*** (.00967)	.286*** (.0144)	.283*** (.0158)	.284*** (.0324)	.261*** (.0384)	.261*** (.0388)
Observations	67	67	67	67	67	67
R^2	.440	.441	.444	.444	.459	.459

Note: Standard errors are in parentheses.
$^*p < 0.1$. $^{**}p < .05$. $^{***}p < .01$

Table 11. *Regression Model for ELA Growth for Grade 6*

Variable	Model 1	2	3	4	5	6
1. Minority Enrollment	–.105*** (.0264)	–.119*** (.0263)	–.117*** (.0262)	–.115*** (.0280)	–.0839** (.0321)	–.0822** (.0335)
2. Title I (%)		.0443** (.0194)	.0361* (.0205)	.0362* (.0207)	.0340 (.0208)	.0341 (.0210)
3. Household Income			–.0064 (.0055)	–.0083 (.0086)	–.0044 (.0089)	–.0043 (.0090)
4. Starting Pass Rate				.0334 (.117)	.0869 (.120)	.0899 (.122)
5. District Setting						
City					—	—
Suburban					.0003 (.0168)	–.0003 (.0172)
Town					.0249 (.0196)	.0235 (.0210)
Rural					.0281 (.0189)	.0268 (.0202)
6. Population Density 2021						–.0013 (.00667)
Constant	.165*** (.0140)	.154*** (.0144)	.157*** (.0145)	.145*** (.0441)	.100* (.0512)	.0991* (.0518)
Observations	67	67	67	67	67	67
R^2	.195	.256	.272	.273	.316	.316

Note: Standard errors are in parentheses.
$*p < 0.1$. $**p < .05$. $***p < .01$

Table 12. *Regression Model for ELA Growth for Grade 7*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.0344 (.0252)	–.0398 (.0259)	–.0403 (.0261)	–.0511* (.0276)	–.0493 (.0319)	–.0560* (.0331)
2. Title I (%)		.0175 (.0191	.0207 (.0205)	.0204 (.0204)	.0179 (.0207)	.0174 (.0207)
3. Household Income			.0025 (.0055)	.0102 (.0085)	.0109 (.0089)	.0105 (.0089)
4. Starting Pass Rate				–.137 (.115)	–.145 (.119)	–.157 (.120)
5. District Setting						
City					—	—
Suburban					–.0145 (.0167)	–.0121 (.0170)
Town					–.0252 (.0195)	–.0197 (.0208)
Rural					–.0035 (.0188)	.0016 (.0200)
6. Population Density 2021						.0051 (.0066)
Constant	.142*** (.0133)	.138*** (.0142)	.137*** (.0144)	.185*** (.0435)	.199*** (.0508)	.203*** (.0512)
Observations	67	67	67	67	67	67
R^2	.028	.040	.044	.065	.109	.118

Note: Standard errors are in parentheses.
$^*p < 0.1$. $^{**}p < .05$. $^{***}p < .01$

Table 13. *Regression Model for ELA Growth for Grade 8*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.0818*** (.0250)	–.0900*** (.0254)	–.0919*** (.0252)	–.0865*** (.0268)	–.0666** (.0301)	–.0644** (.0314)
2. Title I (%)		.0266 (.0187)	.0375* (.0197)	.0376* (.0198)	.0309 (.0195)	.0310 (.0197)
3. Household Income			.00854 (.0053)	.00472 (.0082)	.00620 (.0084)	.00632 (.0085)
4. Starting Pass Rate				.0682 (.112)	.0941 (.112)	.0980 (.114)
5. District Setting						
City					—	—
Suburban					–.0006 (.0158)	–.0013 (.0161)
Town					–.0093 (.0184)	–.0111 (.0197)
Rural					.0246 (.0177)	.0229 (.0190)
6. Population Density 2021						–.0017 (.0063)
Constant	.191*** (.0132)	.184*** (.0139)	.181*** (.0139)	.157*** (.0422)	.136*** (.0480)	.135*** (.0486)
Observations	67	67	67	67	67	67
R^2	.142	.168	.201	.206	.282	.283

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 14. *Regression Model for ELA Growth for Middle School*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.0737*** (.0200)	–.0828*** (.0201)	–.0832*** (.0203)	–.0841*** (.0217)	–.0666*** (.0248)	–.0675** (.0259)
2. Title I (%)		.0295* (.0148)	.0314* (.0159)	.0314* (.0160)	.0276* (.0161)	.0275* (.0162)
3. Household Income			.0016 (.0043)	.0022 (.0067)	.0042 (.0069)	.0042 (.0070)
4. Starting Pass Rate				–.0116 (.0907)	.0120 (.0926)	.0104 (.0941)
5. District Setting						
City					—	—
Suburban					–.0049 (.0130)	–.0046 (.0133)
Town					–.0032 (.0151)	–.0024 (.0162)
Rural					.0164 (.0146)	.0171 (.0156)
6. Population Density 2021						.0007 (.0052)
Constant	.166*** (.0106)	.159*** (.0110)	.158*** (.0112)	.162*** (.0341)	.145*** (.0395)	.146*** (.0400)
Observations	67	67	67	67	67	67
R^2	.172	.220	.222	.222	.272	.272

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 15. *Regression Model for ELA Growth for Grade 9*

Variable	Model 1	2	3	4	5	6
1. Minority Enrollment	–.0620*** (.0217)	–.0647*** (.0217)	–.0651*** (.0219)	–.0623** (.0240)	–.0478* (.0271)	–.0489* (.0283)
2. Title I (%)		.0235 (.0182)	.0230 (.0184)	.0233 (.0186)	.0225 (.0188)	.0224 (.0190)
3. Household Income			–.0018 (.0045)	–.0032 (.0066)	–.0010 (.0069)	–.0011 (.0069)
4. Starting Pass Rate				.0266 (.0910)	.0404 (.0943)	.0385 (.0960)
5. District Setting						
City					—	—
Suburban					.0044 (.0143)	.0047 (.0146)
Town					–.0031 (.0174)	–.0023 (.0185)
Rural					.0241 (.0162)	.0249 (.0172)
6. Population Density 2021						.0008 (.0056)
Constant	.167*** (.0112)	.162*** (.0118)	.162*** (.0119)	.153*** (.0361)	.133*** (.0444)	.134*** (.0450)
Observations	67	67	67	67	67	67
R^2	.112	.134	.136	.137	.211	.211

Note: Standard errors are in parentheses.
$*p < 0.1$. $**p < .05$. $***p < .01$

Table 16. *Regression Model for ELA Growth for Grade 10*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.0321 (.0292)	–.0316 (.0295)	–.0310 (.0298)	–.0472 (.0323)	–.0200 (.0369)	–.0106 (.0383)
2. Title I (%)		–.0042 (.0248)	–.0033 (.0250)	–.0051 (.0250)	–.0024 (.0256)	–.0016 (.0257)
3. Household Income			.0029 (.0061)	.0111 (.0088)	.0154 (.0094)	.0159* (.0094)
4. Starting Pass Rate				–.155 (.122)	–.117 (.129)	–.101 (.130)
5. District Setting						
City					—	—
Suburban					–.0001 (.0195)	–.0030 (.0198)
Town					.0076 (.0238)	.0004 (.0250)
Rural					.0313 (.0221)	.0245 (.0233)
6. Population Density 2021						–.0071 (.0076)
Constant	.168*** (.0151)	.168*** (.0160)	.168*** (.0162)	.226*** (.0485)	.189*** (.0605)	.183*** (.0609)
Observations	67	67	67	67	67	67
R^2	.018	.019	.022	.047	.104	.117

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 17. *Regression Model for ELA Growth for High School*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.0470** (.0225)	–.0482** (.0227)	–.0480** (.0229)	–.0547** (.0251)	–.0339 (.0283)	–.0297 (.0296)
2. Title I (%)		.0097 (.0191)	.0098 (.0193)	.0091 (.0194)	.0101 (.0197)	.0104 (.0198)
3. Household Income			.0006 (.0047)	.0040 (.0069)	.0072 (.0072)	.0074 (.0072)
4. Starting Pass Rate				–.0641 (.0951)	–.0384 (.0986)	–.0310 (.100)
5. District Setting						
City					—	—
Suburban					.0021 (.0150)	.0008 (.0153)
Town					.0022 (.0182)	–.0009 (.0193)
Rural					.0278 (.0169)	.0247 (.0180)
6. Population Density 2021						–.0031 (.0059)
Constant	.167*** (.0116)	.165*** (.0123)	.165*** (.0124)	.189*** (.0377)	.161*** (.0464)	.159*** (.0469)
Observations	67	67	67	67	67	67
R^2	.063	.067	.067	.074	.152	.156

Note: Standard errors are in parentheses.
*$p < 0.1$. **$p < .05$. ***$p < .01$

Table 18. *Regression Model for Mathematics Student Growth for Grade 3*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.230*** (.0409)	–.231*** (.0407)	–.225*** (.0392)	–.216*** (.0400)	–.192*** (.0473)	–.197*** (.0496)
2. Title I (%)		–.0400 (.0324)	.00225 (.0356)	.00923 (.0360)	.00268 (.0376)	.00370 (.0379)
3. Household Income			.0223** (.0090)	.0124 (.0124)	.0136 (.0130)	.0134 (.0131)
4. Starting Pass Rate				.213 (.183)	.281 (.197)	.271 (.200)
5. District Setting						
City					—	—
Suburban					.0081 (.0259)	.0098 (.0264)
Town					.0266 (.0317)	.0305 (.0335)
Rural					.0286 (.0298)	.0323 (.0315)
6. Population Density 2021						.0040 (.0103)
Constant	.627*** (.0214)	.656*** (.0316)	.624*** (.0331)	.555*** (.0671)	.513*** (.0799)	.515*** (.0807)
Observations	67	67	67	67	67	67
R^2	.327	.343	.401	.414	.424	.426

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 19. *Regression Model for Mathematics Student Growth for Grade 4*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.226*** (.0502)	–.228*** (.0492)	–.224*** (.0486)	–.196*** (.0472)	–.211*** (.0551)	–.215*** (.0579)
2. Title I (%)		–.0742* (.0392)	–.0390 (.0441)	–.0191 (.0424)	–.0272 (.0438)	–.0264 (.0443)
3. Household Income			.0186 (.0112)	–.0097 (.0146)	–.0125 (.0151)	–.0127 (.0153)
4. Starting Pass Rate				.609*** (.216)	.589** (.230)	.582** (.233)
5. District Setting						
City					—	—
Suburban					.0040 (.0302)	.0054 (.0309)
Town					.0203 (.0370)	.0233 (.0391)
Rural					–.0210 (.0348)	–.0182 (.0368)
6. Population Density 2021						.0031 (.0120)
Constant	.621*** (.0263)	.675*** (.0382)	.648*** (.0410)	.453*** (.0791)	.473*** (.0932)	.474*** (.0942)
Observations	67	67	67	67	67	67
R^2	.237	.278	.308	.387	.411	.412

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 20. *Regression Model for Mathematics Student Growth for Grade 5*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.172*** (.0476)	–.174*** (.0467)	–.169*** (.0459)	–.158*** (.0468)	–.140**(.0554)	–.149** (.0581)
2. Title I (%)		–.0694* (.0372)	–.0315 (.0416)	–.0237 (.0421)	–.0328 (.0440)	–.0312 (.0444)
3. Household Income			.0200* (.0105)	.0089 (.0145)	.0105 (.0152)	.0101 (.0153)
4. Starting Pass Rate				.239 (.214)	.290 (.231)	.274 (.234)
5. District Setting						
City					—	—
Suburban					–.0060 (.0303)	–.0032 (.0310)
Town					.0246 (.0372)	.0308 (.0392)
Rural					.0093 (.0350)	.0152 (.0369)
6. Population Density 2021						.0064 (.0121)
Constant	.484*** (.0249)	.534*** (.0363)	.505*** (.0387)	.429*** (.0786)	.407*** (.0937)	.410*** (.0945)
Observations	67	67	67	67	67	67
R^2	.167	.210	.253	.267	.278	.282

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 21. *Regression Model for Mathematics Student Growth for Elementary*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.209*** (.0382)	–.211*** (.0373)	–.206*** (.0360)	–.190*** (.0357)	–.181*** (.0422)	–.187*** (.0443)
2. Title I (%)		–.0612** (.0297)	–.0228 (.0326)	–.0112 (.0321)	–.0191 (.0336)	–.0180 (.0339)
3. Household Income			.0203** (.0083)	.0038 (.0110)	.0039 (.0116)	.0036 (.0117)
4. Starting Pass Rate				.354** (.163)	.387** (.176)	.375** (.179)
5. District Setting						
City					—	—
Suburban					.0021 (.0231)	.0040 (.0236)
Town					.0239 (.0284)	.0282 (.0299)
Rural					.0057 (.0267)	.0098 (.0281)
6. Population Density 2021						.0045 (.0092)
Constant	.578*** (.0200)	.622*** (.0290)	.592*** (.0304)	.479*** (.0600)	.464*** (.0714)	.467*** (.0721)
Observations	67	67	67	67	67	67
R^2	.315	.358	.414	.455	.465	.467

Note: Standard errors are in parentheses.
$*p < 0.1$. $**p < .05$. $***p < .01$

Table 22. *Regression Model for Mathematics Student Growth for Grade 6*

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
1. Minority Enrollment	–.201*** (.0501)	–.205*** (.0518)	–.211*** (.0500)	–.177*** (.0519)	–.150** (.0607)	–.154** (.0633)
2. Title I (%)		.0134 (.0381)	.0454 (.0392)	.0462 (.0384)	.0406 (.0393)	.0403 (.0397)
3. Household Income			.0251** (.0105)	.0014 (.0159)	.0024 (.0168)	.0022 (.0170)
4. Starting Pass Rate				.424* (.217)	.478** (.226)	.471** (.230)
5. District Setting						
City					—	—
Suburban					.0234 (.0318)	.0248 (.0325)
Town					.0300 (.0370)	.0332 (.0397)
Rural					.0427 (.0357)	.0457 (.0382)
6. Population Density 2021						.0030 (.0126)
Constant	.465*** (.0265)	.462*** (.0283)	.452*** (.0277)	.301*** (.0818)	.246** (.0967)	.248** (.0979)
Observations	67	67	67	67	67	67
R^2	.199	.200	.266	.309	.325	.326

Note: Standard errors are in parentheses.
*$p < 0.1$. **$p < .05$. ***$p < .01$

Table 23. *Regression Model for Mathematics Student Growth for Grade 7*

Variable	Model					
	1	2	3	4	5	6
1. Minority Enrollment	–.187*** (.0492)	–.201*** (.0504)	–.207*** (.0486)	–.203*** (.0519)	–.218*** (.0608)	–.206*** (.0631)
2. Title I (%)		.0444 (.0371)	.0763** (.0381)	.0764* (.0384)	.0725* (.0394)	.0734* (.0395)
3. Household Income			.0250** (.0102)	.0224 (.0159)	.0187 (.0169)	.0194 (.0170)
4. Starting Pass Rate				.0468 (.217)	.0180 (.227)	.0404 (.229)
5. District Setting						
City					—	—
Suburban					.0107 (.0318)	.0064 (.0324)
Town					–.0241 (.0371)	–.0344 (.0396)
Rural					–.0014 (.0358)	–.0111 (.0381)
6. Population Density 2021						–.0096 (.0126)
Constant	.390*** (.0260)	.379*** (.0276)	.369*** (.0269)	.352*** (.0818)	.372*** (.0968)	.365*** (.0976)
Observations	67	67	67	67	67	67
R^2	.182	.200	.269	.270	.285	.292

Note: Standard errors are in parentheses.
*p < 0.1. **p < .05. ***p < .01

Table 24. *Regression Model for Mathematics Student Growth for Grade 8*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.106 (.0738)	–.0730 (.0743)	–.0814 (.0712)	–.0435 (.0746)	–.0325 (.0862)	–.0338 (.0900)
2. Title I (%)		–.105* (.0548)	–.0549 (.0558)	–.0540 (.0552)	–.0679 (.0559)	–.0680 (.0564)
3. Household Income			.0396** (.0150)	.0127 (.0229)	.00843 (.0239)	.00835 (.0242)
4. Starting Pass Rate				.481 (.312)	.502 (.322)	.500 (.327)
5. District Setting						
City					—	—
Suburban					.0420 (.0451)	.0424 (.0462)
Town					–.0070 (.0526)	–.0059 (.0564)
Rural					.0511 (.0508)	.0520 (.0542)
6. Population Density 2021						.0010 (.0179)
Constant	.451*** (.0390)	.478*** (.0406)	.462*** (.0394)	.291** (.118)	.255* (.137)	.255* (.139)
Observations	67	67	67	67	67	67
R^2	.031	.084	.175	.205	.243	.243

Note: Standard errors are in parentheses.
$*p < 0.1$. $**p < .05$. $***p < .01$

Table 25. *Regression Model for Mathematics Student Growth for Middle School*

	Model					
Variable	1	2	3	4	5	6
1. Minority Enrollment	–.165*** (.0376)	–.160*** (.0389)	–.166*** (.0349)	–.141*** (.0360)	–.134*** (.0413)	–.131*** (.0431)
2. Title I (%)		–.0158 (.0286)	.0222 (.0273)	.0229 (.0266)	.0151 (.0267)	.0152 (.0270)
3. Household Income			.0299*** (.0074)	.0122 (.0111)	.0098 (.0115)	.00997 (.0116)
4. Starting Pass Rate				.317** (.151)	.333** (.154)	.337** (.156)
5. District Setting						
City					—	—
Suburban					.0254 (.0216)	.0245 (.0221)
Town					–.0004 (.0252)	–.0024 (.0270)
Rural					.0308 (.0243)	.0289 (.0260)
6. Population Density 2021						–.0019 (.0086)
Constant	.436*** (.0199)	.440*** (.0212)	.427*** (.0193)	.315*** (.0568)	.291*** (.0657)	.289*** (.0666)
Observations	67	67	67	67	67	67
R^2	.228	.231	.391	.431	.467	.468

Note: Standard errors are in parentheses.
*$p < 0.1$. **$p < .05$. ***$p < .01$

Table 26. *Effect Sizes (Cohen's* d*) in Comparing ELA and Mathematics*

Elementary		Middle	
Grade	Cohen's *d*	Grade	Cohen's *d*
3	–3.11	6	–3.46
4	–3.32	7	–2.49
5	–4.16	8	–2.69
Starting Pass Rate	3.21	Starting Pass Rate	2.53
Average Growth	–4.15	Average Growth	–4.03

References

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Alexander, K. L., & Griffin, L. J. (1976). School district effects on academic achievement: A reconsideration. *American Sociological Review*, *41*(1), 144–152. https://doi.org/10.2307/2094378

Au, W. (2011). Teaching under the new Taylorism: high-stakes testing and the standardization of the 21st century curriculum. *Journal of Curriculum Studies*, *43*(1), 25–45. https://doi.org/10.1080/00220272.2010.521261

Borman, G. D., & D'Agostino, J. V. (1996). Title I and student achievement: A meta-analysis of federal evaluation results. *Educational Evaluation and Policy Analysis, 18*(4), 309–326. https://doi.org/10.3102/01623737018004309

Burdick-Will, J., & Logan, J. R. (2017). Schools at the rural-urban boundary: Blurring the divide? *The ANNALS of the American Academy of Political and Social Science, 672*(1), 185–201. https://doi.org/10.1177/0002716217707176

Chingos, M. M., Whitehurst, G. J., & Gallaher, M. R. (2015). School districts and student achievement. *Education Finance and Policy*, *10*(3), 378–398.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences* (2nd ed.). Lawrence Erlbaum Associates.

Croft, M., Ali, T. T., & O'Keefe, B. (2023). *Testing the waters: Insights into parent perspectives on through-year assessment implementation*. Bellwether. https://doi.org/10.62137/HESN4546

Data Quality Campaign. (2022, May 05). *What Are Through-Year Assessments? Emerging Trends in Statewide Assessments*. https://dataqualitycampaign.org/what-are-through-year-assessments/

Deno, S. L. (2003). Developments in curriculum-based measurement. *The Journal of Special Education, 37*(3), 184–192. https://doi.org/10.1177/00224669030370030801

Deno, S. L., Reschly, A. L., Lembke, E. S., Magnusson, D., Callender, S. A., Windram, H., & Stachel, N. (2009). Developing a school-wide progress-monitoring system. *Psychology in the Schools, 46*(1), 44–55. https://doi.org/10.1002/pits.20353

Driscoll, D., Halcoussis, D., & Svorny, S. (2003). School District size and student performance. *Economics of Education Review*, *22*(2), 193–201. https://doi.org/10.1016/s0272-7757(02)00002-x

Espin, C. A., Scierka, B. J., Skare, S., & Halverson, N. (1999). Criterion-related validity of curriculum-based measures in writing for secondary school students. *Reading & Writing Quarterly, 15*(1), 5–27. https://doi.org/10.1080/105735699278279

Fahle, E. M., & Reardon, S. F. (2018). How much do test scores vary among school districts? New estimates using population data, 2009–2015. *Educational Researcher, 47*(4), 221–234. https://doi.org/10.3102/0013189x18759524

Fan, X., & Chen, M. J. (1999). Academic achievement of rural school students: A multi-year comparison with their peers in suburban and urban schools. *Journal of Research in Rural Education, 15*(1), 31–46.

Florida Department of Education. (2023a). *2022–23 Funding for Florida school districts*. https://www.fldoe.org/core/fileparse.php/7507/urlt/Fefpdist.pdf

Florida Department of Education. (2023b, June 29). *Florida completes first year of first-in-nation progress monitoring assessments*. https://www.fldoe.org/newsroom/latest-news/florida-completes-first-year-of-first-in-nation-progress-monitoring-assessments.stml

Foegen, A., & Deno, S. L. (2001). Identifying growth indicators for low-achieving students in middle school mathematics. *The Journal of Special Education*, *35*(1), 4–16. https://doi.org/10.1177/002246690103500102

Foegen, A., Stecker, P. M., Genareo, V. R., Lyons, R., Olson, J. R., Simpson, A., Romig, J. E., & Jones, R. (2016). Using an online tool for learning about and implementing algebra progress monitoring. *Teaching Exceptional Children*, *49*(2), 106–114. https://doi.org/10.1177/0040059916674327

Fritz, C. O., Morris, P. E., & Richler, J. J. (2012). Effect size estimates: Current use, calculations, and interpretation. *Journal of Experimental Psychology: General*, *141*(1), 2-18. https://psycnet.apa.org/doi/10.1037/a0024338

Hayes III, J. L. (2018). *Realizing the ideal school district size: How district size affects achievement and expenditure* [Doctoral dissertation, Illinois State University]. ISU Milner Library ReD. https://ir.library.illinoisstate.edu/etd/827/

Houston, D. M., & Henig, J. R. (2021). The effects of student growth data on school district choice: Evidence from a survey experiment. *American Journal of Education*, *127*(4), 563–595. https://doi.org/10.1086/715003

Leithwood, K., Sun, J., & McCullough, C. (2019). How school districts influence student achievement. *Journal of Educational Administration*, *57*(5), 519–539. https://doi.org/10.1108/jea-09-2018-0175

Logan, J. R., & Burdick-Will, J. (2017). School segregation and disparities in urban, suburban, and rural areas. *The ANNALS of the American Academy of Political and Social Science*, *674*(1), 199–216. https://doi.org/10.1177/0002716217733936

Looney, J. W. (2011). *Integrating formative and summative assessment: Progress toward a seamless system?* (Report no. 58). OECD Publishing. http://dx.doi.org/10.1787/5kghx3kbl734-en

Mayer, S. E. (1997). *What money can't buy: Family income and children's life chances*. Harvard University Press.

McCall, M. S., Hauser, C., Cronin, J., Kingsbury, G. G., & Houser, R. (2006). *Achievement gaps: An examination of differences in student achievement and growth*. Northwest Evaluation Association.

Office of Economic and Demographic Research. (2024). Florida's Resident Population. *The Florida Legislature Econographic News*, *1*, 1-3. https://edr.state.fl.us/Content/population-demographics/reports/econographicnews_2024_Volume%201.pdf

Owens, A. (2018). Income segregation between school districts and inequality in students' achievement. *Sociology of Education*, *91*(1), 1–27. https://doi.org/10.1177/0038040717741180

Quenemoen, R., Thurlow, M., Moen, R., Thompson, S., & Morse, A. B. (2004). *Progress monitoring in an inclusive standards-based assessment and accountability system* (Synthesis Report No. 53). National Center on Educational Outcomes, University of Minnesota.

Ready, D. D. (2013). Associations between student achievement and student learning. *Educational Policy*, *27*(1), 92–120. https://doi.org/10.1177/0895904811429289

Reardon, S. F., Fox, L., & Townsend, J. (2015). Neighborhood income composition by household race and income, 1990–2009. *The ANNALS of the American Academy of Political and Social Science, 660*(1), 78–97. https://doi.org/10.1177/0002716215576104

Reardon, S. F. (2018). *Educational opportunity in early and middle childhood: Variation by place and age* [CEPA Working Paper No.17-12]. http://cepa.stanford.edu/wp17-12

Reardon, S. F. (2016). School District Socioeconomic Status, Race, and Academic Achievement. Stanford Center for Education Policy Analysis, Stanford University. https://cepa.stanford.edu/sites/default/files/reardon%20district%20ses%20and%20achievement%20discussion%20draft%20april2016.pdf

Roza, M. (2005). *Strengthening Title I to help high-poverty schools* [CRPE Working Paper]. Center on Reinventing Public Education. https://files.eric.ed.gov/fulltext/ED485895.pdf

Shinn, M. R. (Ed.). (1998). *Advanced applications of curriculum-based measurement.* Guilford Press.

State of Florida. (2021, September 14). *Governor DeSantis announces end of the high-stakes FSA testing to become the first State in the nation to fully transition to progress monitoring*. https://www.flgov.com/eog/news/press/2021/governor-desantis-announces-end-high-stakes-fsa-testing-become-first-state-nation

Stecker, P. M., Lembke, E. S., & Foegen, A. (2008). Using progress-monitoring data to improve instructional decision-making. *Preventing School Failure: Alternative Education for Children and Youth*, *52*(2), 48–58. https://doi.org/10.3200/PSFL.52.2.48-58

Student Assessments, Fla. Stat. § 1048 (2022). https://www.flsenate.gov/Session/Bill/2022/1048/

Unnever, J. D., Kerckhoff, A. C., & Robinson, T. J. (2000). District variations in educational resources and student outcomes. *Economics of Education Review*, *19*(3), 245–259. https://doi.org/10.1016/s0272-7757(99)00043-6

van der Klaauw, W. (2008). Breaking the link between poverty and low student achievement: An evaluation of Title I. *Journal of Econometrics*, 142, 731–756. https://doi.org/10.1016/j.jeconom.2007.05.007

Wright, R. (2010). State education finance and governance profile: Florida. *Peabody Journal of Education*, *85*(1), 61–65. https://doi.org/10.1080/01619560903523797

Yan, W. (2006). *Is Bigger Better? A comparison of rural school districts*. Center for Rural Pennsylvania.