



**Pre-Kindergarten & CLUE Program Report**  
**Associations Between SCS Pre-K and CLUE Enrollment**  
Prepared by the Department of Research & Performance Management

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### Key Findings

Shelby County Schools (SCS) District staff requested an analysis of the District's Pre-Kindergarten (Pre-K) program to determine if there is an association between enrollment in SCS Pre-K and acceptance into the Creative Learning in a Unique Environment (CLUE) program. Students in Pre-K4 through fifth grade in the 2019–20 school year were included in the analysis.

The analyses of the association between SCS Pre-K and CLUE selection found that:

- Students who attended SCS Pre-K were less likely to be identified and accepted into CLUE in PK4–5<sup>th</sup> grade compared to those who did not attend a SCS Pre-K program, though the effect of Pre-K background was negligible.
- White students who did not attend a SCS Pre-K program had the highest selection rate into CLUE (17.8%).

Based on the findings, the following are recommended:

- The CLUE Office and Early Childhood Department should partner together to explore various avenues for exposing children to creative learning opportunities in the Pre-K setting.
- The CLUE Office should continue its work in monitoring and adapting to best practices and new research in gifted education, specifically in relation to practices that improve diversity and equity in gifted academics.

### Shelby County Schools CLUE Program

Creative Learning in a Unique Environment (CLUE) is an educational program designed to meet the unique needs of SCS students who are academically talented and intellectually gifted. CLUE teachers deliver differentiated gifted curriculum that encourages abstract thinking, creative problem solving, enhanced independence, and critical thinking while building effective leadership skills and promoting strong communication (SCS, 2018). The CLUE program serves students in Pre-K through ninth grade with consultation services through 12<sup>th</sup> grade.

In response to updated state requirements and recent research associated with gifted identification, the CLUE Office developed a new universal screening process and implemented it in the 2019–20 academic year. Kindergarten through eighth-grade students are now identified for CLUE through a number of different avenues: SCS's Universal Screening Process administered to all K–8 students, parent or teacher/staff referrals, and/or systematic "child find" and individual screenings (TNDOE, 2017). After identification in phase one, a comprehensive evaluation is overseen by SCS's CLUE Office for students in grades 3–8. The evaluation includes an assessment of cognition (i.e., IQ testing), parent and teacher surveys, school and educational performance measures, and review of creativity/characteristics of giftedness (TNDOE, 2018). For students in Kindergarten through second grade, students who meet the local criteria for CLUE are admitted to the program and expected to complete the comprehensive evaluation process for the gifted IEP during their third-grade year.



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This new screening process began in the 2019–20 academic year and is a change from past CLUE screening procedures. Most students currently in the CLUE program were identified for CLUE using the old procedures. The new Universal Screener has already shown a change in the demographics of students identified for phase one of CLUE testing. In 2019–20, 671 students were accepted into the CLUE program. Of these students, 55% were Black, 11% Hispanic, 7% Asian, and 20% White. The new screening procedures impacted the overall demographics for all CLUE students by a 4% increase for Black students, a 1% increase for Asian students, and a decrease of 4% for White students. It is important to note that school and statewide closures caused by the pandemic limited the availability of phase 2 testing for gifted IEPs for students in grades 3–8, so the majority of newly accepted CLUE students came from grades K–2.

Students in the CLUE program receive at least five hours of specialized instruction during two sessions each week. Over 100 SCS CLUE teachers specialize in meeting the needs of academically talented and/or intellectually gifted students in the District. Currently, over 4,000 students participate in the CLUE program in Shelby County Schools.

#### **Shelby County Schools Pre-Kindergarten Program**

The SCS Division of Early Childhood supports 291 early childhood classrooms and provides services to over 5,000 students across the Memphis and Shelby County area. In the 2018–19 academic year, SCS Head Start provided services to over 3,500 students enrolled in 173 classrooms in the District (SCS, 2019). All Pre-K classrooms follow the “Big Day for PreK” curriculum (SCS, 2020).

Students enrolled in SCS Pre-K programs are primarily in Pre-K4 classrooms (74.6%), with the other 25% enrolled in Pre-K2 and Pre-K3 programs. In 2018–19, 2,396 students were promoted to Kindergarten (SCS, 2019), and in 2019-20 69% of all SCS Pre-K students were academically ready for Kindergarten (Hill, 2020). In addition to an academic focus, SCS Pre-K classrooms also support the health and well-being of the children and their families, which can have lasting positive effects on students (Puma, Bell, Cook, & Heid, 2010).

In addition to the traditional Pre-K and Head Start programs administered by the Department of Early Childhood, the CLUE Office also has a CLUE Pre-K program. Students who are identified as intellectually gifted and/or academically talented and meet the eligibility requirements in preschool are eligible to attend one of the eight CLUE Pre-K classes at three schools in the District. The CLUE Pre-K classes at two locations, Grahamwood Elementary and Downtown Elementary, supplement the home environment with five hours per week of CLUE instruction, while White Station Elementary offers a full day program for students who also qualify for the traditional Pre-K class at the school site. For all locations the parent must agree to provide transportation for their student.

#### **Data Used in Analysis**

Students were classified as having attended a SCS Pre-K4 program during any academic year between 2013–14 and 2019–20. Students in SCS Pre-K2 or Pre-K3 programs were not included in this evaluation since only a limited number of spaces are available, and those spots are normally reserved for students with special needs. Students were also categorized as being in CLUE in the 2019–20 academic year or not. The overall sample size included in



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the study was 63,509 ( $N = 63,509$ ) which included students enrolled in PK4–5<sup>th</sup> grade in the 2019–20 academic year.

### Analyses and Results

A chi-square test of independence was used to determine if there was a significant association between attending a SCS Pre-K program and later selection into the CLUE program. Chi-square tests are affected by sample size, with large samples, like the one in this study, more likely to meet the threshold for statistical significance. To combat this issue of inflated significance, a phi coefficient was also included to estimate the effect size of the association (Corder & Foreman, 2014). For this study, the measure of effect size provided a better and more realistic picture of the association between the two variables.

Forty-two percent (41.78%) of all PK4–5<sup>th</sup>-grade students enrolled in 2019–20 attended a SCS Pre-K program ( $n = 26,531$ ), whereas only about four percent (3.7%) of PK4 through 5<sup>th</sup> graders were identified and accepted into CLUE ( $n = 2,319$ ). This low percentage of students identified and accepted into CLUE follows the historical trend for gifted identification on the national level (McClain & Pfeiffer, 2012). Of the students identified and accepted into CLUE, nearly seventy-one percent (70.7%) did not attend SCS for Pre-K. The table below shows the breakdown of students into the four categories.

SCS Enrollment by Pre-K and CLUE			
	CLUE	Not in CLUE	TOTAL
SCS Pre-K	680	25,851	26,531
Other or No Pre-K	1,639	35,339	36,978
TOTAL	2,319	61,190	63,509

For the overall SCS population, a chi-square test produced a significant association between attending a SCS Pre-K program and being identified and accepted into CLUE ( $\chi^2_{(1)} = 153.43, p < .001$ ). However, the significance level was strongly influenced by the large sample size, hence the need for a measure of effect size. The effect size for this association was negligible ( $\phi = -.05$ ), indicating that although students who attend a SCS Pre-K program were less likely to be identified and accepted into CLUE, in reality, there is almost no effect of Pre-K background on CLUE selection for the general SCS population.

### Analysis by Subgroups

To determine if the association between Pre-K enrollment and selection for CLUE varied by subgroup, additional analyses focused on specific populations. Race, English Learner (EL) classification, and qualifying for federal Direct Certified services were all examined to determine if those groups differed from the overall population being analyzed.

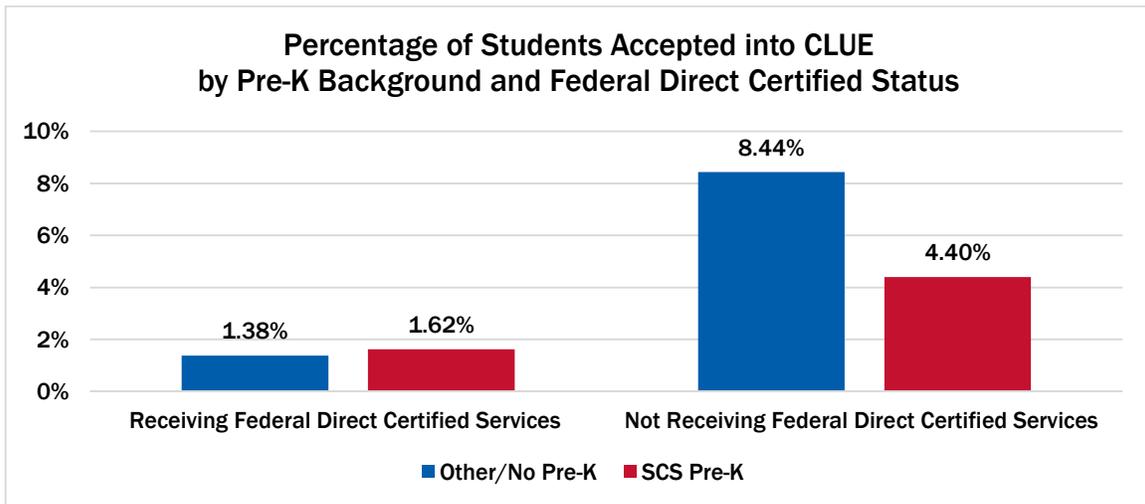
#### *Economic Status*

SCS has a large number of students with varying economic backgrounds. Students who receive federal Direct Certified services (e.g., SNAP, TANF, foster care, etc.) (USDA, 2017) are considered economically disadvantaged. Students who received federal Direct Certified services were identified and accepted into CLUE at a much lower rate (1.5%) regardless of Pre-K background compared to students who did not qualify for these programs (7.0%).



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When examining if there was an association between Pre-K enrollment and CLUE identification and acceptance for students who are economically disadvantaged ( $n = 38,535$ ), a positive result was found ( $\chi^2_{(1)} = 3.92, p = .048$ ). However, the effect of this association was negligible ( $\phi = .01$ ). In fact, the association was so small that it accounted for an increase in identification and acceptance into CLUE for SCS Pre-K students of only about 0.06%, equating to about 24 out of 38,535 students. It is worth noting though, that CLUE students who receive federal Direct Certified services were evenly split between those who attended a SCS Pre-K class and those who either did not attend any Pre-K program or utilized a program outside the District (49.7% and 50.3% respectively).



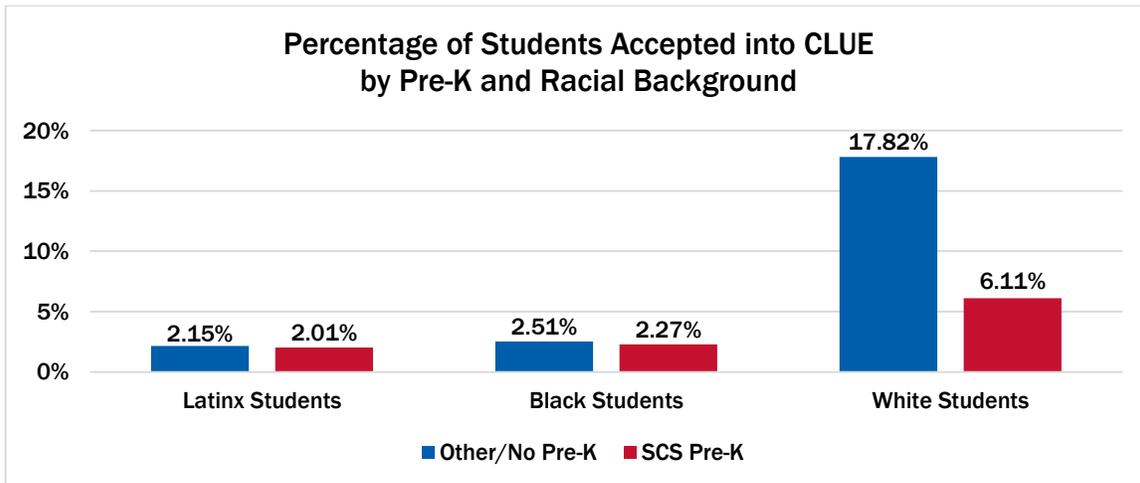
### Race

Three racial groups, Black, White, and Hispanic/Latinx, were examined to see if the results differed compared to the general SCS PK4–5<sup>th</sup>-grade population. Black students were identified and accepted into CLUE at a lower rate than the overall SCS population, 2.4% compared to 3.7%, respectively. For this group ( $n = 45,920$ ), no association between SCS Pre-K enrollment and CLUE selection was found ( $\chi^2_{(1)} = 2.74, p = .098$ ). Additionally, Hispanic/Latinx students ( $n = 9,482$ ) did not show a significant association between CLUE selection and SCS Pre-K enrollment ( $\chi^2_{(1)} = 0.19, p = .660$ ) and were also less likely to be identified and accepted into CLUE in general (2.1% selection rate).

White students, on the other hand, were identified and accepted into CLUE at a much higher rate than the general SCS population, 14.8% compared to 3.7% respectively. A significant, though moderately small association was found for this group ( $\chi^2_{(1)} = 109.53, p < .001; \phi = -.15$ ), indicating that White students who did not attend SCS Pre-K were identified and accepted into CLUE at a higher rate than predicted. The graph below illustrates the percentage of students identified and accepted into CLUE by their Pre-K background for each racial group.

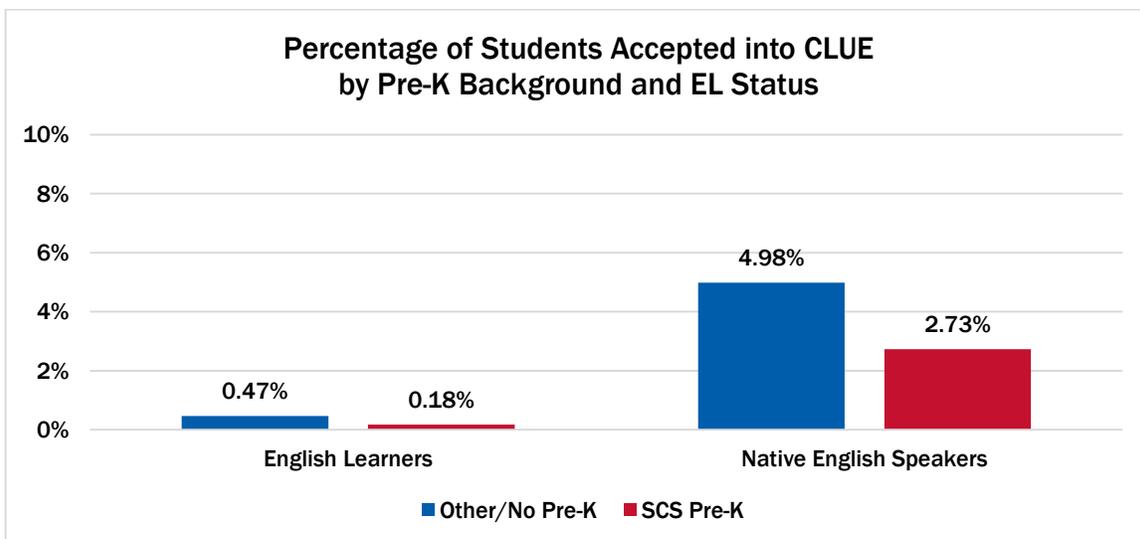


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### English Learners

Students in SCS are classified as English Learners (EL) if English is not their first or primary language spoken inside or outside the home and if the student does not pass the proficiency requirements on the state screening assessment for ESL (TNSBOE, 2018). Of the students who are classified as EL, less than 0.05% of those students were identified and accepted into CLUE compared to the overall 3.7%. For EL students ( $n = 6,210$ ) no association was found between Pre-K enrollment and CLUE selection, ( $\chi^2_{(1)} = 2.70, p = .101$ ).



### Discussion

The findings suggest there is a slight negative association between SCS Pre-K enrollment and CLUE selection, meaning that students who attended a SCS Pre-K program are being identified and accepted into CLUE at a slightly lower rate than expected, while those without a SCS Pre-K background have a higher identification and acceptance rate. Although this



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result seems unsettling, the effect of the association is so minute that in a practical sense, any distinction is hard to make.

For the subgroups identified, two groups showed an association, students receiving federal Direct Certified services and White students. The positive association was inappreciable for students receiving federal Direct Certified services and only accounted for a 0.06% increase in CLUE selection for those with a SCS Pre-K background. Although this is a promising sign for SCS Pre-K, again the effect was so small that making any claims based on this finding is imprudent. Concomitantly, White students showed a significant though small association between not attending SCS Pre-K and being identified and accepted into CLUE. White students in general were identified and accepted into CLUE at a much higher rate than Black or Hispanic/Latinx students, and White students who did not attend SCS Pre-K were identified and accepted at the highest rate (17.8%).

### Limitations

A primary limitation of the study is the binary nature of the data. For Pre-K enrollment, a dichotomous flag was used that categorized students into either having attended a SCS Pre-K program or not. However, we know that Pre-K enrollment is more nuanced than that. Students who did not attend a SCS Pre-K program might have attended a private school for Pre-K, attended a daycare that provides a structured curriculum, or did not attend anything at all. Due to the nature of the data, all of these students are grouped together. This means that students with really strong Pre-K backgrounds outside of SCS are being combined with students who have no formal Pre-K experiences, making comparisons against students with a SCS Pre-K experience difficult to distinguish. Collecting data on Pre-K background such as the previous program attended would allow SCS to compare its Pre-K students to other groups of students in a more equitable manner.

A second limitation to the study is the past CLUE screening process. The majority of students in this study were originally identified and accepted into CLUE under the old screening process which relied heavily on teacher identification. The CLUE Office implemented the Universal Screener process in the 2019–20 academic year as a result of changing best practices in gifted education. The new Universal Screener has already begun to identify gifted and talented students more equitably. The CLUE program has seen an increase in diversity of the identified students for its local K–2 program. It is not yet clear how the new screening processes will impact CLUE enrollment for students with various Pre-K backgrounds, thus warranting further studies as the CLUE demographics change in the coming years, allowing this analysis to serve as a baseline for future studies.

### Recommendations

**Recommendation 1**– The CLUE Office and Early Childhood Department should partner together to explore various avenues for exposing children to creative learning opportunities in the Pre-K setting.

Children strongly benefit from intentional, frequent exposure to creative thinking and learning opportunities at a young age. Currently, the Pre-K CLUE classrooms are at three schools, geographically located in downtown, midtown and East Memphis. Expanding CLUE opportunities in Pre-K classrooms by having more CLUE Pre-K classes, having current CLUE



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teachers pull gifted Pre-K students if they are in the same building, or even having a gifted Pre-K teacher float to different schools would increase the opportunities for children to be exposed to different ways of thinking and learning. It is important to note that the CLUE Office has attempted to expand its offerings to other locations around the District, but lack of interest/applications has limited expansion. Partnering with the Department of Early Childhood might increase parental awareness of the CLUE Pre-K program and encourage parents to investigate more preschool opportunities for their child.

**Recommendation 2-** The CLUE Office should continue its work in monitoring and adapting to best practices and new research in gifted education, specifically in relation to practices that improve diversity and equity in gifted academics.

CLUE's implementation of the Universal Screener in the 2019–20 school year was a direct result of changes in best practices and adapting to new research in gifted education and one that has the potential to increase equity across the District. The new screening process has already started to impact the demographics of SCS students identified for CLUE, specifically the local K–2 CLUE population. As more emphasis is put on equity in all facets of education, best practices for identification, testing, and teaching gifted and talented students may change. Ensuring that the CLUE Office has the resources to implement these new practices like the Universal Screener will be paramount to eliminating disparities in identification, testing, and teaching gifted students from diverse backgrounds.

Overall, the findings from this analysis show little to no association for Pre-K background and identification and acceptance into CLUE. The associations that were found provided no practical significance with the exception of White students who showed a small effect of not attending a SCS Pre-K program on their CLUE enrollment. As the CLUE student population changes in the coming years, as it has already begun to do, investigating these associations again and comparing them to this baseline report will provide additional insight into the changes that have been made as a result of the evolving best practices in gifted learning. These current findings, however, do not diminish the importance of Pre-K for preparing SCS students for Kindergarten and beyond.



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