

Waterford Institute

UPSTART

DOES UPSTART IMPROVE SCHOOL READINESS?

Project Overview

THE PROBLEM: What Challenge Did the Program Try to Address?

School preparedness—especially acquiring cognitive skills such as basic literacy knowledge—is one of the most important elements of early childhood education. Yet many recent efforts have met with discouraging results. Because school preparedness has proven to be such a difficult problem to address, it is reasonable to expect future solutions to be more innovative or even revolutionary in approach while still providing rigorous theoretical and empirical justification for their usefulness. To improve school preparedness of basic literacy knowledge, Utah government partnered with Waterford Research Institute to enhance Waterford’s home-based technology solution for Utah schools: Utah Preparing Students Today for a Rewarding Tomorrow (UPSTART).¹

THE PROJECT: What Strategies Did the Program Employ?

Waterford Research Institute received an i3 validation grant² (2013-2018) to extend support to the UPSTART program, including training Waterford staff and district liaisons, as well as to evaluate the program, done by the Evaluation and Training institute. The evaluation was done by creating experimental and control groups (neither assigned randomly), who took a common assessment at two points in time: before enrolling in the program, and at the beginning of kindergarten. A comparison group made up of students from low-income preschools, Head Start and parent groups was used to answer the question of whether UPSTART improves school readiness for children and whether that effect is continued with repeated summer program exposure. Of the sample of 5,091 children enrolled in the sixth-year cohort who participated from September 2014 to June 2015, 138 were used for the matched sample. Researchers used two assessments, the Brigance and the Bader, to assess if students in the program had increased literacy skills and school readiness.

¹ Waterford Institute received an i3 validation grant supported by the U.S. Department of Education’s Investing in Innovation program through Grant Number U411B130020.

² Validation grants provide funding to support the expansion of projects that address persistent education challenges to the regional or national level. All i3 grantees are required to conduct rigorous evaluations of their projects. The quality of evidence required to demonstrate a project’s effectiveness depends on a project’s level of scale or grant type.

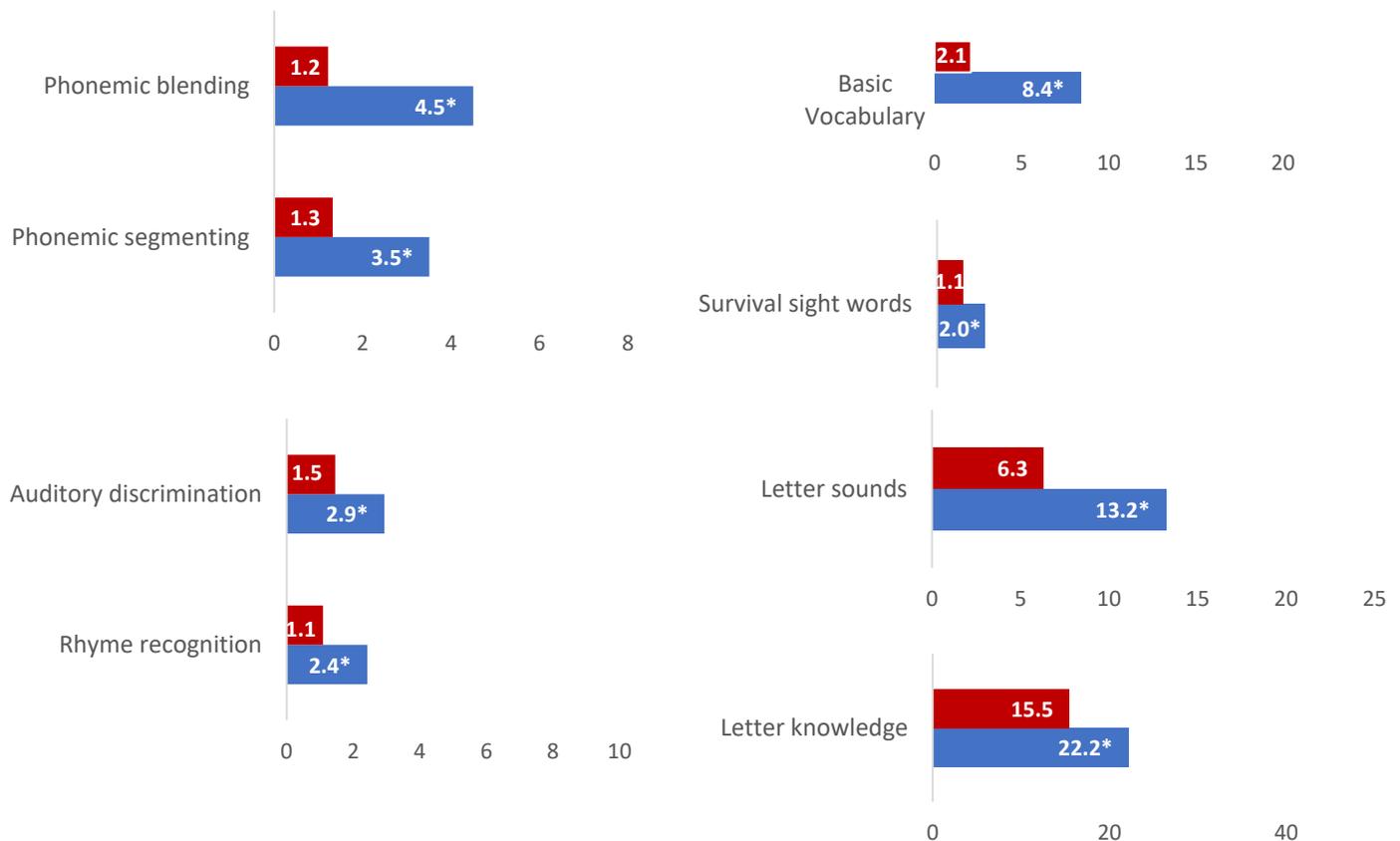
THE UPSTART MODEL

- **Preparing students before kindergarten.** To prepare students before they start kindergarten, UPSTART prepares pre-school aged children with the skills needed for kindergarten, so they are at the same level as students nationwide.
- **Home-based technology with individualized instruction.** Students complete their lessons at home using the Waterford website. Students receive individualized instruction in reading, math, and science with a focus on reading instruction with a research-based early learning curriculum. The program uses adaptive lessons, digital books, songs, and activities.
- **Providing UPSTART equipment.** Students who did not have a computer were provided a free personal computer and, in some cases, free Internet subscriptions as well.
- **Partnering with parents.** Parents or caregivers must commit that their children will use the program 15 minutes a day for five days per week.

Summary of Results

DOES UPSTART INCREASE SCHOOL READINESS?

Student Achievement on Brigance Inventory of Early Development and Bader Reading and Language Inventory Subscales*



*Subscales had different numbers of items – full range shown for each

UPSTART had a positive impact on students who used the program compared to students in the comparison group on literacy skills, including decoding skills, letter knowledge, vocabulary and syntax, and pre-literacy discrimination. These differences were statistically significant.

- **DECODING.** Students who participated in UPSTART had higher growth in all subtests, basic vocabulary, and survival sight words, than those in the comparison group, a statistically significant difference. Both of these subtests also had large effect: pre-primer vocab had a 1.1 effect size and survival words, a 0.45 effect size. Education researchers generally interpret effect sizes as follows: 0.2 = small, 0.5 = medium, and 0.8 = large. If the impact does not have an effect size of 0.2 or greater, it is not meaningful, even if it is statistically significant.³
- **PHONOLOGICAL AWARENESS.** Students who participated in UPSTART had significantly higher growth in all three subtests – rhyme recognition, phonemic blending, and phonemic segmenting – than those in the control group. All three of these also had large effect sizes.
- **LETTER KNOWLEDGE.** Students who participated in UPSTART had significantly higher growth in two subtests, letter knowledge and letter sounds, than those in the control group. Both of these had large effect sizes. However, growth rates between the two groups when reciting the alphabet was not statistically significant.
- **PRE-LITERACY DISCRIMINATION & LANGUAGE CONCEPTS.** Students who participated in UPSTART had significantly higher growth rates in auditory discrimination than those who did not participate. However, differences in growth rates between the two groups in visual discrimination was not statistically significant.
- **VOCABULARY AND SYNTAX.** No vocabulary and syntax subtests growth rates were statistically significant between the two groups, including expressive vocabulary, receptive vocabulary, or expressive grammar.

SECONDARY FINDINGS

- **“GRADUATION RATES,”** or meeting the program’s usage criteria, increased over time, from 59% in year 1 to 92% in year 6.
- **INSTRUCTION HOURS.** There was a positive correlation between the number of hours of instruction and the Bader and Brigance scores.

³ Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155-159.

OTHER CONSIDERATIONS

The authors provided some ideas of how future evaluators can better study the impact of UPSTART, such as by finding more students for a comparison group so more UPSTART students can be included.

- **DIFFICULT TO FIND STUDENTS FOR THE MATCHED SAMPLE.** Researchers reached out to parent groups, Head Start families, and through other schools not using UPSTART to create a matched sample but found that many programs did not pass along information about the opportunity to the parents.
- **STUDENTS DATA NOT USED BECAUSE OF THE MATCHED SAMPLE.** Because the researchers used a one-to-one matched sample, only students who had similar characteristics (including sex, ethnicity, language, parent education, and others) to a student who did not participate in UPSTART were included in the analysis sample.
- **UNCLEAR IF STUDENTS WHO WERE NOT INCLUDED AFFECTED THE FINDINGS.** Since some UPSTART students were not included in the analysis, it is unclear if these students would have impacted the findings in any way.

The evaluators also noted several ways to strengthen the implementation and evaluation of UPSTART in the future:

- **MONITOR ENROLLMENT AND IMPLEMENTATION.** Evaluators noted that increased enrollment may be one reason behind a decrease in graduation rates and program usage. While overall graduation rates increased since the program's inception, the sixth cohort had a small drop in graduation rates from the previous year (92% in the sixth cohort compared to 94% in the fifth). The program usage number also dropped, from an average of 71 hours to 67 hours. Evaluators suggested monitoring program implementation to be sure the increased enrollment doesn't lead to a decline in program usage and, thus, graduation.
- **COLLABORATION.** Evaluators suggested the state strengthen relationships with other preschool providers so evaluators can widen the number of programs with students that can be used for the control group, such as Head Start, WIC, and public preschools, especially as UPSTART is growing as a program and finding children who do not participate is more difficult.

For More Information

Evaluation Reports

[UPSTART Program Evaluation: Year 6 Program Results](#) (ETI, January 2016)⁴

[Utah UPSTART Program Evaluation Program Impacts on Early Literacy: Year 5 Results](#) (ETI, March 2015)

[UPSTART Program Evaluation: Year 7 Program Results](#) (ETI, April 2017)

[Rural UPSTART Preschool Study: Preliminary Evaluation Results for Investing in Innovation \(i3\)](#)

[Grant U411B130020](#) (ETI, June 2016)

Additional Reports

[UPSTART Program: Report of FY 2014](#) (Utah State Office of Education, 2014)

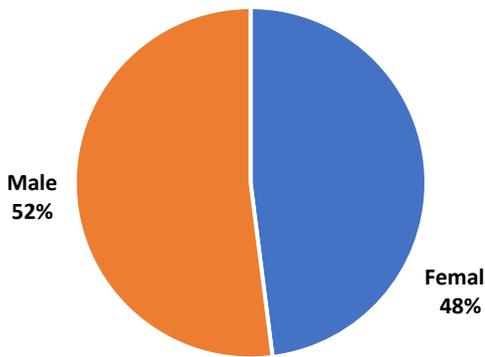
[Utah Preparing Students Today for a Rewarding Tomorrow \(UPSTART\) Report](#) (Utah Board of Education, October 2018)

⁴ The information and data for this result summary was collected from the most recent report as of 01/22/2020: Evaluation and Training Institute (2016, January). UPSTART Program Evaluation. Year 6 Program Results. Retrieved from <https://s3.amazonaws.com/www.waterford.org/uploads/wp-content/uploads/2015/12/14175207/ETI-UPSTART-Cohort-6-Evaluation-Report-1.pdf>

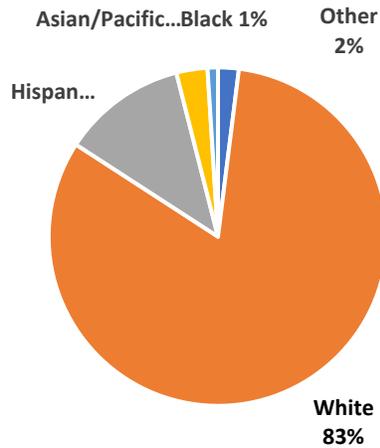
Appendix A: Students Served by the Project⁵

GRADE(S)													
PK	K	1	2	3	4	5	6	7	8	9	10	11	12

GENDER



RACE/ETHNICITY



COMMUNITY

Not Reported

HIGH-NEED STUDENTSⁱ

Free/Reduced-Price Lunch	English Learner	Students with Disabilities
Not Reported	8%	Not Reported

⁵These data reflect the entire student population served by the intervention, not just the evaluation sample used in the impact study.

Appendix B: Impact Evaluation Methodology⁶

RESEARCH DESIGN:

Design:	Quasi-Experimental Design (QED)
Approach:	<ul style="list-style-type: none">5,091 students participated in UPSTART for the sixth cohort. Of those, 138 were matched with 138 students in the control sample with similar demographics.
Study Length:	Two years

DATA COLLECTION AND ANALYSIS

Study Setting:	One hundred and thirty-eight students of 5,091 students who participated in UPSTART for the sixth year were matched with a comparison group. All students participated in UPSTART at their homes.
Final Sample Sizes:	<ul style="list-style-type: none"><i>Intervention Group</i>: 138 students<i>Comparison Group</i>: 138 students
Intervention Group Characteristics:	<ul style="list-style-type: none">White: 98%Hispanic: 1%Male: 51%Female: 49%English language: 100%Parent Education Level, High school Diploma: 12%Some college: 75%Bachelor's Degree: 9%Graduate Degree: 3%Parental Marital Status, Married: 95%Household income, Under \$10,000: 2%\$10,000-\$24,999: 5%\$25,000-\$49,999: 29%\$50,000-\$74,999: 35%\$75,000-\$99,999: 24%\$100,000 or more: 5%

⁶ These data reflect only the evaluation sample in the impact study, not the entire population served.

Comparison Group Characteristics:

- White: 98%
- Hispanic: 1%
- Male: 51%
- Female: 49%
- English language: 100%
- Parent Education Level: High school Diploma: 10%
- Some college: 75%
- Bachelor's Degree: 9%
- Graduate Degree: 5%
- Parental Marital Status: Married: 89%
- Household income: Under \$10,000: 2%
- \$10,000-24,999: 10%
- \$25,000-49,999: 29%
- \$50,000-74,999: 34%
- \$75,000-99,999: 17%
- \$100,000 or more: 8%

Data Sources:

- Intake questionnaire for parents: demographic information
- Brigance and Bader scores

Key Measures:

- Phonological awareness
- Phonics
- Comprehension and vocabulary
- Language concepts

Appendix C: Quality of the Evidence

WHAT WORKS CLEARINGHOUSE REVIEW⁷

STUDY	RATING
Current evaluation not reviewed as of 01/22/2020	N/A

EVIDENCE FOR ESSA REVIEW⁸

STUDY	RATING
Not reviewed as of 01/22/2020	N/A

NATIONAL CENTER ON INTENSIVE INTERVENTIONS REVIEW⁹

STUDY	RATING
Not reviewed as of 01/22/2020	N/A

⁷ <https://ies.ed.gov/ncee/wwc/FWW>

⁸ <https://www.evidenceforessa.org/>

⁹ <https://intensiveintervention.org/>

The [*Investing in Innovation Fund \(i3\)*](#), established under section 14007 of the American Recovery and Reinvestment Act of 2009, is a Federal discretionary grant program at the U.S. Department of Education within the Office of Elementary and Secondary Education (OESE). i3 grants help schools and local education agencies work in partnership with the private sector and the philanthropic community to develop and expand innovative practices that improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, and/or increase college enrollment and completion rates for high-need students.

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ⁱ “High-need student” refers to a student at risk of academic failure or otherwise in need of special assistance and support, such as students who are living in poverty, attend high-minority schools, are far below grade level, who have left school before receiving a regular high school diploma, at risk of not graduating with a diploma on time, who are homeless, in foster care, have been incarcerated, have disabilities, or who are English learners. For more information see: [*Applications for New Awards; Investing in Innovation Fund-Development Grants, 81 FR 24070 \(April 25, 2016\)*](#).