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The Relationship of Special Education Placement and Academic Outcomes in Southeast Louisiana

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ABSTRACT

Special education placement is a debate amongst parents, educators, and policymakers. The Least Restrictive Environment (LRE) is a federal law that provides a guiding principle to assist the Individualized Education Plan (IEP) team guidance when considering placement for a student with an exceptionality. Student placement decisions affect school administrators, teachers, parents, and students. The purpose of the mixed methods study was to determine if students with disabilities who were taught in the inclusive setting yielded higher standardized test scores compared to students who were taught in the resource setting. The researcher analyzed the standardized test scores, in the areas of English Language Arts of fourth grade elementary school special education students, excluding the classification of gifted, talented students, and Intellectual Disability-Severe, in southeast Louisiana that participate in the inclusive and resource settings to discover which group of students yielded higher percentage gains. This study favored a quantitative approach that was structured to draw specific, data-driven conclusions about the relationship between student placement and academic achievement. This study also acknowledges that factors such as gender, race, SES, and English proficiency can influence academic outcomes.

Keywords: special education, resource, inclusion, academic achievement, LEAP 2025, Least Restrictive Environment, curriculum, standardized assessment.

INTRODUCTION

Special education placement decisions have been an aspect of special education law since 1975 when there was concern about children with disabilities historically being segregated and denied a quality education (Johansen, 2018). Federal legislation mandates many decisions about services, supports, and classroom placement. The law states that the placement should be to the "maximum extent appropriate with nondisabled peers" (Individuals with Disabilities Act, 2024, General section, para. 2). Student placement is a controversy that is frequently contested in due process hearings and federal courts.

There are two common settings used when placing students with disabilities: (a) a regular education inclusion classroom and (b) a resource classroom where students are pulled out to receive specialized instruction and academic remediation (Hogan-Young, 2013). Additional

terms used for student placement include mainstream and pullouts. Prior researchers have debated which setting is the most appropriate for student achievement (Baker, et al., 1994; Elbaum & Vaughn 2001; King-Sears, et al., 2021; McLeskey, Henry, & Axelrod, 1999). Inclusive classrooms (or mainstreaming) are classrooms in which students, regardless of their challenges, are in the same setting. Resource classrooms (or pullouts) are tailored to a smaller teacher to student ratio to address academic or behavioral concerns. It is important to understand what educational setting is the most appropriate for academic achievement because it can assist in developing and implementing instructional strategies for students with disabilities.

Least Restrictive Environment

The debate about how a student with a disability is provided services in the Least Restrictive Environment (LRE) is one of the most volatile issues in special education contested in due process. The current debate can be understood through the historical analysis of changes in the law and interpretation impacting students with disabilities. The debate over student placement revolves around the definition of the LRE and its relationship to free and appropriate education (FAPE). The LRE is defined as "the educational setting that provides the necessary support and services to enable a student with a disability to receive an appropriate education while allowing the student to be educated with non-disabled peers to the greatest extent appropriate" (Turnbull et al., 2020, p. 181). The principle of LRE is based on the idea that students with disabilities should be provided with an education in the least restrictive setting possible, where they can be included with their non-disabled peers to the fullest extent possible.

There are differing opinions on balancing the principles of inclusion and LRE when determining the appropriate placement for students with disabilities. Research indicates that various placement models can have positive academic impacts on students with disabilities. Previous research has shown that many professionals have concluded that the preferred placement for students with disabilities is in the general education classroom (McLeskey & Waldron, 1995). The TIES Center conducted a study that students included in general education classrooms made significantly more educational progress in literacy and mathematics (Wakeman et. al., 2022). In contrast, Alquraini and Gut (2012) and Norwich (2014) concluded that future research was needed to determine the appropriate instructional setting for students with disabilities and many factors may impact the extent to which inclusive practice can be successfully implemented.

Siperstein et al. (2018) discussed the advantages of full inclusion for students with disabilities, including increased academic achievement, social acceptance, and self-esteem. They argue that inclusive education provides students with disabilities with the same opportunities as their peers, allowing them to participate in all aspects of school life and fostering a sense of belonging. The authors also note that separate special education classrooms can perpetuate negative stereotypes and stigma and that full inclusion can help to break down these barriers. A study by Derico (2017) found that students with disabilities in inclusion classrooms had higher scores on standardized tests than those in resource rooms. According to a study by Cole et al. (2004), 41.7% of students with learning disabilities showed improvement in math when placed in general education classes, compared to 34% in traditional special education settings. Sharma et al. (2016) found that students with disabilities educated in inclusive settings generally achieve higher academic outcomes, exhibit better attendance, and display improved

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behavior compared to those in segregated settings. In turn, general education students develop respect for others with diverse characteristics and unique abilities.

In comparison, additional data have shown that students may learn best in a separate setting for core instruction. In a resource classroom, instruction is tailored to meet the needs of the learner and it is a smaller student-to-teacher ratio. Abu and Mulhem (1998) explored the efficacy of resource rooms and found improvements in reading, writing, arithmetic, and reductions in the behavioral problems of learners with learning disabilities. Giangreco et al. (2009) contend that some students may benefit from more targeted and intensive support in a resource setting rather than being fully included in a general education classroom. The authors cite research indicating that students with disabilities in resource settings may receive more individualized attention and specialized instruction, leading to greater academic and social progress. Obiakor et al. (2012) believed students with disabilities benefit from the resource setting, wherein students are removed from the general education classroom and provided their academic services in a separate classroom. Research also suggests that resource settings can provide a supportive environment for students with disabilities to build skills and gain confidence before transitioning to a more inclusive setting (Kesler, 2019).

Educational Risk Factors

It is well-documented that students in special education are represented along several dimensions, including gender, race, ethnicity, and socioeconomic status (Losen & Orfield, 2002; Shifrer et al., 2011). According to the National Center for Educational Statistics (NCES), as of the 2022-2023 school year, about 15% of all public-school students in the United States received special education services, which is approximately 7.5 million students.

Besides the debate on whether standardized testing is a good indicator of student success, there is also debate on whether certain aspects of life affect a student's test score. Special education students face a variety of risk factors that can negatively impact their education. These risk factors may include poverty, gender bias, limited English proficiency, and being a member of a minority group (Losen & Gillespie, 2012).

Poverty is a significant risk factor for special education students. Children living in poverty often lack access to essential resources and opportunities crucial for educational success, including quality early childhood education, adequate healthcare, and nutritious food (Evans, 2004). Children in poverty are more prone to experiencing environmental stressors such as substandard housing and neighborhood violence, factors that can significantly impact their cognitive and emotional development (Evans, 2004). Poverty not only contributes to the disproportionate overrepresentation of students receiving special education services, but also negatively impacts students' learning abilities and teachers' instructional capacity (Morgan et al., 2009). Lower-income families often have fewer educational opportunities.

Schools located in economically disadvantaged areas receive less funding compared to suburban schools, primarily due to lower local taxes and funding allocations. Schifter et al. assumed a positive correlation between poverty and special education. According to McDonnall and Crudden (2019), "students with disabilities from low-income families and/or racial or ethnic minority backgrounds are more likely to experience academic and social challenges than their more advantaged peers" (p. 3). Research indicates that children from low socioeconomic

status (SES) households develop academic skills at a slower rate compared to children from higher SES groups (Morgan et al., 2009). Research has continued to link students with low SES to a slower rate of academic progress and academic achievement compared to higher SES communities (American Psychological Association, 2022). While research indicates that children from low-income families could be more likely to experience a disability due to limited health care and access to nutritional needs, there is limited research examining identification and placement of special education for students from low-income backgrounds (Schifter et al., 2019).

English Language Learners (ELs) are more likely to be referred to special education and to be overrepresented in certain disability categories, such as specific learning disabilities (Ortiz, 2008). Additionally, ELs may struggle with understanding and communicating in the classroom due to language barriers, which can negatively impact their academic performance (Espinosa, 2012). As of fall 2021, the National Center on Education Statistics reports that 5.3 million public school students (10.6%) are ELs. In the state of Louisiana, the National Center for Education Statistics reports that 4.9% of public-school students are ELs learners. The National Center on Education Statistics presents data from all 50 states, including the District of Columbia, of identified ELs learners during the fall of 2021. Their data reveals that there was a higher percentage of ELs learners in lower grades than those in upper grades (National Center for Education Statistics, 2023).

There have been disagreements on how gender plays a role in students' test scores. According to studies in the past, males score higher on science and math tests while females score high on language and reading tests (Pope & Sydnor 2010). A significant amount of literature has confirmed gender-based differences in teacher treatment in the classroom (Baker, 1994; Dee, 2004; Dee, 2007; Krieg, 2005; Whitmire & Bailey, 2010). A recent study by Stanford education scholars did a study that indicated that males scored higher on a standardized test that included multiple-choice and females scored higher on a standardized test with open-ended questions even when controlling for gender achievement gaps (Reardon et al., 2018).

For the past 40 years, research has examined the influence of race and ethnicity on the designation of students for special education services. Some researchers point to cultural biases in tests (Losen & Orfield, 2002). Other researchers argue that race is no factor in academic performance (Dee, 2004). Johnson and Johnson (2002), suggest that poor and minority students in Louisiana are impacted disparately because of high-stakes testing. In Louisiana, minorities make up a large portion of the population, with Black being the largest minority group at 42.1%. In addition, the 2021 enrollment of students in Louisiana was 9.4% of Hispanic students, 43% White, 1.6% Asian, 0.6% American Indian, 0.1% Native American or Other Pacific Insider, and 3.3% of more than one race (Kid Count Data Center, 2022b).

Standardized Testing

In accordance with the NCLB in 2002, all students are required to participate in standardized assessments. The act was replaced by *Every Student Succeeds Act* (ESSA) in 2015 (U.S Department of Education, 2021c). Under ESSA, children in grades three through eight are required to undergo annual assessments in math and English language arts, with one additional assessment in high school. Additionally, students are assessed three times in science throughout their academic career.

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Special Education in Louisiana

The relationship between special education placement and student outcomes in Southeast Louisiana is a topic of significant concern for educators, parents, and policymakers. Despite the efforts to improve special education services, many students in Southeast Louisiana continue to struggle academically and experience poor outcomes. In 2022, Louisiana remained near the bottom rank at 47th nationally for pre-K through 12th-grade education. According to the Louisiana Department of Education (2022), fewer than 40% of students met the benchmark (a score of Mastery or above) on the English section of the 2021-2022 LEAP2025 assessment. In 2024, the Louisiana Department of Education reported notable gains and moved to a national ranking of 40th for pre-K through 12th-grade education. Louisiana improved their overall mastery score by 1 point during the 2023-2024 school year.

Louisiana law provides a range of specific special education placements and programs, including resource rooms, self-contained classrooms, and inclusion programs (Louisiana Department of Education, n.d.). Per Louisiana Section XCVII-117, inclusion instruction is inside the regular classroom 80 percent or more of the day. The 20 percent of the time outside of the general education classroom can include services with a special education teacher provided in a resource classroom (casetext, 2022). According to Louisiana Section XCVII-117, a resource classroom is considered to be inside the regular class no more than 79 percent of the day and no less than 40 percent of the day. Resource classrooms are services provided by special education or related services providers within a designated resource room, or through part-time instruction in a regular classroom setting (casetext, 2022).

Special education law in Louisiana is governed by federal legislation such as the IDEA of 2004, as well as state-specific regulations and guidelines (Louisiana Department of Education, n.d.). These laws and regulations outline the criteria and procedures for identifying, assessing, and placing students with disabilities in appropriate educational settings. Under Louisiana law, students with disabilities are entitled to a free, appropriate public education (FAPE) in the LRE possible (Louisiana Department of Education, n.d.). This means that students with disabilities must be educated alongside their non-disabled peers to the maximum extent appropriate and that placement in separate classrooms or schools should only be considered when necessary to meet the individual needs of the student.

In Louisiana public schools, all students must endure standardized assessments to ensure they are meeting state or federal standards. The LEAP 2025 is administered to students in grades 3-8 and 10, and scores are used to determine student promotion and graduation requirements. According to the Louisiana Department of Education (2021), the LEAP is a criterion-referenced testing assessment. The assessment measures a student's academic growth in ELA, Mathematics, Science, and Social Studies. The state requires all students defined by the IDEA to be assessed by the LEAP, except students that meet the criteria to take the alternative assessment, known as the LEAP Connect (Louisiana Department of Education, 2021).

Purpose of the Study

The purpose of the quantitative study was to investigate if elementary students with a disability who were taught in the inclusive setting yielded higher Louisiana LEAP 2025 achievement scores compared to students with a disability who were taught in the resource setting. By examining the relationship between placement in inclusion versus resource classrooms and

academic performance in English/Language Arts, this study provides insight into the effectiveness of different instructional approaches with students that receive special education services. This study also examined how SES, race/ethnicity, English proficiency, and race impact academic performance for students with exceptionalities in southeast Louisiana.

This research study is based on the need for more information related to special education student placement and student achievement. Academic achievement provides key information about students' mastery of standards. One way to measure student achievement is through standardized testing. Statewide testing provides a comparison of an accurate, unfiltered measure of what a student knows (Churchill, 2024). Educational researchers have devoted extensive research to the implications of statewide testing and its impact on students with learning disabilities. Different states use different assessments and methods for evaluating student achievement and progress (Decuir, 2012). Research has shown that test performance is affected by SES, gender, race, and English proficiency (Kamara & Dadhabai, 2022). There is a gap in the literature about how these factors combined with a student's classroom placement can affect academic achievement.

Since standardized testing is an important factor in school performance scores, it is critical to understand where instruction takes place for students who have a learning disability. Lack of effective instruction can limit opportunities for students with and without disabilities. On both sides of the special education placement question, there are advantages and disadvantages. There cannot be a blanket statement that a certain environment is beneficial in order for a child's educational needs to be fulfilled. Every child and circumstance are distinct.

METHODS

A case study approach was utilized in the study. Each case functions as a tool to explore the characteristics within the respective district for student achievement through LEAP 2025 scores. This study aimed to address the following research questions:

1. How do LEAP 2025 Reading/Language Arts standardized test scores differ between fourth-grade students in two Southeast Louisiana school districts identified with an exceptionality under Bulletin 1508, excluding the classification of gifted, talented students, and Intellectual Disability-Severe, who receive ELA instruction in the inclusion classroom versus students with learning disabilities receiving ELA instruction in the resource classroom after controlling for socioeconomic status, gender, English proficiency, and race?
2. How are the five subcategory scores: (a) Literacy Text, (b) Informational Text, (c) Vocabulary, (d) Written Expression, and (e) Knowledge and Use of Language Conventions linked to the scaled score?

The LEAP 2025 was the instrument used for this study. Archival LEAP 2025 data was collected from District 1 and District 2 to examine how learning can differ among students who receive instruction in the inclusion classroom or the resource classroom. A benefit of using archival data for the LEAP 2025 assessment is that the data is reliable and valid since the data was obtained from the Louisiana Department of Education (LDOE). The data was screened and thoroughly verified by LDOE before it was made publicly available. After the data was cleaned and before the statistical test was conducted, every assumption was checked to determine if it

holds true for the data. The analyses in jamovi software ran the assumption checks simultaneously with the test.

A limitation of using the archival LEAP data is that the data does not encompass information about teaching methods, classroom dynamics, individual student characteristics, or school-level factors that could influence academic performance. The data was limited by its sampling procedures, not representing the entire student population of students with disabilities. Pannucci & Wilkins (2010) state that "bias can occur at any phase of research, including study design or data collection, as well as in the process of data analysis and publication (p.2)." In addition, biases might exist in terms of certain demographics, regions, or student groups, affecting the generalizability of findings.

The independent variable (IV) for the study was student placement. The IV is defined as students in fourth-grade who participate in the LEAP 2025 assessment that receive instruction in the resource or inclusion placement. The IV is dichotomous indicating resource or inclusion placement. The primary dependent variable (DV) for the study is the LEAP 2025 overall scaled score. According to the Louisiana Department of Education (2022f), a scaled score on the LEAP 2025 ranges from 650-850. Mastery begins at a scaled score of 750. The 750 requirement is comparable across different grade level assessments. The DV is a continuous outcome.

For Research Question 1, the researcher conducted a hierarchical multiple regression through the statistical software jamovi (The jamovi project, 2023). The hierarchical multiple regression was used to examine the significant variance in the dependent variable (DV) after accounting for all other variables. This method allows for multiple predictors, enhancing prediction accuracy and controlling for additional factors. (Ross & Wilson, 2017). A hierarchical multiple regression was utilized since the researcher is controlling for demographic factors and the researcher wants to isolate the effect of the academic placement. The model for this regression is

$$Y=B0+B1X1+B2X2+B3X3+B4X4+B5X5+ Ɛ$$

X1 is the ELA LEAP 2025 placement variable score. X2 through X5 are the controlled variables. The controlled variable SES will be operationalized as student's free or reduced lunch status. The researcher combined free and reduced lunch as economically disadvantaged. Race was operationalized as White and Non-White since White and Black or African American are the dominant races in both districts. Gender was operationalized as male or female. English proficiency was operationalized as English proficient and non-English proficient. The researcher is not interested in the relationships of the controlled variables, rather than acknowledging they exist and can influence academic achievement. The controlled variables are defined as:

- X2: Race (White and Non-White)
- X3: Gender (Male or Female)
- X4: SES (Economically Disadvantaged and Not Economically Disadvantaged)
- X5: English Proficiency (English proficient and non-English proficient).

For Research Question 2, the researcher ran a multiple linear regression to investigate how the five subcategory scores: (a) Literacy Text, (b) Informational Text, (c) Vocabulary, (d) Written Expression, and (e) Knowledge and Use of Language Conventions were linked to the scaled scores(Louisiana Department of Education, 2022j). Each subcategory is given a rating of Strong, Moderate, or Weak that is linked to the raw scores within the subcategory. The researcher conducted a hierarchical multiple regression to investigate how the subcategories are linked to the standard scores. The subcategories were considered nominal data. Strong was coded a 3, Moderate was coded as 2, and Weak was coded as 1.

District 1 was chosen because inclusion is the primary placement service model in the parish. Inclusion is a model District 1 strives to deliver unless the IEP team determines another placement is best for the student. The vast percentage of students with disabilities in District 1 are delivered instruction through the inclusion model. District 2 was chosen because the resource classroom is the primary placement service model in the parish. Although inclusion is an option for students with disabilities, the majority of students receive their reading and/or math instruction in a separate setting in District 2.

The target population for this sample is fourth grade students identified with an exceptionality under Bulletin 1508 who receive instruction in the inclusion classroom or the resource classroom in District 1 and District 2. The researcher did not include students with the classification of gifted, talented students, and Intellectual Disability-Severe outlined in Bulletin 1508. The students in this sample participated in the LEAP 2025 assessment for the 2020-2021, 2021-2022, and 2022-2023 school years. District 1 and District 2 are comparable in size and are neighboring districts.

RESULTS

For the 2020-2021 school year, the sample in District 1 consisted of 471 students. For the 2021-2022 school year, the sample in District 1 consisted of 426 students. For the 2022-2023 school year, the sample in District 1 consisted of 463 students. District 1 predominantly comprises White students, outnumbering Non-White students. Additionally, throughout all three years, more than half of the student population in District 1 were classified as economically disadvantaged. Table 1.1 provides a visual representation.

Table 1.1: Frequencies District 1

	2020-2021		2021-2022		2022-2023	
Characteristic	**n**	**%**	**n**	**%**	**n**	**%**
Gender						
Male	315	67%	281	66%	223	48%
Female	156	33%	145	34%	240	52%
Race						
White	301	64%	290	68%	294	63%
Non-White	170	36%	136	32%	169	37%
Economically Disadvantaged						
Yes	306	65%	252	59%	365	79%
No	165	35%	174	41%	98	21%
English Proficient						

Yes	466	99%	421	99%	453	98%
No	5	1%	5	1%	10	2%

For the three included school years, District 2 saw a decline in student enrollment. In the 2020-2021 academic year, there were 451 students, followed by 401 students in 2021-2022, and 361 students in 2022-2023.

District 2 exhibited a demographic trend where the number of Non-White students surpasses that of White students. Additionally, in the 2020-2021 and 2021-2022 school years, there was a higher proportion of male students compared to female students. Table 1.2 provides a visual representation.

Table 1.2: Frequencies District 2

	2020-2021		2021-2022		2022-2023	
Characteristic	**n**	**%**	**n**	**%**	**n**	**%**
Gender						
Male	228	51%	272	68%	169	47%
Female	223	49%	129	32%	192	53%
Race						
White	142	31%	188	47%	141	39%
Non-White	309	69%	212	53%	220	61%
Economically Disadvantaged						
Yes	293	65%	192	48%	236	65%
No	157	35%	209	52%	125	35%
English Proficient	451	100%	382	95%	291	81%
Yes	0	0%	19	47%	70	19%
No						

District 1 had fluctuating enrollment numbers, while District 2 experienced a consistent decline. District 1 had more White students than Non-White students, whereas District 2 had more Non-White students. Economic disadvantage was a prevalent factor in District 1, with over 50% of students classified as economically disadvantaged in all three years, while District 2 showed over 50% of students classified as economically disadvantaged during the 2020-2021 and 2023-2023 school years.

Data Cleaning and Pre-Assumption Checks

The assumption of independence was met during the design phase and confirmed through visual inspection of the dataset to ensure each observation is not related to another. The researcher visually inspected boxplots for all included variables across datasets to identify potential outliers. A z-score analysis was conducted with z-scores exceeding 3.00 identified as potential outliers. All other assumptions were checked following the multiple regression analysis that was run using jamovi. The assumptions of linearity and homoscedasticity were checked through examining residual plots. Normality was also confirmed by examining the Q-Q plot and Shapiro-Wilk test. All predictors have non-zero variances. The Variance Inflation Factor (VIF) values were examined to identify any issues of collinearity. Cook's distance statistic was computed, and residual plots were also used to identify influential data.

Sample sizes were sufficient despite a large number of missing data in the 2020-2021 school year. There were 9 missing data points from District 1 and 11 missing data points from District 2. There were 26 missing data points from District 1 and 19 missing data points from District 2 for the 2021-2022 school year. Examination of box plots and z score analysis with and without outliers in all sets of data utilized indicated no significant existence of outliers. The z-score analysis confirmed this with z-scores exceeding 3. Based on these findings and the robustness in sample size, it is unlikely these observations would have a substantial impact on the results. Results for all other assumptions are located in Appendix E, F, and G.

2020-2021 LEAP Assessment Results

The researcher categorized the exported data into a comma separated value (.csv) data file for each school district and merged the data from each district into one datasheet. The researcher removed all personal identifying information from the spreadsheets. The datasheet was uploaded into jamovi. A computed variable column was added for the school district name column and each demographic variable. Each variable was coded as:

- District 1= 0; District 2: =1
- Gender: Female = 0; Male = 1
- Race: Non-White = 0; White = 1
- Socioeconomic Status (SES): Economically disadvantaged: Economically disadvantaged = 0; Not economically disadvantaged = 1
- English Proficiency: Not English Proficient = 0; English Proficient = 1

Assumptions for Examination of Demographics

After the final dataset was achieved for fourth-grade 2020-2021 ELA LEAP 2025 performance (ELA Scaled Score), the assumptions of linear regression were tested. Based on the frequencies only identifying five Non-English proficient students, the predictor was removed because there was not enough variation. The assumption of independence was met during the design phase and confirmed through visual inspection of the dataset to ensure each observation was not related to another. An examination of the residual plot for LEAP 2025 performance did not show a curvilinear relationship. The distribution of the residuals appeared to meet the assumption of linearity, and the spread of the residuals was also even across the distribution (i.e., data did not "cone") to support the assumption of homoscedasticity was met. Additionally, the tight fit of the residuals along with a Q-Q plot and results from Shapiro-Wilk ($p = 0.08$) confirm the assumption of normality. Durbin-Watson suggests there may be some dependency among the error terms (*0.88, 0.23*). The VIF values were relatively low and not problematic (VIF < 5) for all variables, which indicated a lack of collinearity. The VIF values suggest that no predictors were closely related. The VIF values were gender (*1.01*), race (*1.02*), and economic disadvantaged (*1.02*). No influential observations were indicated by Cook's distance diagnostic (*D = .01*).

Multiple Linear Regression for Examination of Demographics

A multiple linear regression was conducted to examine how learning can differ among students who receive instruction in the inclusion classroom or the resource classroom (Appendix E). The researcher began by running data for all four of the predictors (race, SES, gender, and English Proficiency). Based on the frequencies only identifying five Non-English proficient students, the predictor was removed because there was not enough variation. The researcher ran two

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models. Model 1 included gender, race, and SES. Model 1 was statistically significant, *F (3, 918) = 22.3, p = <.001, R^2= 0.07.* Model 2 compared the districts after controlling for the demographic variables. Model 2 was statistically significant, *F (4, 917) = 27.0, p = <.001, R^2= 0.11.* There is an 11% proportion of variance explained by the independent variable. The combination of predictors explains a significant variation in the ELA scaled scores. The prediction model is: scale score = 721.38 - 0.65 (gender) + 22.38 (race) + 3.31 (SES) + 14.76 (District).

Race was the strongest predictor with a coefficient of 22.38. Non-White is reported as a 0 and White is reported as a 1. It is estimated there will be an increase in ELA LEAP 2025 scaled scores by 22.38 points for a student when their value is changed from 0 to 1. After controlling for demographics, there is a 14.76-point difference between District 1 and District 2 of ELA scaled scores, indicating that the predicted scale score will increase by 14.76 points by participating in the resource district.

Assumptions for Examination of Subcategories

The assumption of independence was met during the design phase and confirmed through visual inspection of the dataset to ensure each observation was not related to another. The VIF values were relatively low and not problematic (VIF < 5) for all variables, which indicated a lack of collinearity. The VIF values suggest that no predictors were closely related. The VIF values were Literacy Text (*1.96*), Informational Text (*1.90*), Vocabulary (*1.89*), Written Expression (*3.48*), and Written Knowledge and Use of Language Conventions (*3.11*).

An examination of the residual plot for LEAP 2025 performance did not show a curvilinear relationship. The distribution of the residuals indicated that the spread of the residuals was even across the distribution (i.e., data did not "cone") and supported the assumption of homoscedasticity. The results of the Shapiro-Wilk test for normality indicated that the residuals were not normally distributed (p = <0.001). However, the Q-Q plot indicated a tight fit along the reference line. Therefore, the statistically significant result associated with the Shaprio-Wilk test was likely influenced by the large sample size. Consequently, based on the results of the Q-Q plot, the assumption of normality of residuals was accepted. Durbin-Watson suggests there is a positive autocorrelation (*0.68, 0.63*). No influential observations were indicated by Cook's distance diagnostic (D = .02).

Multiple Linear Regression for Examination of Subcategories

A multiple linear regression was conducted to investigate how the five subcategory scores: (a) Literacy Text, (b) Informational Text, (c) Vocabulary, (d) Written Expression, and (e) Knowledge and Use of Language Conventions are linked to the scaled scores. The researcher began by running data for all four of the predictors (race, SES, gender, and English Proficiency). Because the 2020-2021 data include only five non-English-speaking students, the predictor was removed because there was not enough variation. The researcher ran two models. Model 1 included gender, race, and SES combined for both districts. Model 1 was statistically significant, *F (4, 916) = 27.0, p = <.001, R^2= 0.10*. There is a 10% proportion of variance explained by the independent variable. The focus of Model 2 is on the ability of the five subcategories to explain and predict the total scaled score. The DV was the ELA scaled score. Model 2 was statistically significant, *F (9, 911) = 778.2, p = <.001, R^2= 0.89*. There is an 89% proportion of variance explained by the independent variable. Because race was a significant predictor in the first regression, the researcher wanted to explore if race was still a predictor in this model. The

standard estimate gives the relationship between the IV and DV variable. The standard estimates are as follows: Race (0.02), Vocabulary (0.29) Written Expression (0.26), Informational Text (0.25), Literacy Text (0.20), Written Knowledge and Use of Language Conventions (0.14). Vocabulary was the strongest predictor, and Written Knowledge and Use of Language Conventions was the weakness predictor. The researcher found that race was no longer a significant predictor after controlling for the subcategory scores.

The combination of predictors explains a significant variation in the ELA scaled scores. The predicted scale score is equal to 664.74 + 0.77 (gender) + 1.77 (race) + 1.33 (SES) +7.87 (Literacy Text) + 10.6 (Written Expression) + 5.5 (Written Knowledge and Use of Language Conventions) + 10.1 (Informational Text) + 12.6 (Vocabulary) + 0.7 (District). Written Expression shows the strongest predictor at 10.6. After controlling for demographics, there is a 0.7 difference between District 1 and District 2 of ELA scaled scores, indicating that the predicted scale score will increase by 0.7 points by participating in the resource district.

2021-2022 LEAP Assessment Results

The researcher categorized the exported data into a CSV data file for each school district and merged the data from each district into one datasheet. The researcher removed all personal identifying information from the spreadsheets. The datasheet was uploaded into jamovi. The researcher formatted the data sheet with computed variable columns exactly like the 2020-2021 data.

Assumptions for Examination of Demographics

After the final dataset was achieved for fourth-grade 2021-2022 ELA LEAP 2025 performance (ELA Scaled Score), the assumptions of linear regression were tested. The assumption of independence was met during the design phase and confirmed through visual inspection of the dataset to ensure each observation was not related to another. An examination of the residual plot for LEAP 2025 performance did not show a curvilinear relationship. The distribution of the residuals appeared to meet the assumption of linearity, and the spread of the residuals was also even across the distribution (i.e., data did not "cone") to support the assumption of homoscedasticity was met. Additionally, the tight fit of the residuals along with a Q-Q plot and results from Shapiro-Wilk (<0.01) implied the normality was violated. Durbin-Watson suggests there may be some dependency among the error terms (*0.53, 0.93*). The VIF values were relatively low and not problematic (VIF < 5) for all variables, which suggest that no predictors were closely related. The VIF values were gender (*1.00*), race (*1.07)*, English Proficiency (*1.04*), and SES (*1.03*). No influential observations were indicated by Cook's distance diagnostic (*D = .77*).

Multiple Linear Regression for Examination of Demographics

A multiple linear regression was conducted to examine how learning can differ among students who receive instruction in the inclusion classroom or the resource classroom . The researcher ran two models. Model 1 included gender, race, English Proficiency, and SES. Model 1 was statistically significant, $F\ (4, 822) = 24.9$, $p = <.001$, $R^2 = 0.11$. Model 2 compared the districts after controlling for the demographic variables. Model 2 was statistically significant, $F\ (5, 821) = 19.9$, $p = <.001$, $R^2 = 0.11$. The combination of predictors explains a significant variation in the ELA scaled scores. The prediction model is: scale score = 719.55 - 1.44 (gender) - 1.35 (English Proficiency) + 20.44 (race) + 8.39 (SES) - 0.84 (District).

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Race was the strongest predictor with a coefficient of 20.44. Non-White is reported as a 0 and White is reported as a 1. It is estimated there will be an increase in ELA LEAP 2025 scaled scores by 20.44 points for a student when their value is changed from 0 to 1. After controlling for demographics, there is a -0.84 difference between District 1 and District 2 of ELA scaled scores, indicating that the predicted scale score will decrease by 0.84 points by participating in the resource district.

Assumptions for Examination of Subcategories

The assumption of independence was met during the design phase and confirmed through visual inspection of the dataset to ensure each observation was not related to another. The VIF values were relatively low and not problematic (VIF < 5) for all variables, which indicated a lack of collinearity. The VIF values suggest that no predictors were closely related. The VIF values were Literacy Text (*2.29*), Informational Text (*2.43),* Vocabulary (*2.13*), Written Expression (*2.80*), and Written Knowledge and Use of Language Conventions (*2.55*). An examination of the residual plot for LEAP 2025 performance did not show a curvilinear relationship. The distribution of the residuals indicated that the spread of the residuals was even across the distribution (i.e., data did not "cone") and supported the assumption of homoscedasticity. The results of the Shapiro-Wilk test for normality indicated that the residuals were not normally distributed (p = <0.001). However, the Q-Q plot indicated a tight fit along the reference line. Therefore, the statistically significant result associated with the Shaprio-Wilk test was likely influenced by the large sample size. Consequently, based on the results of the Q-Q plot, the assumption of normality of residuals was accepted. Durbin-Watson is reported as *0.10, 1.79* which supports independence of errors. No influential observations were indicated by Cook's distance diagnostic (D = .60).

Multiple Linear Regression for Examination of Subcategories

A multiple linear regression was conducted to investigate how the five subcategory scores: (a) Literacy Text, (b) Informational Text, (c) Vocabulary, (d) Written Expression, and (e) Knowledge and Use of Language Conventions are linked to the scaled scores. The researcher began by running data for all four of the predictors (race, SES, gender, and English Proficiency). The researcher ran two models. Model 1 included gender, race, SES, and English proficiency combined for both districts. Model 1 was statistically significant, F *(5, 821) = 19.9, p = <.001, R^2= 0.11*. The focus of Model 2 is on the ability of the five subcategories to explain and predict the total scaled score. The DV was the ELA scaled score. Model 2 was statistically significant, *F (10, 816) = 692.8, p = <.001, R^2= 0.90*. Because race was a significant predictor in the first regression, the researcher wanted to explore if race was still a predictor in this model. The standard estimate gives the relationship between the IV and DV variable. The standard estimates are as follows: Race (0.005), Vocabulary (0.24) Written Expression (0.21), Informational Text (0.27), Literacy Text (0.27), Written Knowledge and Use of Language Conventions (0.15). Informational Text and Literacy Text were the strongest predictors and Written Knowledge and Use of Language Conventions was the weakness predictor. The researcher found that race was no longer a significant predictor after controlling for the subcategory scores.

The combination of predictors explains a significant variation in the ELA scaled scores. The predicted scale score is equal to 644.07 -1.54 (gender) +0.35 (race) + 0.17 (SES) +11.30 (Literacy Text) + 8.70 (Written Expression) + 6.72 (Written Knowledge and Use of Language

Conventions) + 11.30 (Informational Text) + 9.84 (Vocabulary) + 1.13 (District). The resource district showed an increase of ELA scaled scores by 1.13 points.

2022-2023 LEAP Assessment Results

The researcher categorized the exported data into a CSV data file for each school district and merged the data from each district into one datasheet. The researcher removed all personal identifying information from the spreadsheets. The datasheet was uploaded into jamovi. The researcher formatted the data sheet with computed variable columns exactly like the 2020-2021 data.

Assumptions for Examination of Demographics

After the final dataset was achieved for fourth-grade 2022-2023 ELA LEAP 2025 performance (ELA Scaled Score), the assumptions of linear regression were tested. The assumption of independence was met during the design phase and confirmed through visual inspection of the dataset to ensure each observation was not related to another. An examination of the residual plot for LEAP 2025 performance did not show a curvilinear relationship. The distribution of the residuals appeared to meet the assumption of linearity, and the spread of the residuals was also even across the distribution (i.e., data did not "cone") to support the assumption of homoscedasticity was met. Additionally, the tight fit of the residuals along with a Q-Q plot and results from Shapiro-Wilk (<0.01) does not support normality. Durbin-Watson suggests no autocorrelation (*0.07, 1.84*). The VIF values were relatively low and not problematic (VIF < 5) for all variables, which suggest that no predictors were closely related. The VIF values were gender (*1.00*), race (*1.10*), English Proficiency (*1.17*), and SES (*1.09*). No influential observations were indicated by Cook's distance diagnostic (*D = .02*).

Multiple Linear Regression for Examination of Demographics

A multiple linear regression was conducted to examine how learning can differ among students who receive instruction in the inclusion classroom or the resource classroom (Appendix G). The researcher ran two models. Model 1 included gender, race, English Proficiency, and SES. Model 1 was statistically significant, $F\ (4, 819) = 26.3\ p = <.001, R^2 = 0.11.$ Model 2 compared the districts after controlling for the demographic variables.

Model 2 was statistically significant, $F\ (5, 818) = 22.1, p = <.001, R^2 = 0.12.$ The combination of predictors explains a significant variation in the ELA scaled scores. The prediction model is: scale score = 730.53 - 5.32 (gender) + 25.50 (English Proficiency) + 0.43 (race) - 16.02 (SES) + 5.62 (District).

English Proficiency was the strongest predictor with a coefficient of 25.50. Non-English Proficient is reported as a 0 and English Proficient is reported as a 1. It is estimated there will be an increase in ELA LEAP 2025 scaled scores of 25.50 points for a student when their value is changed from 0 to 1. After controlling for demographics, there is a 5.62 difference between District 1 and District 2 of ELA scaled scores, indicating that the predicted scale score will increase by 5.62 points by participating in the resource district.

Assumptions for Examination of Subcategories

The assumption of independence was met during the design phase and confirmed through visual inspection of the dataset to ensure each observation was not related to another. The VIF

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values were relatively low and not problematic (VIF < 5) for all variables, which indicated a lack of collinearity. The VIF values suggest that no predictors were closely related. The VIF values were Literacy Text (*2.09*), Informational Text (*2.27*), Vocabulary (*1.80*), Written Expression (*2.60*), and Written Knowledge and Use of Language Conventions (*2.42*).

An examination of the residual plot for LEAP 2025 performance did not show a curvilinear relationship. The distribution of the residuals indicated that the spread of the residuals was even across the distribution (i.e., data did not "cone") and supported the assumption of homoscedasticity. The results of the Shapiro-Wilk test for normality indicated that the residuals were not normally distributed (p = <0.001). However, the Q-Q plot indicated a tight fit along the reference line. Therefore, the statistically significant result associated with the Shaprio-Wilk test was likely influenced by the large sample size. Consequently, based on the results of the Q-Q plot, the assumption of normality of residuals was accepted. Durbin-Watson suggests there is no autocorrelation (*0.02, 2.02*). No influential observations were indicated by Cook's distance diagnostic (*D = .40*).

Multiple Linear Regression for Examination of Subcategories

A multiple linear regression was conducted to investigate how the five subcategory scores: (a) Literacy Text, (b) Informational Text, (c) Vocabulary, (d) Written Expression, and (e) Knowledge and Use of Language Conventions are linked to the standard scores. The researcher began by running data for all four of the predictors (race, SES, gender, and English Proficiency). The researcher ran two models. Model 1 included gender, race, and SES combined for both districts. Model 1 was statistically significant, F *(5, 818) = 22.1, p = <.001, R^2= 0.12*. The focus of Model 2 is on the ability of the five subcategories to explain and predict the total scaled score. The DV was the ELA scaled score. Model 2 was statistically significant, *F (10, 813) = 710.1, p = <.001, R^2= 0.90*. Because English Proficiency was a significant predictor in the first regression, the researcher wanted to explore if English Proficiency was still a predictor in this model. The standard estimate gives the relationship between the IV and DV variable. The standard estimates are as follows: Race (0.02), English Proficiency (0.02) Vocabulary (0.25) Written Expression (0.20), Informational Text (0.27), Literacy Text (0.24), Written Knowledge and Use of Language Conventions (0.17). Informational Text was the strongest predictor and Written Knowledge and Use of Language Conventions was the weakness predictor. The researcher found that English Proficiency was no longer a significant predictor after controlling for the subcategory scores.

The combination of predictors explains a significant variation in the ELA scaled scores. The predicted scale score is equal to 646.62 + 0.36 (gender) + 2.24 (race) - 1.66 (SES) +2.17 (English Proficiency) + 9.28 (Literacy Text) + 8.06 (Written Expression) + 6.89 (Written Knowledge and Use of Language Conventions) + 11.06 (Informational Text) + 10.01 (Vocabulary) +1.80 (District). Informational Text shows the strongest predictor at 11.06. The resource district showed an increase of ELA scaled scores by 1.80 points.

SUMMARY AND FINDINGS

The study found that the resource district showed an increase in ELA scaled scores compared to the inclusion district for two out of three academic years, though the difference was statistically significant after accounting for the other variables. Race emerged as the strongest predictor, with White students outperforming Non-White students. Gender and SES also played

notable roles, though their effects were less pronounced than race. English proficiency was a significant factor in the 2022-2023 academic year.

The researcher found that demographics were no longer a significant predictor after controlling for the subcategory scores. Specific subcategories within the ELA assessment, particularly Informational Text and Vocabulary, proved to be stronger indicators of ELA performance across all academic years than demographics alone. Residual analysis supported the assumption of homoscedasticity. While the Shapiro-Wilk test suggested non-normality, the Q-Q plot showed the data followed a normal distribution reasonably well. The Durbin-Watson statistic indicated slight positive autocorrelation, and Cook's distance confirmed there were no influential outliers. Overall, while demographic factors, particularly race, initially appeared to influence ELA scores, their impact was reduced when subcategory scores from the LEAP 2025 were considered.

LIMITATIONS

Limitations are defined as "some aspect of the study that the researcher cannot control but believe may negatively affect the results of the study" (Gay et al., 2015, p. 119). A brief explanation of the limitations of this study is discussed below.

1. *Covid-19*: On March 20, 2020, Louisiana schools closed school facilities for the remainder of the school year. The Louisiana Department of Education (LDOE) was granted the waiver to cancel all spring LEAP 2025 testing. The 2020-21 school year featured a mixture of in-person classes, distance learning, and a hybrid model.
2. *Curriculum*- The examination of the curriculum is limited to the curriculum District 1 and District 2 uses for instruction.

DELIMITATIONS

The researcher is only looking at the exceptionality of students with exceptionalities under Louisiana Bulletin 1508, excluding gifted and talented and Intellectual Disability-Severe, in Louisiana Primary Schools in fourth grade in two southeast Louisiana school districts. These districts were chosen because one of the district's classroom instruction is primarily an inclusion setting for students with exceptionalities and the other is primarily a resource setting for students with exceptionalities. The researcher is not looking at the classifications of gifted, talented, or intellectual disability-severe. These exceptionalities could drastically affect student placement and may require an alternative assessment.

The researcher did not include students that were evaluated and qualified to receive special education services that required less than 40% of the day in a regular education classroom. Students that spend less than 40% of the day in the regular education classroom do not participate in the LEAP 2025 assessment. There is an alternative assessment these students participate in. The researcher only used data from two neighboring school districts in Southeast Louisiana and did not use data from all the school districts in Southeast Louisiana.

The study relies on the LEAP 2025 Reading/Language Arts standardized tests to measure academic achievement. Other assessments or measures of student learning may not be included in the study. The study only examines the alignment of Tier I curricula with the Louisiana Student Standards within two neighboring school districts in Southeast Louisiana. Other curricular resources or approaches may not be included in the study.

DISCUSSION

The results contribute to the longstanding debate regarding the LRE. While the IDEA emphasizes inclusion to the maximum extent appropriate, this study suggests that the effectiveness of placement may depend on various contextual and instructional factors. For instance, the subcategory analyses demonstrated that Informational Text and Vocabulary were the strongest predictors of ELA performance. This finding suggests that regardless of placement, the quality and focus of instruction in these key areas significantly impact outcomes.

Additionally, demographic variables such as race and SES were significant predictors in the initial regression models but lost their predictive power once subcategory scores were introduced. This indicates that instructional quality and curriculum alignment in subcategories may mediate the impact of demographic factors. The finding that race was a significant predictor only until instructional subcategories were controlled highlights the need for equity-focused instructional practices and supports.

These results should be interpreted in light of the instructional and support structures present in each district. District 1 prioritized inclusion, while District 2 relied more on resource settings. The slight edge in performance for students in resource settings suggests that targeted, small-group instruction may provide benefits that should not be overlooked in the pursuit of inclusion.

CONCLUSION AND IMPLICATIONS

This study provides valuable insights into the academic achievement of elementary students with disabilities in Southeast Louisiana, specifically examining their ELA performance across inclusion and resource instructional settings. While resource placements were associated with slightly higher ELA scores in two of the three years studied, the differences were modest, indicating that placement alone is not a determining factor for success. Notably, the ELA subcategories of Informational Text and Vocabulary emerged as strong predictors of performance, underscoring the importance of instructional quality and curriculum alignment in driving academic outcomes.

Additionally, demographic factors such as race and SES influenced ELA performance. However, when instructional subcategory performance was considered, these demographic factors became less predictive. This suggests that high-quality, targeted instruction can mitigate the impact of demographic disparities. The findings highlight the need for data-driven, individualized instructional planning that aligns with Louisiana state standards and prioritizes equitable access to effective teaching strategies, ultimately enhancing educational outcomes for diverse learners.

While instructional placement plays a role in ELA performance, it is not the sole determinant. Factors such as student demographics, subcategory mastery, and the quality of instruction also significantly shape academic outcomes. These results emphasize the complex nature of student achievement, where both the instructional context and individual student characteristics intersect. Therefore, educators and policymakers should adopt a more holistic approach to instructional planning, integrating placement strategies with targeted interventions in key skill areas such as Vocabulary, Informational Text, and Written Expression.

Implications for Practice:

1. **Targeted Instruction and Interventions**:
   - Provide daily, individualized interventions tailored to the standards required for mastery in Informational Text and Vocabulary.
   - Teachers should emphasize explicit teaching strategies for Informational Text, including identifying main ideas, summarizing, analyzing text structure, and evaluating arguments.
   - Vocabulary instruction should be systematic, involving both direct teaching and incidental learning.
   - Implement differentiated instructional strategies within both resource and inclusion settings to address the specific needs identified through the LEAP 2025 data.
2. **Data-Driven Decision Making**:
   - Use LEAP 2025 data to inform measurable IEP goals, ensuring that they target specific academic areas where students need improvement.
   - Establish regular data review meetings for teachers and administrators to collaborate on identifying common challenges and sharing effective strategies.
   - Provide professional development to educators on interpreting and utilizing LEAP 2025 data for instructional planning.
3. **Curriculum and Resource Allocation**:
   - Use LEAP 2025 data to guide curriculum development, prioritizing areas such as Vocabulary and Informational Text where students show weaknesses.
   - Implement evidence-based interventions for students who need to meet proficiency standards, tailoring interventions based on LEAP 2025 subcategory scores.

Implications for Policy:

1. **Clear Guidelines for Resource Placement**:
   - Policymakers should establish clear, standardized definitions and guidelines for the LRE process, ensuring consistency across schools and districts. Comprehensive state-level guidance would support educators in making informed placement decisions that best meet students' needs.
   - Professional development and resources should be provided to help educators navigate these complexities, ensuring that inclusive practices are optimized to support academic success.
2. **IEP Development**:
   - IEP teams should continue to regularly review and update IEPs, ensuring they are individualized to meet each student's academic, social, emotional, cognitive, and behavioral needs. Academic goals should be aligned with state standards and informed by students' LEAP 2025 scores.
   - Collaboration among parents, teachers, and specialists is essential to ensure comprehensive support plans are in place.
3. **Placement Strategy**:
   - A dual approach—combining inclusion for whole-group instruction and individualized resource support for targeted interventions could enhance outcomes for students with disabilities. Collaboration between general education and special education teachers is critical to ensuring effective integration of this approach.
4. **Reducing Student-Teacher Ratios**:

- Reducing student-teacher ratios in general education classrooms is recommended to allow for more individualized instruction. Smaller class sizes enable teachers to better address diverse learning needs, which can lead to improved academic performance and overall student growth.

Implications for Further Research:

1. **Larger Sample Sizes**:
   - Future studies should include a broader range of school districts to increase the accuracy and generalizability of the findings. Expanding the scope to multiple districts would provide more robust data.
2. **Resource Access and Impact**:
   - Research should explore how access to educational resources, including parental involvement, school funding, and district-level policies, impacts ELA outcomes. Investigating differences in resources between urban, suburban, and rural settings could yield valuable insights.
3. **Racial and SES Disparities**:
   - Future research should delve into the factors contributing to racial disparities in ELA scores. Investigating how geographic and socio-economic factors influence educational outcomes, as well as potential systemic biases, could provide a clearer understanding of these disparities.
4. **Longitudinal Studies**:
   - A longitudinal approach to studying ELA outcomes for students with disabilities could offer deeper insights into how performance evolves over time. Tracking students across multiple years and incorporating qualitative data from educators, students, and parents could provide a fuller picture of the factors influencing ELA achievement.

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