



LEGISLATIVE BRIEF

KINDERGARTEN READINESS AND ACADEMIC PERFORMANCE

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Introduction

This brief, prepared in response to a legislative request, explores the relation between a child's age when he or she begins kindergarten and his or her performance in 3rd grade on measures of literacy. Based on an analysis of student-level data obtained from the Tennessee Department of Education, OREA found that Tennessee students who were older at kindergarten enrollment performed better on 3rd grade literacy tests than their peers. Forty-two percent of students aged 6 to 6.49 (older students) were on or above grade level in 3rd grade literacy compared to 33 percent of younger students aged 4.5 to 4.99 years old.^A This pattern also remained true for students enrolled in the typical age band from 5 to 5.99 years old; that is, older students outperformed younger students even within the normal kindergarten age range. This trend of older students outperforming their younger peers continued past 3rd grade as measured by students' later performance on 6th grade literacy tests.

Tennessee students who are redshirted (i.e., have had their kindergarten enrollment delayed by one year) are typically male, White, and do not have an economically disadvantaged background. To account for these external influences, OREA conducted a regression analysis including gender, race/ethnicity, and economically disadvantaged status. For students between the ages of 4 and 7 enrolled in kindergarten during the 2017-18 school year, an increase in age predicted an increase in 3rd grade scaled English language arts (ELA) assessment scores, taking into account gender, ethnicity, and economically disadvantaged status. In other words, students who are older when enrolled in kindergarten are more likely to score higher on 3rd grade ELA tests even after accounting for demographic and socioeconomic differences. Another statistical test also predicted ELA score differences between age bands.

While Tennessee students who were older performed better on measures of 3rd grade and 6th grade literacy, several notable limitations to OREA's analysis should be considered. For one, students were not randomly assigned to age categories (e.g., 5 years of age at kindergarten enrollment, 6 years of age at kindergarten enrollment). Decisions about kindergarten enrollment were instead made by parents, guardians, and families. Though random assignment was not possible in this case, OREA's evaluation would have been more rigorous if children were randomly assigned to enrollment age categories, as this would have prevented *selection bias*. In research, selection bias happens when the various groups in a study are different from one another because of the way the groups were formed. For example, parents or guardians who chose to enroll their child in kindergarten at age 5 might be fundamentally different from those who chose to enroll their child at age 6, and these differences may have impacted their enrollment decisions and resulting differences in student performance.

To limit the effects of selection bias, OREA controlled for several factors, including race/ethnicity, economically disadvantaged status, and gender. OREA's statistical tests, however, could not account for all of the variances between redshirted students and other students, because not all differences can be quantified and included. For example, OREA was unable to look at variables such as non-state-funded pre-K enrollment, household adjusted gross income, or parent marital status.

Any state or district policy decisions on kindergarten age enrollment requirements or kindergarten enrollment cutoff dates should involve considerations of demographic and socioeconomic factors. In addition, further research is warranted before pursuing any policy changes. For example, more in-depth studies could minimize selection bias by looking at those who are just above and below the enrollment age cutoff (a type of study known as a regression discontinuity).

^A The students in this evaluation who entered kindergarten before the age of 5 met the Tennessee Department of Education's requirements for early enrollment. For more information on these requirements, see p.3.

Tennessee parents may use the information contained in this brief to help determine the appropriate age for their child to begin kindergarten, and schools may use it to tailor services or adjust curriculum accordingly.

Background

According to current Tennessee state law, children entering kindergarten must be at least 5 years old on or before August 15.^B Students may, however, enroll later, provided that enrollment occurs no later than in the academic year following the child's 6th birthday. This law allows for children of varying ages to be enrolled in kindergarten at the same time, which, for many children, is the first time that they enroll in formal education.^C Thus, students who are more than one year apart in age may begin kindergarten at the same time. A student born August 15, 2010, for instance, may be enrolled in kindergarten with a student born approximately 16 months earlier on March 31, 2009, who at kindergarten's start on September 1, 2015, would be 6.5 years old. Twenty-one states require students to be 5 years old on or before September 1, but cutoffs range from January to October.^D

This practice wherein a parent enrolls a child after the academic year he or she first becomes eligible for kindergarten is commonly referred to as academic redshirting. Redshirting occurs most frequently among male students from families who are not economically disadvantaged, and students born in summer months (i.e., close to traditional kindergarten cutoff dates). In Tennessee, about 5 percent of kindergarten students (or approximately 23,000 students) between the years 2012-13 and 2017-18 were between ages 6 and 7 at kindergarten enrollment. The national redshirting rate has been estimated between 6 and 12 percent.

Parents may wish to voluntarily delay their child's kindergarten enrollment for several reasons. The assumption that younger children may be less mature academically, socially, or physically than their peers is one reason; in other words, parents may believe their young child is not as developmentally ready for kindergarten as other children and needs more time to mature.

Common developmental benchmarks that a child should be able to perform prior to kindergarten include speaking in complete sentences, printing his or her first name, counting in order from 1 to 20, and following simple directions.

A kindergarten entrance assessment is one tool to assess students' proficiency on developmental benchmarks. About 60 percent of states (30 states and the District of Columbia) require kindergarten entrance assessments, including Arkansas, Kentucky, Mississippi, and North Carolina. Most of these states stipulate how the results are to be used. Some states require that districts provide results to a child's parents, require that data is used to identify students in need of support, or require results to be conveyed to local or state leaders (e.g., the state department of education, the state board of education, state superintendent, or the General Assembly).

^B Prior to 2013, state law mandated that children entering kindergarten must be at least five years old on or before September 30. In 2013, the General Assembly moved the cutoff birth date for turning 5 from September 30 to August 31 for the 2013–2014 school year and August 15 in 2014–2015 and beyond. TCA 49-6-3001 allows for early enrollment with the director of school's approval through evaluation and testing (i.e. up to the local education agency). Provisions exist for out-of-state transfer students, as well. Some students in the sample entered kindergarten at a time where the cutoff was September 30 or August 31. OREA's calculations account for different year's statutorily-mandated cutoff dates.

^C The state, along with at least 18 other states and the District of Columbia, mandates kindergarten enrollment (Tenn. Code Ann. § 49-6-201). Pre-kindergarten is not required by state law but students may enroll in the state's voluntary pre-K program (VPK). Children four years of age on or before August 15 may apply and attend VPK; however, priority enrollment is given to students who are identified as 'at risk', including those students who are low-income or have a history of abuse or neglect. From 2012-13 to 2017-18, about 1 in 5 kindergarten students had previously enrolled in VPK.

^D Some states allow local education agencies (LEA) to set kindergarten cutoff ages. This data is excluded from the range.

Tennessee does not require an entrance examination for kindergarten.^E State law allows school districts to test children who seek to enter kindergarten early, however. School directors can then use these test results to determine whether a child is mature enough to enter kindergarten. A child can only enter kindergarten early if he or she will turn 5 between August 16 and September 30, and if he or she is deemed socially and academically mature.

Research methods

OREA obtained student-level data from the Tennessee Department of Education (TDOE) for this research. The information provided below includes a summary of Tennessee kindergarten students’ demographics by enrollment age, and students’ outcomes on the state-required literacy assessment, the Tennessee Comprehensive Assessment Program (TCAP) English language arts (ELA) examination.

Students enrolled in kindergarten from 2012-13 to 2017-18 were analyzed through the 2020-21 school year. Students who started kindergarten in the 2012-13 school year have eight years’ worth of data and are analyzed throughout the entire period. Other students are included in the analyses as indicated by exhibit notes. Due to data limitations, OREA was unable to determine which students received pre-kindergarten instruction that was not state-funded, such as enrollment in private pre-kindergarten or other readiness preparation.^F Therefore, all kindergarten students were analyzed, regardless of whether they attended the state-funded Tennessee Voluntary Pre-K (TN VPK) program.

Exhibit 1: Timeline of data included in this analysis

Cohort:	Kindergarten start year:	Third grade ELA test:	Sixth grade ELA test:
1	2012-2013	2015-2016	2018-2019
2	2013-2014	2016-2017	2019-2020
3	2014-2015	2017-2018	2020-2021
4	2015-2016	2018-2019	2021-2022
5	2016-2017	2019-2020	2022-2023
6	2017-2018	2020-2021	2023-2024

Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.
 Note: Red cells indicate data that is included in this analysis. Gray cells are not included.

OREA classified children as redshirted if they were between 6 and 7 years at kindergarten enrollment, and non-redshirted (students with on-time enrollment) if they were between 4.5 years old up to 6 years old at enrollment.^G OREA also grouped students in half-year age-at-enrollment increments to determine how

^E Although the state does not require an entrance examination for kindergarten, Tennessee does allow kindergarten teachers to test students with its Kindergarten Entry Inventory (KEI). The Kindergarten Entry Inventory (KEI) assessment instrument—known as the DRDP-K (2015) in California and renamed KEI for use in Tennessee—was developed by the California Department of Education with additional enhancements created in collaboration with the Illinois State Board of Education. The test is not used for placement in programs or services.

^F TDOE provided OREA with information on students who enrolled in state-funded VPK.

^G Some students classified as redshirted were not held back by parental decision but rather falling through the cutoff and enrollment dates; however, they were still older at kindergarten enrollment than a typical child. Kindergarten start dates may fall after the August 15 cutoff. For instance, a student born August 30, 2012, with a kindergarten start date of September 1, 2017, would be ineligible to enroll in kindergarten for the 2017-18 school year unless granted an exception by his LEA. He would have just turned 6 years old prior to kindergarten’s start during the 2018-19 school year. He would be classified as redshirted in OREA’s analysis even though he would, by law, not be allowed to attend kindergarten in the 2017-18 school year. Less than 1 percent of students fell into this category: that is, born in 2012-13 but after August 15 and before their kindergarten start date.

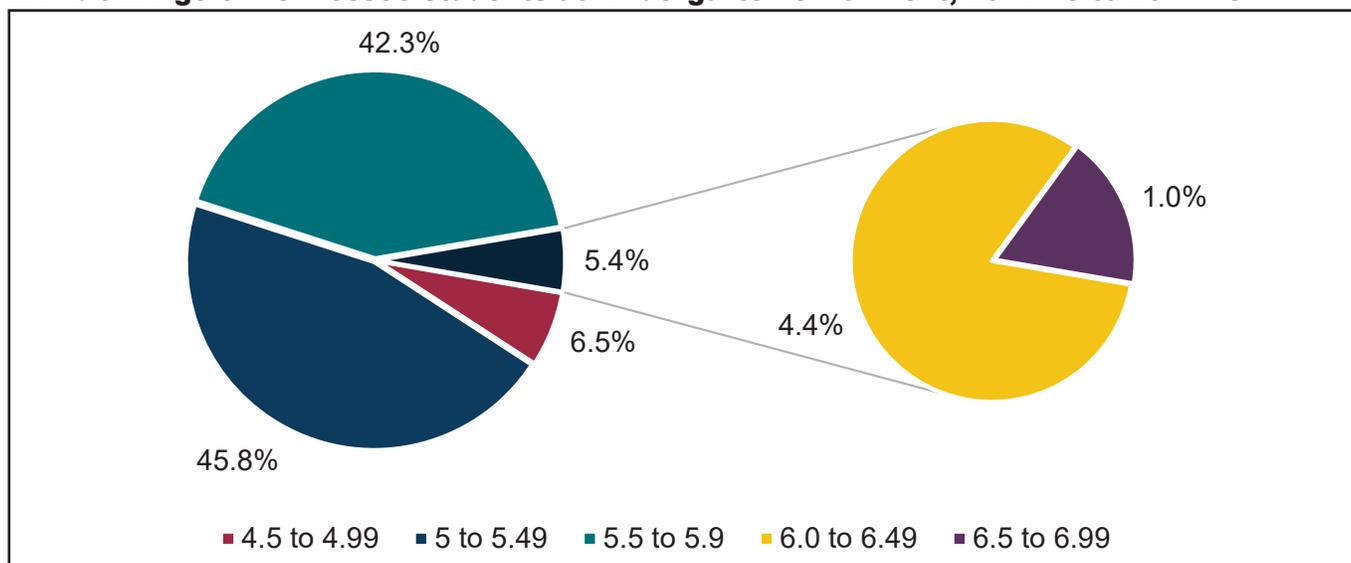
ELA proficiency differs by relative age. Only students who began kindergarten in typical enrollment months (August, September, and October) were analyzed.^H

What does redshirting look like in Tennessee?

Redshirted students make up about 5 percent of kindergarten students. They tend to be White, male, born in summer months, and from families that are not economically disadvantaged

Most Tennessee students enrolled in kindergarten (88 percent) are between 5 and 6 years old at kindergarten enrollment. This figure is similar to national statistics, with 85 percent of kindergarten students nationwide falling between 5 and 6 years of age. About 1 in 8 students start kindergarten outside of that typical range, with 6.5 percent starting early and 5.4 percent delayed.

Exhibit 2: Age of Tennessee students at kindergarten enrollment, 2012-13 to 2017-18



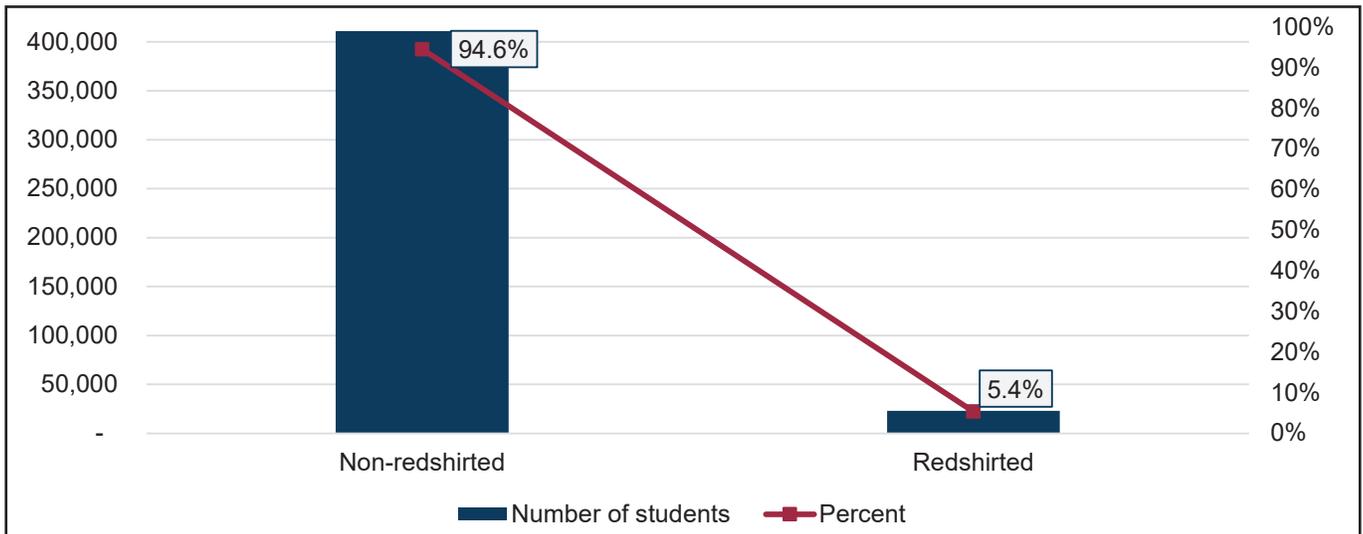
Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent). (2) Students who started kindergarten at ages 4 to 4.49 make up 0.05 percent, but are not represented in the pie chart in Exhibit 2.

The 5.4 percent of students in Exhibit 2 would be considered academically redshirted in OREA's analysis; that is, they started kindergarten at least one year past their fifth birthday. From 2012-13 to 2017-18, approximately 23,000 students across Tennessee were redshirted.

^H Students may transfer from out of state or enroll late in kindergarten. Students starting in August, September, and October accounted for 94 percent of students with kindergarten start dates in the provided data set.

Exhibit 3: About 1 in 20 Tennessee students were redshirted from 2012-13 to 2017-18

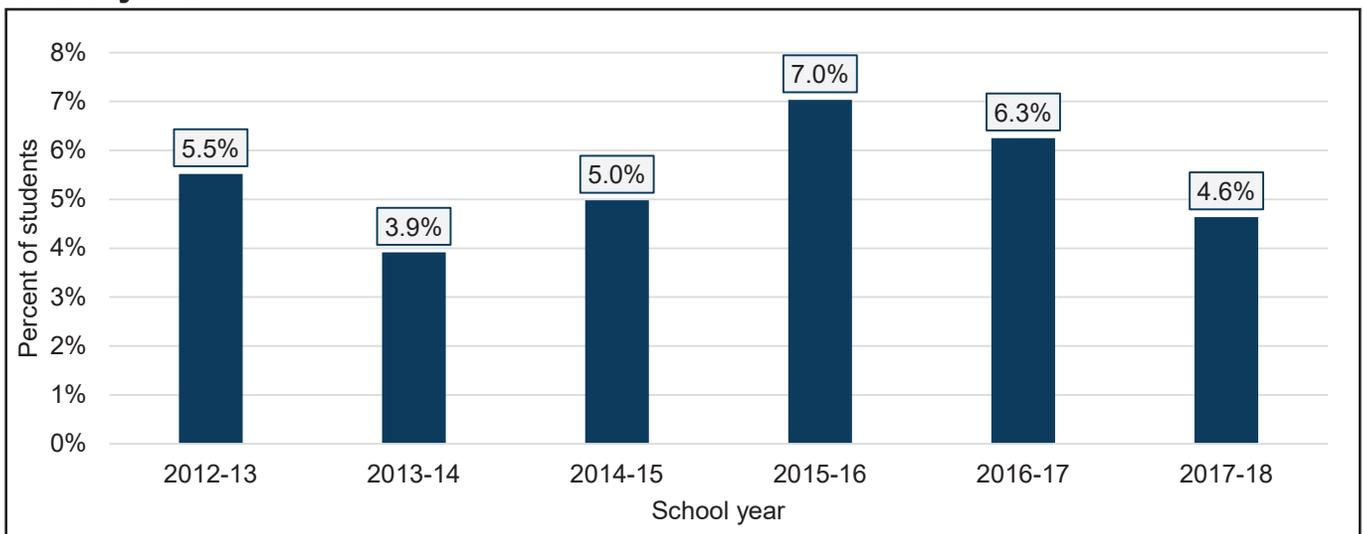


Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent).

While the percentage of students redshirted over time is approximately 5 percent, there is some variation by academic year. Over the five years, the highest proportion of students redshirted was 7 percent in 2015-16, representing almost 5,000 students. OREA did not identify a pattern of increasing or declining redshirting over time; rates fluctuated from 2012-13 to 2017-18.

Exhibit 4: There is no consistent pattern in the prevalence of redshirting over the last several years

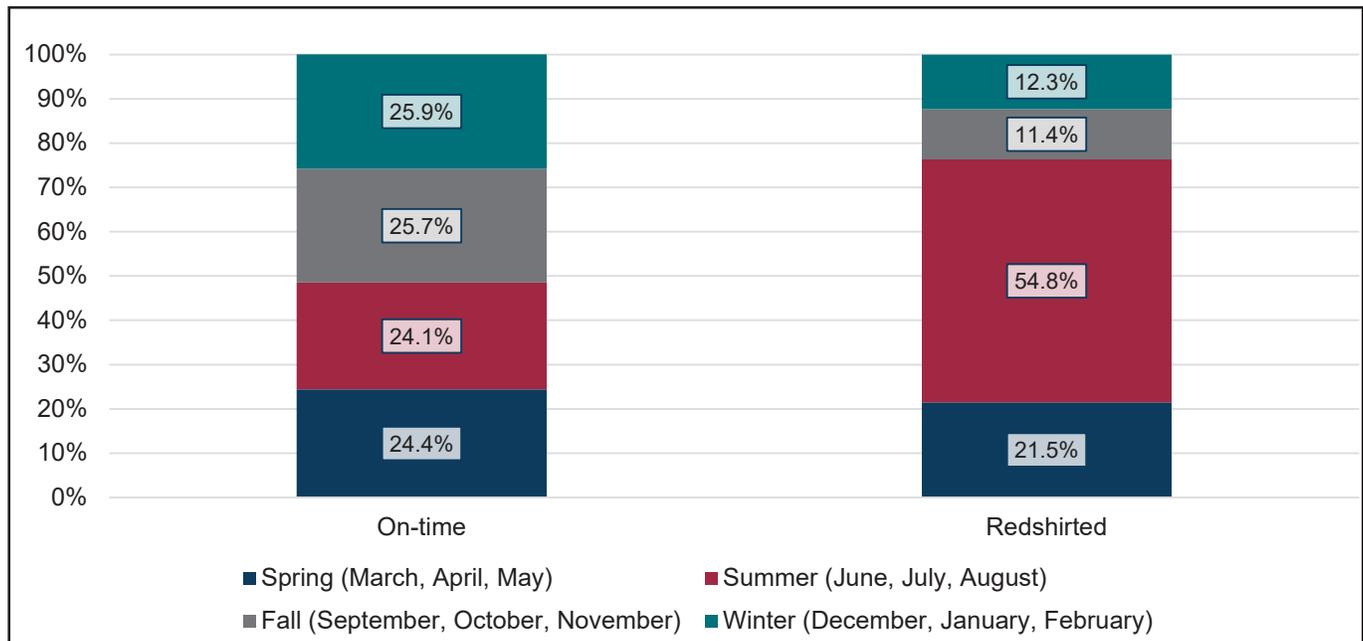


Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent).

In Tennessee, children whose birthdays fell around the state-mandated cutoff date of August 15 (i.e., summer months of June, July, and August) were more likely to be redshirted, as literature suggests. Parents may be more inclined to delay their child’s entrance into kindergarten if he or she is one of the youngest in the class, presuming that a younger child will be less developmentally advanced than older students.

Exhibit 5: Most kindergarten students who were redshirted were born in summer months

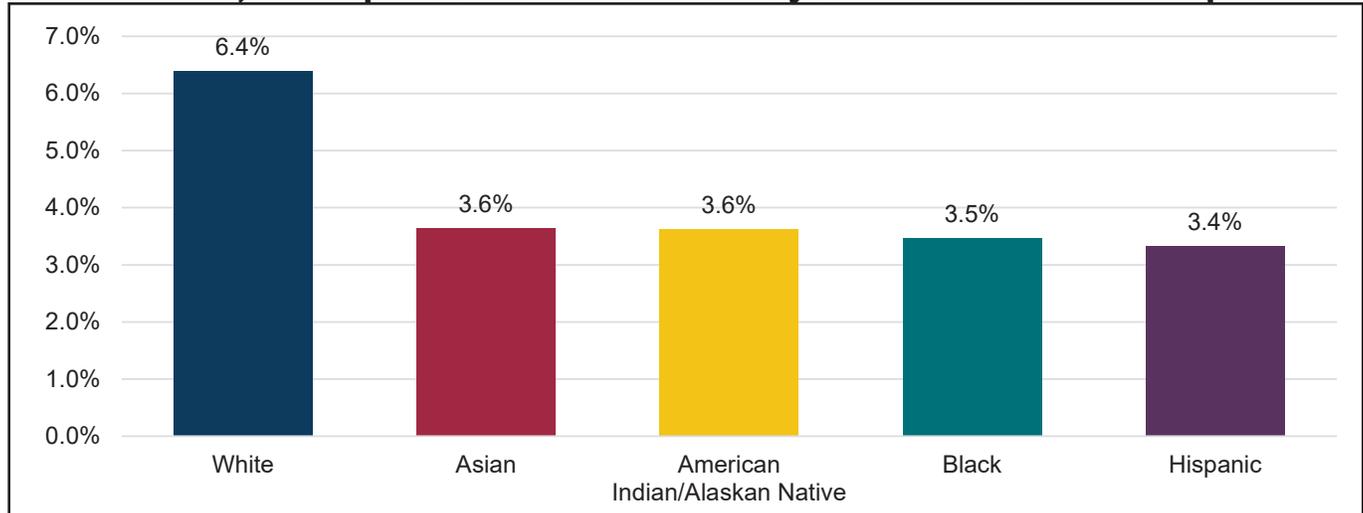


Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent). (2) In 2012-13 the cutoff date was September 30 (18 percent of students started in this school year). In 2013-14 the cutoff date was August 31 (17 percent of students started in this school year). All other students (65 percent) began kindergarten in years in which the start date was August 15.

White children in Tennessee were disproportionately redshirted compared to students from other racial/ethnic categories. From 2012-13 to 2017-18, higher percentages of White students (6.4 percent) were redshirted than other students, with the percentage for Black and Hispanic students 3 percentage points lower (3.5 and 3.4 percent, respectively). National statistics also show levels of disproportionality by race, with 6 percent of white students redshirted compared to less than 1 percent of black students.

Exhibit 6: White, non-Hispanic students are more likely to be redshirted than their peers



Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent).

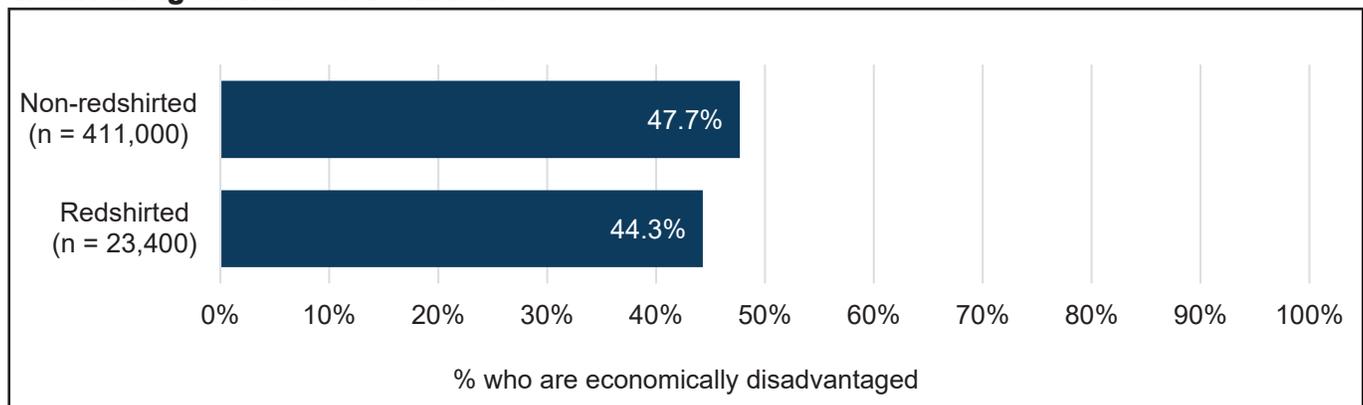
Redshirted children are less likely to be economically disadvantaged than their on-time peers

Research suggests that delayed kindergarten enrollment is more prevalent among middle- and high-income families than low-income families.¹ Low-income families may be unable or less willing to redshirt their children as they may consider retaining their child at home for another year of daycare as more expensive than enrollment in kindergarten.

TDOE classifies students as economically disadvantaged based on eligibility for the free and reduced-price school meal program. Students are classified by direct certification through participation in federal or state programs (e.g., TANF, SNAP¹). Foster, homeless, migrant, and runaway students are also considered to be economically disadvantaged.

Tennessee students who were redshirted had a lower rate of economic disadvantage. In other words, these students were more likely to be from families with better economic circumstances.

Exhibit 7: Redshirted children are 3.4 percentage points less likely to be economically disadvantaged than other children



Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Not all students included, as some did not have data. (2) ED status as measured in any year.

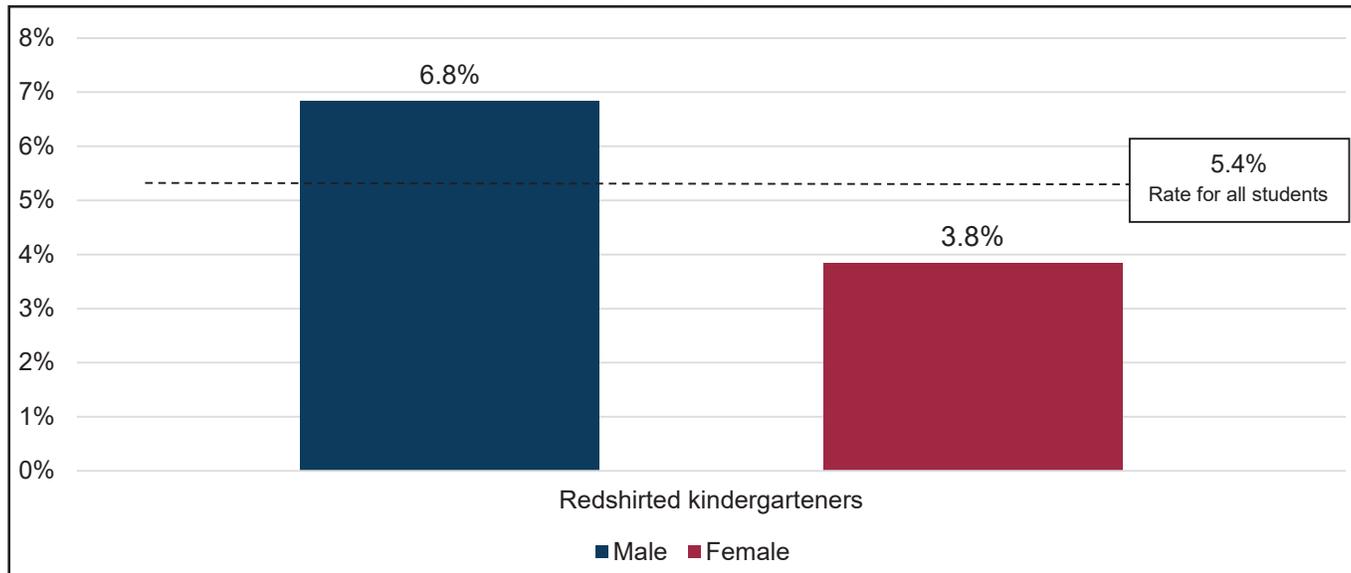
Male children are more likely to be redshirted than female children

Male students are disproportionately redshirted, with a higher than average rate of redshirting at 6.8 percent (3 percentage points higher than that for female students). Literature suggests that parental concerns about child maturity and developmental progression are greater for male children than for female children, which may influence parents of male children to delay enrollment at higher rates than parents of female children.

¹ Bassock, Daphna, and Reardon, Sean, "Academic Redshirting in Kindergarten: Prevalence, Patterns & Implications," *Educational Evaluation and Policy Analysis*, February 2013.

¹ TANF: Temporary Assistance for Needy Families. SNAP: Supplemental Nutrition Assistance Program (previously called food stamps program).

Exhibit 8: Male students are redshirted more often than female students



Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent).

OREA examined redshirting prevalence by district. As mentioned in Exhibit 8, the redshirting rate across the state from 2012-13 to 2017-18 was 5.4 percent; that is, about 23,000 students were redshirted over those five academic years. As expected, larger school districts contained the largest number of students redshirted (Shelby County Schools, Williamson County Schools, Knox County Schools, and Metro Nashville Public Schools). Several school districts were overrepresented in the population of redshirted students, however; that is, they had significantly more redshirted students compared to other districts by their representative proportion of students in the state.^K

Exhibit 9: School districts with highest/lowest proportion of redshirted students, 2012-13 to 2017-18

District	Percent of students redshirted
Top 10 districts	
Rhea County Schools	13.7%
Germantown Municipal	13.2%
Grundy County Schools	12.5%
Lawrence County Schools	11.9%
Humboldt City Schools	11.6%
Macon County Schools	11.3%
Williamson County Schools	11.1%
McNairy County Schools	10.8%
Dayton City Schools	10.6%
Weakley County Schools	10.2%
Districts similar to the state average	
Rutherford County Schools	5.3%
Sullivan County Schools	5.3%
Putnam County Schools	5.3%

^K Measured in percentage point difference.

State average 5.4%	
Jackson County Schools	5.4%
White County Schools	5.5%
Dyer County Schools	5.5%
Bottom 10	
Fayetteville City Schools	3.1%
Monroe County	3.0%
Metro Nashville	3.0%
Milan Special School District	2.9%
Clarksville-Montgomery County School System	2.8%
Millington Municipal School District	2.7%
Sweetwater City Schools	2.5%
Clinton City School District	2.0%
Haywood County Schools	1.7%
Lauderdale County Schools	1.1%

Notes (1) Districts with under 500 students in the sample are excluded. (2) Students enrolled in kindergarten outside of 4.5 to 6.99 years old or entered kindergarten in months other than August, September, or October were excluded from calculations. These students constituted about 6 percent of all students from school year 2012-13 to 2017-18 with enrollment and birthdate information.

Students who were older at kindergarten enrollment performed better on 3rd grade literacy tests than their younger peers

OREA grouped kindergarten students into four equal interval age-groups capturing students from 4.5 years old to 6.5 years old (e.g., students 5 to 5.49 years old are compared to students 5.5 to 5.99 years old). While the typical kindergarten student ranges from 5 to 6 years old, students younger than 5 may receive permission from their LEA to enroll early, and students 6 and older may enroll in kindergarten provided they do so no later than the academic year following their 6th birthday. Only students who enrolled in kindergarten during typical enrollment months (August, September, or October) were analyzed.

Students' performance levels on the 3rd grade ELA test were compared by age band at kindergarten enrollment. OREA analyzed students enrolled in kindergarten from 2012-13 to 2017-18 and thus took 3rd grade ELA tests from 2015-16 to 2020-21. In general, older students performed better than their peers, with 42 percent of students aged 6 to 6.49 (older students) on or above grade level in ELA proficiency compared to 33 percent of younger students aged 4.5 to 4.99 years old. This pattern also remained true for students enrolled in the typical age band from 5 to 5.99 years old; that is, older students outperformed younger students even within the normal kindergarten age range.

Exhibit 10: Performance on 3rd grade ELA test by kindergarten enrollment age

Age at kindergarten enrollment	Performance level, 3 rd grade ELA test				Total number of students
	Below	Approaching	On Track	Mastered	
4.5 to 4.99	17.2%	50.1%	26.3%	6.3%	≈ 12,700 (5.6%)
	67.3 percent of students below grade level		32.7 percent of students on or above grade level		
5 to 5.49	21.0%	44.4%	26.7%	7.9%	≈ 105,700 (46.6%)
	65.4 percent of students below grade level		34.6 percent of students on or above grade level		
5.5 to 5.99	18.5%	40.3%	29.8%	11.4%	≈ 99,300 (43.8%)
	58.8 percent of students below grade level		41.2 percent of students on or above grade level		
6 to 6.49	22.9%	35.3%	28.0%	13.8%	≈ 9,200 (4.0%)
	58.2 percent of students below grade level		41.8 percent of students on or above grade level		
All ages	19.8%	42.6%	28.1%	9.6%	≈ 226,900 (100%)
	62.3 percent of students below grade level		37.7 percent of students on or above grade level		

Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent).

Note: (1) Total numbers of students (i.e., n counts) are approximate.

Performance after 3rd grade

In addition to performance in 3rd grade,¹ OREA also analyzed whether there was a correlation between kindergarten enrollment age and ELA proficiency in the 6th grade. By 6th grade, students are expected to have a solid foundation in reading and writing to build on as they begin engaging with more complex academic material.

Students who were older at kindergarten enrollment (2014-15) scored higher on 6th grade ELA tests than their peers (2020-21). The oldest group of students, those aged 6 to 6.49 at kindergarten enrollment, had the highest proficiency rates, outpacing students who entered kindergarten early by over 10 percentage points. While those students represented the smallest groups, students who were older within the typical age band of kindergarten enrollment age (5 to 6 years old) scored higher as well, at over 5 percentage points greater.

Exhibit 11: Performance at sixth-grade ELA test by kindergarten enrollment age

Age at kindergarten enrollment	Performance level, sixth-grade ELA test		Total number of students
4.5 to 4.99	80.4 percent of students below grade level	19.6 percent of students on or above grade level	≈ 3,400 (6.4%)
5 to 5.49	75.8 percent of students below grade level	24.2 percent of students on or above grade level	≈ 25,400 (48.1%)
5.5 to 5.99	70.8 percent of students below grade level	29.2 percent of students on or above grade level	≈ 22,100 (41.9%)
6 to 6.49	67.2 percent of students below grade level	32.8 percent of students on or above grade level	≈ 1,900 (3.6%)
All ages	73.7 percent of students below grade level	26.3 percent of students on or above grade level	≈ 52,800 (100%)

Source: OREA analysis of TDOE data.

Notes: (1) Does not include students who started kindergarten in months other than August, September, and October (5.6 percent). (2) The number of students in this exhibit is smaller than the number of students included in Exhibit 10. This is because Exhibit 10 includes more years of student data. (3) The majority of students in Exhibit 11 were in 6th grade during the 2020-21 school year, so performance on the assessment may have been affected by learning loss during the COVID-19 pandemic. For instance, the ELA proficiency rate for the 2018-19 school year was 33.4 percent as reported by TDOE, 7 percentage points greater. (3) Total numbers of students (i.e., n counts) are approximate.

¹Third-grade literacy is a key goal for Tennessee. Studies indicate that a child's literacy proficiency at third grade is a key predictor of future success. Children who are not ELA proficient by the end of third grade are four times more likely to drop out of high school.

Statistical analyses support performance differences by age group

OREA conducted statistical analyses using students' *scaled scores* on the 3rd grade ELA TCAP test. Scaled scores represent the numerical assessment of a child's performance on the test. Scaled scores are then translated into performance levels such as were presented in Exhibit 10.

One such statistical test compared groups of students to determine if there was any difference in the mean scaled scores by age at kindergarten enrollment.^M Due to data variations in scaled score values between testing years, only students from 2017-18 were analyzed (n=63,000). Of note, the youngest group (4.5 to 4.99) and oldest group (6 to 6.49) were substantially smaller than the age groups in the middle (5 to 5.49; 5.5 to 5.99), which represent typical kindergarten ages of enrollment. Students in these groups respectively totaled 6 and 4 percent of the population analyzed. Despite this, all results were statistically significant.

The statistical test suggested that kindergarten students' 3rd grade ELA scores were significantly different^N by age of enrollment in all categories; that is, in the four groups of students identified (4.5 to 4.99; 5 to 5.49; 5.5 to 5.99; 6 to 6.49) scores differed. In general, students in the older groups were predicted to score higher. The most pronounced difference occurred between students who entered kindergarten early (ages 4.5 to 4.99) and those who entered kindergarten on time but potentially were one year older (ages 5.5 to 5.99). The test estimated that the older students would score 9 points greater. One exception to the trend was that students in the oldest age category (6.0 to 6.49) were predicted to score 1 point lower than those between 5.5 and 5.99 years old. This could be due to the relatively small sample size within these two age groups.

Exhibit 12: In general, students who were older in kindergarten were more likely to have higher 3rd grade ELA scores

Age group	Difference
(5.0 to 5.49) versus (4.5 to 4.99)	3.3 points higher
(5.5 to 5.99) versus (4.5 to 4.99)	9.0 points higher
(6.0 to 6.49) versus (4.5 to 4.99)	8.0 points higher
(5.5 to 5.99) versus (5.0 to 5.49)	5.7 points higher
(6.0 to 6.49) versus (5.0 to 5.49)	4.8 points higher
(6.0 to 6.49) versus (5.5 to 5.99)	1.0 points lower
Average scaled score on test, all ages	347 Performance level "Approaching"

Source: OREA analysis of TDOE data, 2017-18 school year.

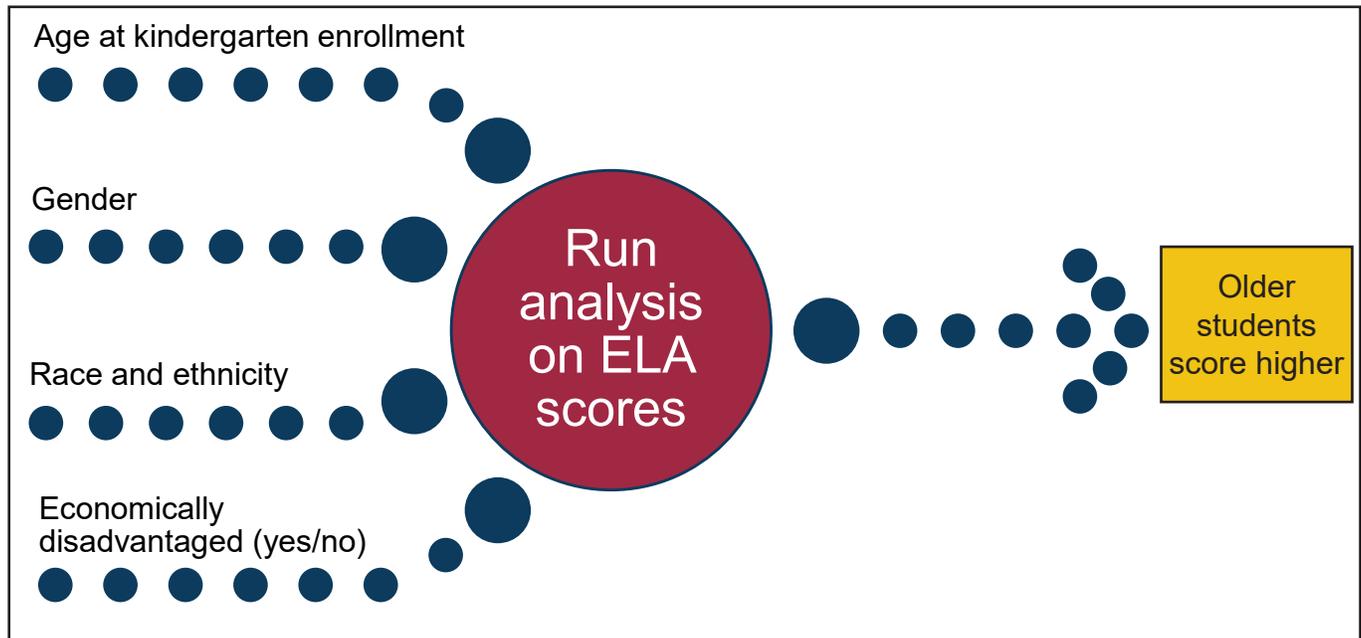
OREA also conducted a statistical test that controlled for students' demographic and socioeconomic features. Studies indicate that students' academic achievement can be affected by factors like whether a student is economically disadvantaged. As reported in this brief, Tennessee students who are redshirted are typically male, White, and are not economically disadvantaged. To account for these external influences, OREA conducted a regression analysis including gender, race/ethnicity, and economically disadvantaged status.

For students between the ages of 4 and 7 enrolled in kindergarten during the 2017-18 school year, an increase in age predicted an increase in 3rd grade scaled ELA score, taking into account gender, ethnicity, and economically disadvantaged status. In other words, students who were older at kindergarten enrollment were more likely to score higher on 3rd grade literacy tests even after accounting for demographic and socioeconomic differences.

^M OREA conducted an ANOVA (analysis of variance) test.

^N At the 95 percent confidence level.

Exhibit 13: Results of OREA analysis to determine the effect of various factors on 3rd grade ELA scores



Source: OREA analysis of TDOE data, 2017-18 school year.

Note: Female, White, and non-economically disadvantaged students scored higher on 3rd grade ELA tests.

Summary

Tennessee’s 3rd grade literacy rate was approximately 38 percent over four years examined (2016-17 to 2020-21); that is, about 2 in 5 students were at or above grade level on 3rd grade measures of literacy (n≈270,000).^o OREA found that students who enrolled in kindergarten older than their peers performed better on both 3rd grade and 6th grade literacy tests. On average, 41 percent of students aged 5.5 to 5.9 years of age were proficient in 3rd grade literacy and 42 percent of students aged 6 to 6.49, compared to 33 and 35 percent, respectively, for students aged 4.5 to 4.9 and 5 to 5.49 at kindergarten enrollment. (See Exhibit 10.) This trend of older students outperforming their younger peers continued past 3rd grade as measured by students’ later performance on 6th grade ELA tests.

A typical redshirted child is White, non-Hispanic, not economically disadvantaged, and male.

This brief did not evaluate the effectiveness of delaying kindergarten entry. Any policy decisions on kindergarten age enrollment requirements or kindergarten enrollment cutoff dates should involve considerations of multiple demographic and socioeconomic factors.

While Tennessee students who were older performed better on both measures of 3rd grade and 6th grade literacy during the period examined, these students do not represent a random sample. As mentioned in Exhibit 7, students who were redshirted are less likely to be economically disadvantaged than their non-redshirted peers. They were also disproportionately White. Other variables that could be helpful for the analysis were not available (e.g., non-state-funded pre-kindergarten enrollment, household adjusted gross income, parent marital status).

Due to the limitations of OREA’s analysis, results should be used in conjunction with other information. For instance, this brief may be helpful for parents when deciding what age to enroll their child in kindergarten. Other factors, such as their child’s emotional or academic maturity, may also be considered. In addition, schools may benefit from examining their kindergarten enrollment patterns to tailor instruction or services accordingly.

^o Data from 2019-20 was excluded due to COVID-19 testing disruptions.

Appendix A: State requirements for kindergarten entrance age and attendance

State	Compulsory school age	Kindergarten entrance age	State requires district to offer full-day kindergarten program	State requires district to offer half-day kindergarten program	State requires kindergarten attendance
United States	†	†	21 ¹	25	20 ¹
Alabama	6	5 on or before 9/1	Yes	No	No
Alaska	7	5 on or before 9/1	No	No	No
Arizona	6	5 on or before 8/31	No	Yes	No
Arkansas	5	5 on or before 8/1	Yes	No	Yes
California	6	5 on or before 9/1	No	Yes	No
Colorado	6	5 on or before 10/1	Yes	No	No
Connecticut	5	5 on or before 1/1	No	Yes	Yes
Delaware	5	5 on or before 8/31	Yes	No	Yes
District of Columbia	5	5 on or before 9/30	Yes	No	Yes
Florida	6	5 on or before 9/1	†	†	No
Georgia	6	5 by 9/1	No	Yes	No
Hawaii	5	5 on or before 7/31	Yes	No	Yes
Idaho	7	5 on or before 9/1	No	No	No
Illinois	6	5 on or before 9/1	Yes ²	Yes	No
Indiana	7	5 on or before 8/1	Yes ²	Yes	No
Iowa	6 ³	5 by 9/15	No	Yes	†
Kansas	7	5 on or before 8/31	No	Yes	†
Kentucky	6	5 on or before 7/31	No	Yes	No
Louisiana	7	5 by 9/30	Yes	No	Yes ⁴
Maine	6	5 on or before 10/15	No	Yes	†
Maryland	5	5 by 9/1	Yes	No	Yes
Massachusetts	6	Each district may establish its own minimum permissible age for school attendance	No	Yes	†
Michigan	6	5 by 9/1	No	No	No
Minnesota	7	5 on or before 9/1	No	No	No
Mississippi	6	5 on or before 9/1	Yes	No	†
Missouri	7 ⁵	5 on or before 7/31 ⁶	No	Yes	No
Montana	7	5 on or before 9/10	Yes ²	Yes	No
Nebraska	6	5 on or before 9/30	No	Yes	Yes ⁷
Nevada	7	5 on or before 9/30	No	Yes	Yes
New Hampshire	6	Not specified in statute or regulation	No	No	No
New Jersey	6	Local education agency (LEA) option	No	No	No ⁹
New Mexico	5	5 on or before 9/1	No	Yes	Yes
New York	6	LEA option ¹⁰	No	No	No
North Carolina	7	5 on or before 8/31	Yes	No	No ¹¹
North Dakota	7	5 on or before 7/31	No	Yes	No

Source: National Center for Education Statistics, 2020, https://nces.ed.gov/programs/statereform/tab1_3-2020.asp.

State	Compulsory school age	Kindergarten entrance age	State requires district to offer full-day kindergarten program	State requires district to offer half-day kindergarten program	State requires kindergarten attendance
Ohio	6	LEA option ¹²	No	Yes	Yes
Oklahoma	5	5 on or before 9/1	Yes	No	Yes ¹³
Oregon	6	5 on or before 9/1	No	Yes	No
Pennsylvania	6	LEA option ¹⁴	No	No	Yes
Rhode Island	5	5 on or before 9/1	Yes	No	Yes
South Carolina	5	5 on or before 9/1	Yes	No	Yes
South Dakota	5	5 on or before 9/1	No	Yes	Yes
Tennessee	6	5 on or before 8/15	Yes	No	Yes
Texas	6	5 on or before 9/1	Yes ²	Yes	No
Utah	6	5 on or before 9/1	No	Yes	No
Vermont	6	5 ¹⁵	No	Yes	No
Virginia	5	5 on or before 9/30	Yes	No	Yes
Washington	8	5 on or before 8/31	Yes	No	No
West Virginia	6	5 on or before 8/31 ¹⁶	Yes	No	Yes
Wisconsin	6	5 on or before 9/1 ¹⁷	No	Yes	Yes ¹⁸
Wyoming	7	5 on or before 9/15	No	Yes	†

Source: National Center for Education Statistics, 2020, https://nces.ed.gov/programs/statereform/tab1_3-2020.asp.

† Not applicable.

¹ The total reflects the number of “Yes” responses in the column.

² Districts must offer either full-day or half-day kindergarten. In Texas, this is an option for a school district’s board of trustees.

³ Children who are 4 or 5 years old and enrolled in a school district are considered to be compulsory attendance age unless a parent or legal guardian notifies the school district in writing of their intent to remove their child from enrollment.

⁴ Or children must otherwise satisfactorily pass an academic readiness screening upon enrollment in grade 1.

⁵ A child between ages 5 and 7 can be excused from school attendance if a parent or guardian makes a written request that the child be dropped from the school’s rolls.

⁶ Metropolitan districts can establish a policy that a child must be 5 on or before any date between August 1 and October 1.

⁷ Or children must otherwise be assessed as prepared to enter grade 1.

⁸ Districts may admit children ages 4 and 5, and they must admit children ages 5 to 6. The cutoff date must be after October 1.

⁹ Children are required to attend full-day kindergarten in the Abbott Districts.

¹⁰ Students must be between the ages of 4 and 6.

¹¹ The initial entry point into school is kindergarten, but a principal may override this for an exceptionally mature student and place the child in grade 1.

¹² Districts may adopt a resolution establishing August 1 instead of September 30 as the required date by which students must have attained a specified age.

¹³ Minimum half-day attendance.

¹⁴ Students must be between the ages of 4 and 6. Minimum age for kindergarten entrance is 4 years 7 months before the first day of the school year.

¹⁵ LEA may require students admitted to kindergarten to attain the age of 5 on or before August 31 and January 1.

¹⁶ Beginning in the 2018–19 school year, districts must offer prekindergarten to all children who are 4 years old before July 1.

¹⁷ Kindergarten entrance age is 5 on or before September 1 for 5-year-old kindergarten or 4 on or before September 1 for 4-year-old kindergarten.

¹⁸ Children must attend in districts that offer kindergarten.

¹⁹ The state requires that LEAs offer half-day kindergarten. School districts must establish and maintain relationships with a district that offers one full-day kindergarten.

Appendix B: Kindergarten entrance assessment requirements | by state

State	Are kindergarten entrance assessments required? If yes, what are states required to do with the results?	Source
Alabama	Not specified in statute or regulation.	
Alaska	Kindergarten Entrance Assessment/Results: Districts must submit to the department a developmental profile for each student entering kindergarten or 1 st grade with indicators such as physical well-being and motor development; language and literacy development; personal-social development; thinking and cognitive development; and child background.	Alaska Admin. Code tit. 4 § 06.712
Arizona	Not specified in statute or regulation.	
Arkansas	Kindergarten Entrance Assessment: The Division of Elementary and Secondary Education must develop guidelines for school districts to perform readiness testing for children who are entering kindergarten, and each school district must conduct individual readiness testing on each child entering kindergarten. Results: Districts must provide the results of the testing to the child's parents in a timely manner, and in clear, understandable terminology, before the first day of school.	Ark. Code Ann. § 6-16-203
California	Kindergarten Entrance Assessment: Standardized assessment tests in early primary programs (preschool through 3 rd grade) may be used for diagnostic purposes only. Results: Assessments cannot be used to deny admission.	Cal. Educ. Code § 8972
Colorado	Kindergarten Entrance Assessment: The state board must adopt at least one assessment that is aligned with the description of school readiness and is suitable for measuring students' levels of school readiness. Local education providers must administer the assessment within the first 60 days of the school year for students enrolled in kindergarten programs. Results: Results of these assessments may not be used to deny a student admission or progression to 1 st grade. Results may not be publicly reported for individual students. The state board must adopt a system for reporting population-level results that provide baseline data for measuring overall change and improvement in students' skills and knowledge over time.	Colo. Rev. Stat. Ann. § 22-7-1004 Colo. Rev. Stat. Ann. § 22-7-1014
Connecticut	Kindergarten Entrance Assessment: The Office of Early Childhood is responsible for developing a statewide developmentally appropriate kindergarten entrance inventory that measures a child's level of preparedness for kindergarten. Results: This assessment may not be used as a measurement tool for program accountability.	Conn. Gen. Stat. Ann. § 10-500
Delaware	Kindergarten Entrance Assessment: Kindergarten students must be reviewed for readiness during their enrollment into kindergarten; this readiness review must be completed within 30 school days of the start of school. Results: Not specified in statute or regulations.	Del. Code Ann. tit. 14, § 151
District of Columbia	Kindergarten Entrance Assessment: Readiness evaluations must be administered for all children entering the DC Public Schools kindergarten program to determine readiness for entry and achievement. Results: The chief executive officer of DC Public Schools must annually submit the results of the readiness evaluations, as well as a DC Public Schools report delineating the progress and readiness of all students, to the DC mayor and council.	D.C. Code § 38-755.03 and § 38-755.04

State	Are kindergarten entrance assessments required? If yes, what are states required to do with the results?	Source
Florida	<p>Kindergarten Entrance Assessment: The department of education must adopt a statewide kindergarten screening to assess readiness of student for kindergarten, and require each school district to administer the assessment within the first 30 school days of each school year.</p> <p>Results: Data from this screening, along with other available data, must be used to identify students in need of intervention and support. Results of the kindergarten entrance assessment are also used to evaluate the voluntary pre-kindergarten education program.</p>	Fla. Stat. Ann. § 1002.69
Georgia	Not specified in statute or regulation.	
Hawaii	Not specified in statute or regulation.	
Idaho	Not specified in statute or regulation.	
Illinois	<p>Kindergarten Entrance Assessment: The Kindergarten Individual Development Survey (KIDS) must be administered annually to each student enrolled in kindergarten, if the state provides sufficient funding for administration.</p> <p>Results: Data for each student, based on local instruction and assessment practices, must be reported through the KIDSTech rating system. Each school district must report the results of KIDS to the state board of education once each school year.</p>	Ill. Admin. Code tit. 23, 1.420
Indiana	<p>Kindergarten Entrance Assessment: If a student enrolls in school without having attended kindergarten, the superintendent must make a determination as to whether the student will enroll in kindergarten or 1st grade. The department of education must establish criteria by which a governing body may adopt a model assessment to be used in making such a determination.</p> <p>Results: Results are used to determine grade placement.</p>	Ind. Code Ann. § 20-33-2-7
Iowa	<p>Kindergarten Entrance Assessment: Districts must administer a valid and reliable universal screening instrument to every kindergarten student enrolled in the district.</p> <p>Results: Results must be entered into the statewide longitudinal data system.</p>	Iowa Code Ann. § 279.60
Kansas	Not specified in statute or regulation.	
Kentucky	<p>Kindergarten Entrance Assessment: Each school district must administer the Common Kindergarten Entry Screening to each student entering kindergarten no later than 30 days after the start of the school year.</p> <p>Results: Results must be entered into the student information system within 30 days of the start of the school year and individual results must be shared with parents or guardians. Results may not be used to determine student enrollment eligibility, and may not be used in the school or district overall score for assessment purposes. Districts may use the data to inform districts, parents and communities about readiness gaps; inform policy decisions; establish local goals for program improvement; and as part of program evaluation.</p>	704 Ky. Admin. Regs. 5:070
Louisiana	<p>Kindergarten Entrance Assessment: Every student entering kindergarten must be administered a valid and reliable readiness assessment.</p> <p>Results: Results must be used for measuring student readiness for kindergarten and for planning instruction. Each public school governing authority must report results by school to the department of education each year.</p>	La. Rev. Stat. Ann. § 17:391.11
Maine	Not specified in statute or regulation.	

State	Are kindergarten entrance assessments required? If yes, what are states required to do with the results?	Source
Maryland	<p>Kindergarten Entrance Assessment: Local school systems must annually administer a department-approved kindergarten readiness assessment to a representative sample of kindergartners. A local county board of education may decide to assess all students in all kindergarten classes, and a principal and teacher who are in agreement may decide to assess all students in that teacher’s kindergarten class.</p> <p>Results: The department of education must provide each local school system with the results of the representative sample’s assessments, and publish and disseminate the aggregated results. For local school systems that have elected to administer the assessment to all students, the department must return aggregate results to that system.</p>	Md. Code Regs. 13A.08.01.02-3 Md. Code Ann., Educ. § 7-210
Massachusetts	<p>Kindergarten Entrance Assessment: The department of early education and child care must establish an assessment system that includes a kindergarten readiness assessment system.</p> <p>Results: Data collected from assessments may not be used for high-stakes decisions about a child’s progress within the preschool environment or about their transition to kindergarten. Data may also not be used to rank individual students within a program.</p>	Mass. Gen. Laws Ann. 15D § 12
Michigan	<p>Kindergarten Entrance Assessment: The department of education, in collaboration with intermediate districts, must administer the Michigan kindergarten entry observation tool in each kindergarten classroom to either all enrolled students or to a representative sample of at least 35 percent of enrolled students.</p> <p>Results: Results must be reported to the legislature, including comparisons between students who attended Head Start or state pre-K. Student-level data must be made available to educators and parents, and principals must use data on incoming students to target teacher professional development.</p>	Mich. Comp. Laws Ann. 388.1704 and 380.1280f
Minnesota	<p>Kindergarten Entrance Assessment: The commissioner of education may implement a kindergarten readiness assessment representative of incoming kindergartners. The assessment must be based on the department of education kindergarten readiness assessment at kindergarten entrance.</p>	Minn. Stat. Ann. § 124D.162
Mississippi	<p>Kindergarten Entrance Assessment: All kindergarten students are required to participate in the kindergarten readiness assessment established by the department of education. The assessment must be taken no later than 30 days after the start of the school year</p> <p>Results: Parents and guardians must be informed of their student’s performance. Districts must report results to the state superintendent of education.</p>	Code Miss. R. 7-7 Miss. Code. Ann. § 37-21-11
Missouri	Not specified in statute or regulation.	
Montana	Not specified in statute or regulation.	
Nebraska	<p>Kindergarten Entrance Assessment: Each school board must approve and make available a recognized assessment procedure for determining if a child is ready for kindergarten.</p> <p>Results: Not specified in statute or regulations.</p>	92 Neb. Admin. Code Ch. 10, 004
Nevada	<p>Kindergarten Entrance Assessment: If a child is 7 years of age on or before September 30 of a school year and their parents or guardians have waived their kindergarten attendance, the child must undergo an assessment from the district.</p> <p>Results: The results of this assessment will be used to determine whether these students are prepared developmentally for the 1st grade or should first be admitted to kindergarten.</p>	Nev. Rev. Stat. Ann. § 392.040

State	Are kindergarten entrance assessments required? If yes, what are states required to do with the results?	Source
New Hampshire	Not specified in statute or regulation.	
New Jersey	Not specified in statute or regulation.	
New Mexico	<p>Kindergarten Entrance Assessment: All students in kindergarten must be administered the New Mexico kindergarten entry assessment within the first 30 instructional days of the school year.</p> <p>Results: Data must be reported through the public education department's data collection reporting system.</p>	N.M. Admin. Code 6.30.5
New York	<p>Kindergarten Entrance Assessment: Each school district must administer diagnostic screening of all new students, pre-kindergarten through grade 12.</p> <p>Results: Results of the diagnostic screening must be reviewed, and a written report must be prepared by appropriately qualified school district staff alongside referrals as required.</p>	N.Y. Comp. Codes R. & Regs. tit. 8, § 117.3
North Carolina	<p>Kindergarten Entrance Assessment: All students entering kindergarten must complete a kindergarten entrance assessment within 60 days of enrollment. All students entering kindergarten must be administered a developmental screening of early language, literacy, and math skills within 30 days of enrollment. The developmental screening instrument may be composed of subsections of the kindergarten entry assessment.</p> <p>Results: The results of the assessment must be used to inform the status of children's learning at kindergarten entry, the instruction of each child, the efforts to reduce the achievement gap at kindergarten entry, and the continuous improvement of the early childhood system.</p>	N.C. Gen. Stat. Ann. § 115C-83.5
North Dakota	<p>Kindergarten Entrance Assessment: Districts have the option to conduct a readiness test and formative assessments of incoming kindergarten students.</p> <p>Results: Not specified in statute or regulations.</p>	N.D. Cent. Code Ann. § 15.1-21-23
Ohio	<p>Kindergarten Entrance Assessment: Districts must administer the kindergarten readiness assessment provided by the state department of education to all kindergarten students between the first day of school and the first day of November.</p> <p>Results: Results may not be used to prohibit a student from enrolling in kindergarten. The results must be shared with the student's parents or guardians as well as with the state department of education.</p>	Ohio Rev. Code Ann. § 3301.0715
Oklahoma	<p>Kindergarten Entrance Assessment: The state board of education must develop and implement a readiness screening program for students enrolled in kindergarten. The screening must be administered prior to the student entering 1st grade in a public school.</p> <p>Results: Results of the screening must be made available to the child's parent or legal guardian, teacher, and school district administrator. The child's parents or legal guardian must be given notice prior to a readiness screening.</p>	Okla. Stat. Ann. tit. 70, § 1210.282 Okla. Stat. Ann. tit. 70, § 1210.283
Oregon	<p>Kindergarten Entrance Assessment: The department of education must work jointly with the early learning council to adopt a tool to be used for a kindergarten readiness assessment, which must be administered by school districts to all kindergarten students.</p> <p>Results: Results must be included in the statewide longitudinal data system.</p>	Or. Admin. R. 581-022-2130
Pennsylvania	Not specified in statute or regulation.	

State	Are kindergarten entrance assessments required? If yes, what are states required to do with the results?	Source
Rhode Island	<p>Kindergarten Entrance Assessment: Districts are required to screen all children prior to, or upon, their first entry into school to determine their level of educational readiness.</p> <p>Results: The results are used to determine if the student is educationally ready in instruction in literacy, writing, speaking, listening, or mathematics.</p>	R.I. Gen. Laws Ann. § 16-67-2
South Carolina	<p>Kindergarten Entrance Assessment: Every student entering public school for the first time in prekindergarten and kindergarten must be administered a readiness screening by the day 45 of the school year.</p> <p>Results: Results may not be used to deny a student admission or progress to kindergarten or 1st grade, and individual results may not be publicly reported. The state board of education must adopt a system for reporting population-level results that provide baseline data for measuring overall change and improvement in the skills and knowledge of students over time. The South Carolina First Steps to School Readiness Board of Trustees must use the assessment information to establish standards and practices to support all early childhood providers served by First Steps. The board must report the results of the assessment by state and by county on annual reports to the General Assembly, and use the results to assist county partnerships to support local initiatives to improve readiness for all schools. Results of each readiness assessment must also be reported to the Read to Succeed office.</p>	S.C. Code Ann. § 59-152-33 S.C. Code Ann. § 59-155-150
South Dakota	Not specified in statute or regulation.	
Tennessee	Not specified in statute or regulation.	
Texas	Not specified in statute or regulation.	
Utah	<p>Kindergarten Entrance Assessment: Local education agencies must give all kindergarten students a kindergarten entrance assessment either three weeks before or three weeks after the school year begins.</p> <p>Results: Districts must submit entry assessment data to the Utah educational data gateway. Districts may not use that data to justify early enrollment of a student who is not currently eligible to enroll in kindergarten, evaluate an educator's teaching performance, or determine whether a student should be retained or promoted between grades.</p>	Utah Admin. Code r. R277-489-3 through R277-489-4
Vermont	Not specified in statute or regulation.	
Virginia	Not specified in statute or regulation.	
Washington	<p>Kindergarten Entrance Assessment: Kindergarten teachers must administer the Washington kindergarten inventory of developing skills. School districts may seek waivers under specific circumstances.</p> <p>Results: Results must be reported to the superintendent, who will share the results with the secretary of the department of children, youth, and families.</p>	Wash. Rev. Code Ann. § 28A.150.315 Wash. Rev. Code Ann. § 28A.655.080
West Virginia	Not specified in statute or regulation.	
Wisconsin	Not specified in statute or regulation.	
Wyoming	Not specified in statute or regulation.	Wyo. Stat. Ann. § 21-3-401

Source: Education Commission of the States, "Are kindergarten entrance assessments required?" June 2018, <https://reports.ecs.org/comparisons/state-k-3-policies-05>.

Appendix C: Average age by district | academic years 2012-2013 to 2017-18

School district	Average age at enrollment
Achievement School District	5.48
Alamo City School District	*
Alcoa City Schools	5.48
Anderson County Schools	5.45
Arlington Municipal School District	5.52
Athens City Schools	5.47
Bartlett Municipal School District	5.49
Bedford County Schools	5.49
Bells City School District	*
Benton School System	5.49
Bledsoe County Schools	5.44
Blount County Schools	5.50
Bradford Special School District	*
Bradley County Schools	5.47
Bristol City Schools	5.49
Campbell County Schools	5.47
Cannon County School District	5.49
Carter County Schools	5.50
Cheatham County School District	5.47
Chester County School System	5.49
Claiborne County Schools	5.46
Clarksville-Montgomery County School System	5.46
Clay County Schools	*
Cleveland City Schools	5.44
Clinton City School District	5.44
Cocke County School System	5.46
Coffee County Schools	5.46
Collierville Municipal School District	5.54
Crockett County Schools	*
Cumberland County Schools	5.47
Dayton City School	5.53
Decatur County Schools	5.46
DeKalb County School District	5.47
Dickson County School District	5.46
Dyer County Schools	5.45
Dyersburg City Schools	5.44

School district	Average age at enrollment
Elizabethton City Schools	5.47
Etowah City School	*
Fayette County Schools	5.44
Fayetteville City Schools	5.44
Fentress County Schools	5.47
Franklin County Schools	5.46
Franklin Special School District	5.51
Germantown Municipal School District	5.59
Gibson County Special School District	5.51
Giles County Schools	5.49
Grainger County Schools	5.47
Grand Total	5.47
Greene County Schools	5.48
Greeneville City Schools	5.47
Grundy County Schools	5.52
Hamblen County Schools	5.47
Hamilton County Schools	5.49
Hancock County Schools	*
Hardeman County Schools	5.45
Hardin County Schools	5.47
Hawkins County Schools	5.48
Haywood County Schools	5.43
Henderson County Schools	5.49
Henry County School System	5.45
Hickman County Schools	5.46
Hollow Rock-Bruceton Special School District	*
Houston County Schools	5.43
Humboldt City Schools	5.48
Humphreys County School System	5.48
Huntingdon Special School District	5.50
Jackson County Schools	5.46
Jackson-Madison County Schools	5.48
Jefferson County Schools	5.48
Johnson City Schools	5.44
Johnson County Schools	5.41
Kingsport City Schools	5.49
Knox County Schools	5.50
Lake County School System	*

School district	Average age at enrollment
Lakeland School System	5.53
Lauderdale County Schools	5.41
Lawrence County Schools	5.54
Lebanon Special School District	5.45
Lenoir City Schools	5.44
Lewis County Schools	5.48
Lexington City Schools	5.51
Lincoln County Department of Education	5.49
Loudon County Schools	5.47
Macon County Schools	5.53
Manchester City Schools	5.48
Marion County Schools	5.48
Marshall County Schools	5.50
Maryville City Schools	5.52
Maury County Schools	5.48
McKenzie Special School District	5.51
McMinn County Schools	5.47
McNairy County Schools	5.52
Meigs County School System	5.44
Metro Nashville Public Schools	5.44
Milan Special School District	5.44
Millington Municipal School District	5.50
Monroe County Schools	5.46
Moore County Schools	*
Morgan County Schools	5.45
Murfreesboro City Schools	5.46
Newport City School	*
Oak Ridge City Schools	5.44
Obion County Schools	5.50
Oneida Special School District	*
Overton County Schools	5.50
Paris Special School District	5.48
Perry County Schools	*
Pickett County Schools	*
Polk County Schools	5.48
Putnam County School System	5.46
Rhea County Schools	5.55
Richard Hardy Memorial School	*

School district	Average age at enrollment
Roane County Schools	5.49
Robertson County Schools	5.47
Rogersville City School	*
Rutherford County Schools	5.49
Scott County Schools	5.49
Sequatchie County Schools	5.50
Sevier County School System	5.52
Shelby County Schools	5.44
Smith County School District	5.51
South Carroll County Special School District	*
Stewart County Schools	5.47
Sullivan County Schools	5.47
Sumner County Schools	5.51
Sweetwater City Schools	5.45
Tennessee School for the Blind	*
Tennessee School for the Deaf	*
Tipton County Schools	5.45
Trenton Special School District	5.46
Trousdale County Schools	5.49
Tullahoma City Schools	5.47
Unicoi County Schools	5.47
Union City Schools	5.48
Union County Schools	5.47
Van Buren County Schools	*
Warren County School District	5.47
Washington County Schools	5.49
Wayne County Schools	5.46
Weakley County Schools	5.53
West Carroll Special School District	*
West Tennessee School for the Deaf	*
White County Schools	5.49
Williamson County Schools	5.57
Wilson County School District	5.48

Source: OREA analysis of TDOE data, 2012-13 to 2017-18 school years.

Notes: (1) An asterisk * denotes a district with less than 500 students in the data sample; thus, the average age for these schools has been suppressed. (2) Yellow shading indicates an age above the unweighted state average of 5.47; blue shading indicates an age below the unweighted state average of 5.47.



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