THE UNIVERSITY OF UTAH
UTAH EDUCATION POLICY CENTER

UTAH FULL-DAY KINDERGARTEN

Literacy Growth, Future Opportunities, and Needed Investments

Nationally and in Utah,[1] families, educators, researchers, and policymakers are interested in better understanding the impact that full-day kindergarten has on students' short- and long-term academic achievement and opportunities. Research demonstrates that students in full-day kindergarten (FDK) experience greater academic gains during their kindergarten year than students in half-day kindergarten (HDK), although findings related to their achievement beyond kindergarten are mixed.[2]

In this report, we present findings from a research study that compared the reading achievement of a sample of Utah's FDK and HDK students who started kindergarten between 2015 and 2017. Our results highlight the impact of FDK on reading achievement during kindergarten, and suggest a need to provide continued, targeted support to sustain students' academic progress through third grade.

Nationally, **over 79%** of students enrolled in kindergarten attended FDK in 2020.[3]

In Utah, **only 20%** of kindergarteners attended FDK, while **76%** attended HDK in 2020.[4]

Utah requires schools to provide optional half-day kindergarten programming at a minimum of two hours per day. Some schools have chosen to allocate federal funds or funding through the state's Optional Enhanced Kindergarten program to provide access to full-day kindergarten, targeting students who are not meeting grade-level benchmarks in literacy and math. During the 2022 Utah State Legislative Session, HB 193 was passed, appropriating $12.2 million to increase full-day kindergarten programming in LEAs with the greatest need.[5] As interest grows in providing optional full-day kindergarten to Utah's students, there is an opportunity for research about the impact of full-day kindergarten compared to half-day kindergarten on Utah's students.

DEFINING KINDERGARTEN IN UTAH

FULL-DAY KINDERGARTEN (FDK)

Students stay with the same teacher in a continuous, all-day session that typically lasts between 6-7.5 hours.[1]

HALF-DAY KINDERGARTEN (HDK)

Students stay with the same teacher for a minimum of 2 hours per day but for less time than an all-day session.[1]

This study was conducted by the Utah Education Policy Center (UEPC) in collaboration with Utah Leading through Effective, Actionable, and Dynamic (ULEAD) Education and the Utah State Board of Education (USBE). Data for this study were accessible through a Data Sharing Agreement between the USBE and the UEPC.[4]

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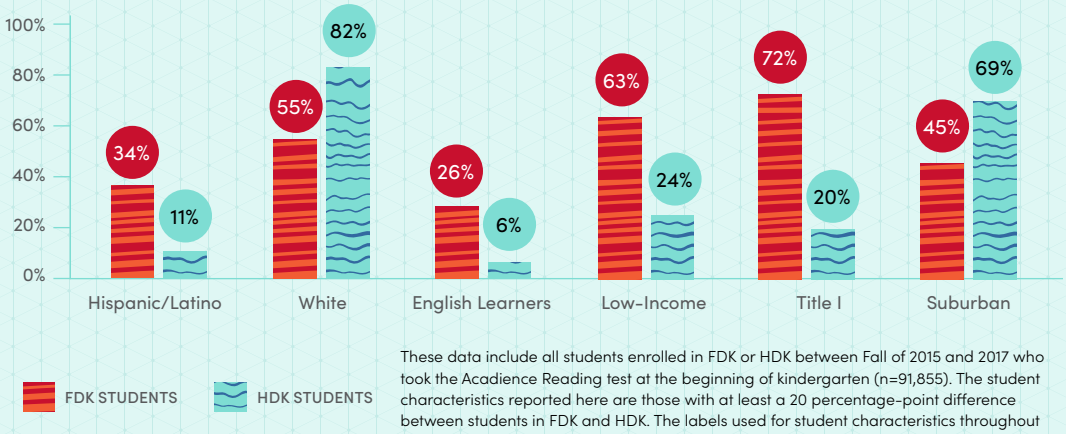
DIFFERENCES BETWEEN FDK AND HDK STUDENTS IN UTAH

FDK programs in Utah serve larger proportions of students who attend Title I schools and who are low income, Hispanic/Latino, and English Learners (ELs). HDK programs more commonly serve students who are White and in suburban areas. On average, students in FDK also enter kindergarten with lower reading proficiency.

At the beginning of kindergarten, **41%** of FDK students met or exceeded benchmark for Acadience Reading compared to **68%** of HDK students.



These data include all students enrolled in FDK or HDK between Fall of 2015 and 2017 who took the Acadience Reading test at the beginning of kindergarten (n=91,855). The student characteristics reported here are those with at least a 20 percentage-point difference between students in FDK and HDK. The labels used for student characteristics throughout this report (e.g., Hispanic, low-income) are consistent with USBE's terminology.

SAMPLE & METHOD

This study explored differences in reading performance between FDK and HDK students as measured by Acadience Reading, a universal screening and monitoring assessment of early literacy skills.[6] Propensity score matching was used to identify "matched" groups of half-day kindergarteners (n=8,487) and full-day kindergarteners (n=8,487). The matched sample (n=16,974) included those students who were demographically similar, had identical Acadience Composite Reading scores at the beginning of kindergarten, and who attended demographically and geographically similar schools. Students were also matched by the year they began kindergarten (e.g., Fall of 2015, 2016, or 2017). After matching, the differences between FDK and HDK groups were typically less than 1% on both demographic and school characteristics. As a result, any differences between the matched groups on reading performance, especially differences that occurred close to kindergarten when the groups were matched, are more likely due to kindergarten type rather than to the matched characteristics. All results that follow are based on analyses of the matched groups only and report Acadience Reading achievement as the percentage of students at or above benchmark, which corresponds to grade-level proficiency.[7]

1 FDK students outperformed HDK peers, resulting in a greater proportion of FDK students reaching benchmark during kindergarten.

Figure 1 compares the percentage of FDK and HDK students at or above benchmark in Acadience Reading throughout kindergarten. By the end of the year, FDK students outperformed HDK students by approximately 12 percentage points (Cohen's *h* = 0.25). Kraft (2020) classifies an education intervention effect of this magnitude as "large," greater than 90% of the effects found in other large-sample studies of education interventions.[8]

Figure 1. Percentage of FDK and HDK Students Performing at or above Benchmark during Kindergarten

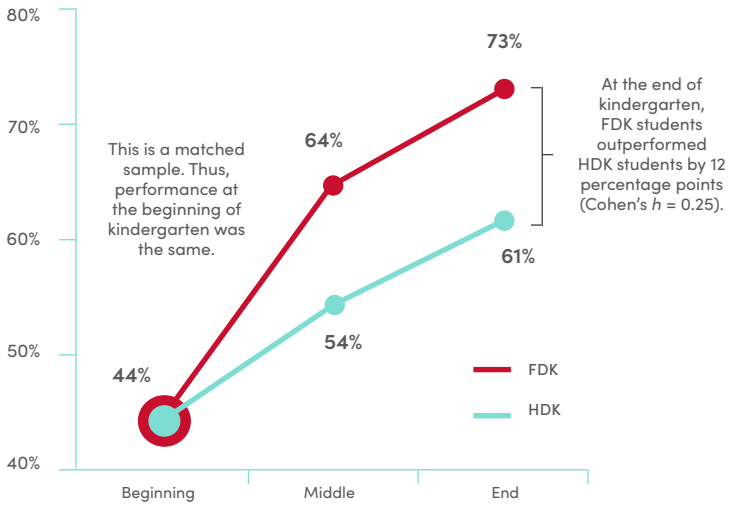
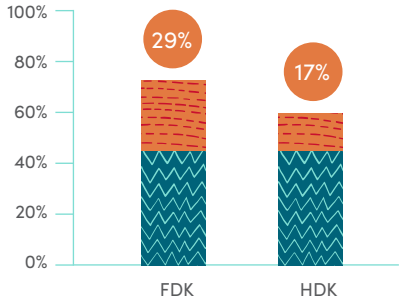


Figure 2. Additional Students Performing at or above Benchmark by the End of Kindergarten



ADDITIONAL PROPORTION OF STUDENTS WHO REACHED BENCHMARK AT THE END OF KINDERGARTEN

PROPORTION OF STUDENTS AT/ABOVE BENCHMARK AT THE BEGINNING OF KINDERGARTEN

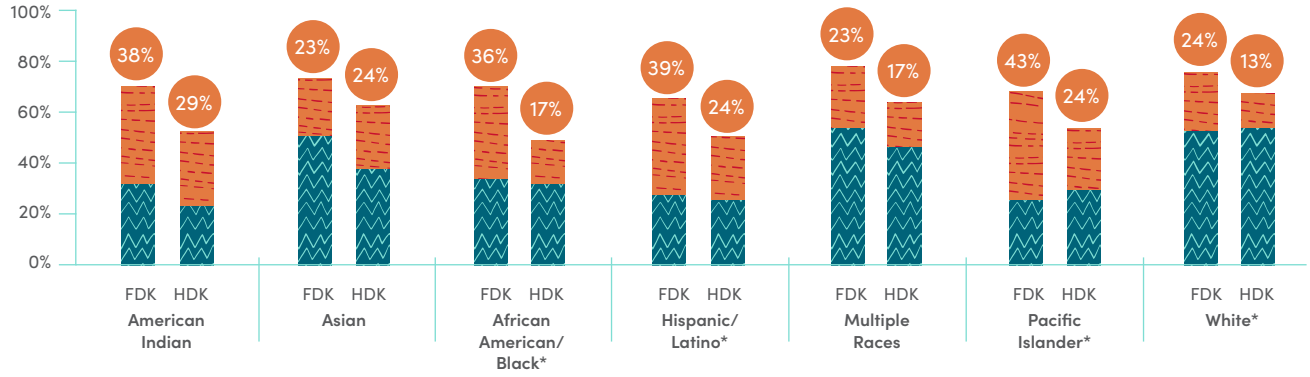
Figure 2 represents the proportion of students who met or exceeded benchmark in Acadience Reading at the beginning of kindergarten ( ) along with the additional proportion of students who met or exceeded benchmark by the end of the year ( ). Compared to the beginning of the year, an additional 29% of FDK students in the matched sample reached benchmark by the end of kindergarten. For HDK students in the matched sample, this increase was only 17%.

Note: These data include students from the matched sample only. This note and the legend below applies to all the figures on this page.

2 Students from diverse backgrounds reached benchmark in greater proportion when enrolled in FDK compared to HDK.

As Shown in **Figure 3**, Pacific Islander students in FDK experienced the largest increase in the proportion who reached benchmark in Acadience Reading by the end of kindergarten (43%). Among Hispanic/Latino students, an additional 39% of those in FDK performed at or above benchmark by the end of kindergarten, which is noteworthy given that Hispanic/Latino students make up over one-third of all FDK students. The additional proportion of FDK and HDK students reaching benchmark was similar among Asian students.

Figure 3. Additional Students Performing at or above Benchmark by the End of Kindergarten, by Race/Ethnicity



*For these groups, the additional proportion of students who reached benchmark at the end of kindergarten ( ) was significantly different ($p < .01$) between FDK and HDK students according to a Chi-squared test.

As shown in **Figure 4**, a greater proportion of FDK students who are English Learners (ELs), from low-income backgrounds, and who have disabilities scored at or above benchmark in Acadience Reading by the end of kindergarten than their matched HDK peers. Of these student populations, ELs in FDK demonstrated the most academic growth, with an additional 43% of EL students achieving benchmark by the end of kindergarten.

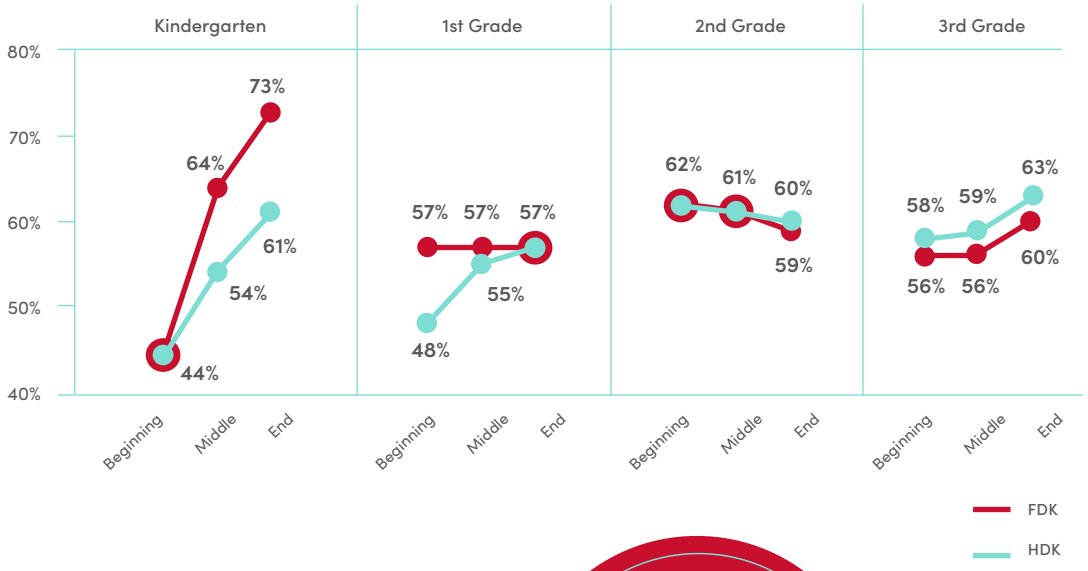
Figure 4. Additional Students Performing at or above Benchmark by the End of Kindergarten, by Student Population

*For these groups, the additional proportion of students who reached benchmark at the end of kindergarten ( ) was significantly different ($p < .01$) between FDK and HDK students according to a Chi-squared test.

3 FDK students outperformed their matched HDK peers during kindergarten. However, this pattern did not persist beyond the beginning of first grade.

Figure 5 illustrates students' performance from the beginning of kindergarten through the end of third grade as measured by the percentage of students at or above benchmark in Acadience Reading. The advantages of full-day kindergarten persisted through the beginning of first grade, but by the end of first grade and throughout second grade, FDK students scored similarly to HDK students. Although FDK students scored slightly lower than HDK students in third grade, this gap is small (less than the typical year-to-year variation in reading performance within a single school[9]) and may be due to unmeasured differences between the FDK and HDK populations (e.g., more specific differences in family income, access to childcare) rather than kindergarten type. More information is needed to understand *how* FDK supports students' reading achievement during kindergarten in order to sustain these benefits in later grades.

Figure 5. Percentage of FDK and HDK Students Performing at or above Benchmark from Kindergarten through 3rd Grade



FDK students may need more strategic support to maintain their kindergarten literacy growth.

CONSIDERATIONS

Continue targeted literacy interventions and instructional support in first through third grade. This analysis highlights that students in FDK outperform students in HDK in reading, though the advantage does not persist beyond the beginning of first grade. To sustain the benefits of FDK over time, additional instructional support (e.g., time) and targeted literacy interventions may be necessary.

Offer professional learning and collaborative opportunities for educators to enhance students' literacy outcomes. This study highlights the benefits of FDK for students' literacy, including students from diverse backgrounds. Creating opportunities for educators to learn about and share effective instructional practices and interventions with other kindergarten teachers statewide, as well as across vertical teams within schools, may support scaling-up the success of full-day kindergarten for all students and help sustain FDK students' learning gains.

Explore additional outcomes associated with FDK participation. Our findings suggest that FDK is associated with greater reading performance than HDK during the kindergarten year, including for diverse student groups. This study demonstrated a large effect size[8] associated with FDK at the end of kindergarten, indicating that FDK programming offers significant value as a successful intervention to support student learning and literacy foundations. More research is needed to clarify the long-term effects of FDK on reading, to expand our understanding of FDK into other domains such as math and social skills, and to identify what specific qualities of kindergarten are associated with benefits for students.

REFERENCES & NOTES

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   To support the interpretation and utility of Acadience Composite Reading scores, Acadience Learning provides "benchmark" cutoff scores that correspond to the development of adequate reading skills for each grade level and time of year. For a student scoring at or above benchmark, the likelihood of achieving subsequent early literacy benchmarks is at least 70%. Furthermore, while Acadience Composite scores cannot be compared over time, benchmark status can be compared across grades and times of year.
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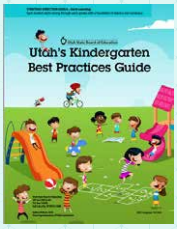
   For studies of education interventions on student achievement, Kraft (2020) recommends labeling effect sizes less than 0.05 as "small," between 0.05 and 0.2 as "medium", and greater than 0.2 as "large." Among 124 randomized control trial studies with sample sizes in the largest category (>2,000), Kraft found that 90% had effect sizes smaller than 0.17.
9. Typical year-to-year variation in Acadience Reading performance within a single school was estimated by taking all groups of students that had at least 50 Acadience Reading scores for a particular combination of year, school, grade, and time (beginning, middle, or end of year) and comparing the percent of students meeting benchmark to the percent meeting benchmark in the next year. The typical amount of that variation was estimated by taking the absolute value of each difference and then computing the median, which was 6.5%.

FUTURE STUDIES

This report represents the first phase of a three-part study series dedicated to researching kindergarten quality and outcomes in Utah. This research is part of the UEPC's Utah Academic Readiness for Children through Holistic Education and Services (ARCHES) studies. In this first report, we explored the initial academic outcomes associated with kindergarten participation, particularly for K-3 reading outcomes. The next phase will explore the implementation of Utah's kindergarten programming and the relationship between kindergarten characteristics and practices, and student experiences and outcomes. The Utah State Board of Education's *Kindergarten Best Practices Guide* will inform this study. The final study will analyze additional short-term and long-term outcomes associated with kindergarten participation, including those beyond third grade.



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