UPSTART Program

Report of FY 2014

Prepared by the

Utah State Office of Education

September 17, 2014

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Minimum School Program Performance Measurement

In Compliance with Intent Language of SB2 of the 2011 Legislative General Session

Minimum School Program Title:	UPSTART (Utah Preparing Students Today for a Rewarding Tomorrow)
USOE Section Reporting:	Teaching and Learning
FY14 Allocation:	$1,631,607 and $132,200/year for evaluation- ETI (Evaluation Technology Institute)
Authorization:	53A-1a-1002, 1003, 1004

Program Description

UPSTART is a pilot project established by the Utah State Legislature that uses a home-based education technology approach to develop the school readiness skills of at-risk preschool children. The project's implementation contractor – the Waterford Institute – enrolled 1,250 preschool children and provided them a game formatted program of early literacy instruction delivered by personal computers and the Internet, designed to academically prepare preschoolers for kindergarten.

UPSTART and the Waterford Institute

- The nonprofit Waterford Research Institute, founded in 1976 with a mission to use technology to help provide educational equity and excellence for all children, was selected to administer the UPSTART Program in March of 2009.
- The UPSTART program recognizes parents and caregivers as key educational resources. Parents and caregivers can provide the motivation for children to ensure that they spend the necessary time on program materials.

Evaluation Metrics and Measuring Effectiveness

UPSTART Cohort 4 (C4): Executive Summary of Demographics

- A majority (63%) of the 1,250 preschool children that enrolled in the fourth year of UPSTART were from low-income families, according to data provided by the Waterford Institute. This was an increase of 26% from 2013.
- Most commonly, the parents of the preschoolers in the control group had some college (31%) or had achieved a bachelor's degree (38%). The vast majority of the control group's parents were married (approximately 90%).
- Of the 220 children used in the analyses, there were 117 treatment group children and 103 control group children.
- Slightly more girls (51%) were enrolled than boys (49%).

- In terms of ethnicity, the vast majority of the Cohort 4 (C4) enrollment was Caucasian (76%) with 20% being Hispanic. The ethnicity of the remaining 4% of the C4 enrollment was of Asian, African, Native American, Pacific Islander, or unknown origin.

Outcome Measures

The reading skills taught by the Waterford Early Learning Program at Level 1 of the curriculum[1] include:

- Phonological Awareness: phonemic segmenting and blending.
- Phonics: letter name knowledge, sound knowledge, and word reading.
- Comprehension and Vocabulary: vocabulary knowledge.
- Language Concepts: oral reading fluency.

Two assessments were administered to evaluate the effectiveness of the program on achieving positive student outcomes: the Brigance Inventory of Educational Development and the Bader.

- Brigance Inventory of Educational Development was selected as an early literacy measure of phonics and vocabulary knowledge and as a measure of pre-kindergarten academic, language and cognitive skills.
- The Bader was selected as a measure of phonological awareness.

Data Collection

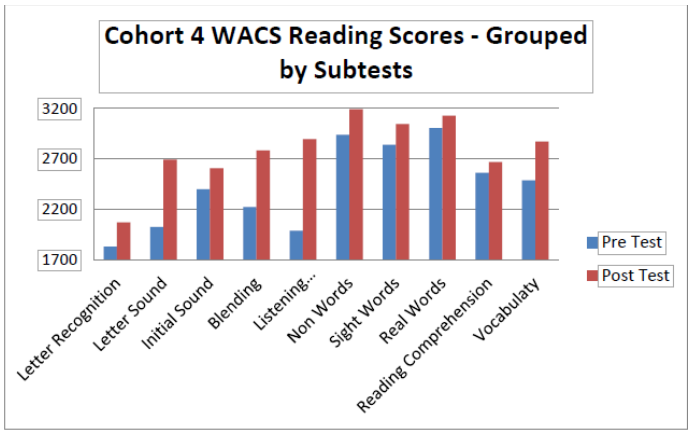
Two hundred and fifty, four year-old children were recruited for the C4 study.

- Two groups of students were recruited: treatment (who had enrolled in UPSTART during Year 4 of the program), and control (who had not enrolled in the UPSTART program).
    - Treatment students were randomly selected from a list of UPSTART participants, and phone recruitment was used to setup testing appointments.
    - Control families were recruited using a variety of methods, including: distributing flyers at low-income day care facilities, including public pre-kindergarten locations, referral sampling and advertisements.

WACS Assessment Data

Waterford uses the Waterford Assessments of Core Skills™ (WACS) to assess children in the UPSTART Program. WACS is a computerized, adaptive test of early literacy for students in pre-kindergarten through second grade. Initial content validity for WACS was established against state and national standards.

[1] Level One is the beginning point of the curriculum where the preschool child begins as a nonreader and is introduced to skills designed to teach the child to read.



Analysis Strategy: Do UPSTART children have better literacy skills as entering kindergarteners than control group children?

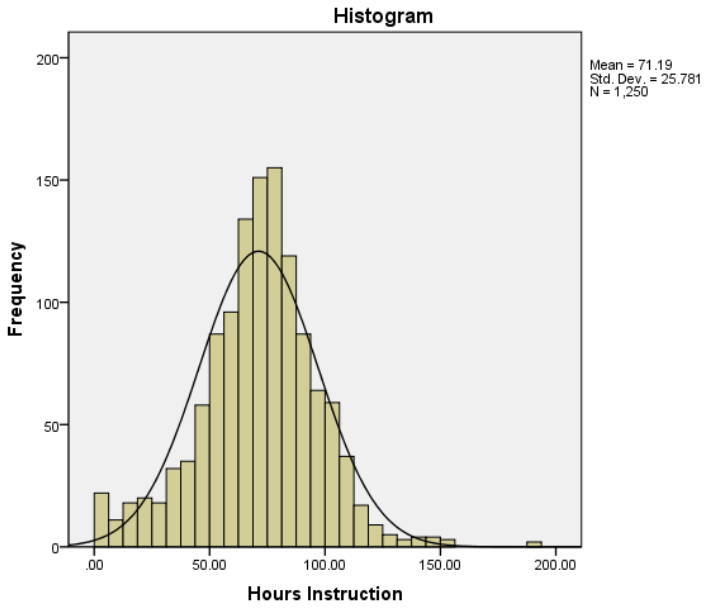
The general strategy for determining whether there was an impact of the UPSTART preschool experience on young children's literacy skills was to compare a sample of program participants with a similar group of nonparticipants on Brigance and Bader posttest scores collected at the beginning of kindergarten. This strategy assumes that the two groups are initially similar on factors that influence the literacy skills measured at kindergarten. These factors could include initial differences between the groups on measured literacy skills (e.g., pretest scores) as well as demographic factors that differentiate the treatment and control groups (e.g., the mother's marital status) if they are significantly related to posttest performance.

Analysis Strategy: Do UPSTART children show stronger literacy growth rates from preschool to Kindergarten than control group children?

To determine whether UPSTART students show stronger literacy growth rates from preschool to kindergarten compared to control students, paired sample t-tests were run to compare pretest and posttest gain scores for the matched Brigance and Bader treatment groups on the total test and each of the subtests. The same analysis was performed with the Brigance and Bader matched control groups.

Analysis of Implementation Time

An analysis of covariance (ANCOVA) was used to determine the relationship between the amount of instruction received by UPSTART participants and literacy outcomes. An ordinal version (ordered categories) of UPSTART usage (transformed to hours of instruction) was used to see what the impact of instructional time in the program was on literacy outcomes as measured by total scores on the Brigance and Bader posttests.



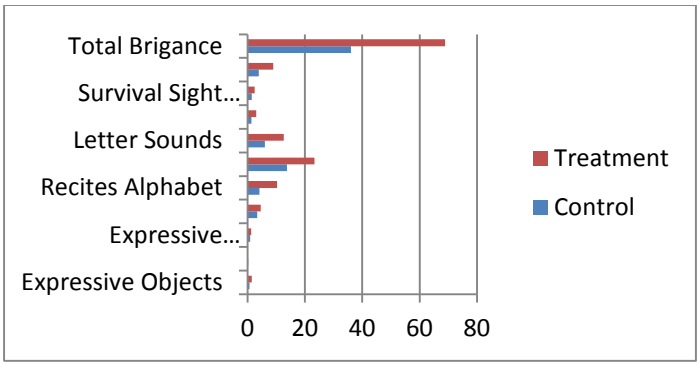
Hours of Instruction for All Students Enrolled in UPSTART in Year 4: The bottom quartile of the C4 population completed 57.04 hours of instruction or less. The midpoint of the C4 population distribution (the median) was 72.55 hours of instruction. The top quartile of the C4 population completed in excess of 86.06 hours of instruction.

Results

Do UPSTART students have better literacy skills at kindergarten than control students? Do UPSTART children show stronger literacy growth rates from preschool to kindergarten than control group children?

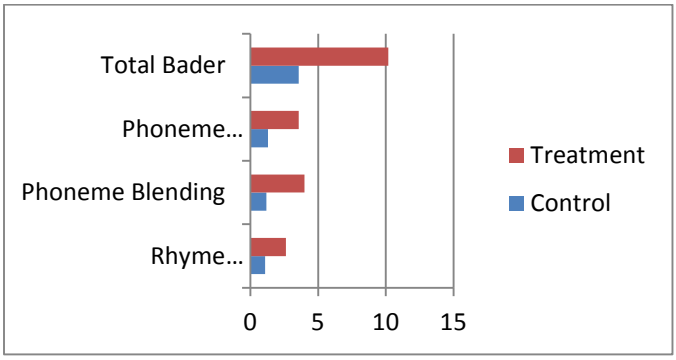
Brigance Results

- The control group children scored significantly higher on the overall Brigance at pretest compared to the UPSTART treatment group children. The average Brigance pretest difference was over 16 points.
- Posttest results showed that the UPSTART treatment group performed significantly better than the control children on three of the Brigance subtests*:* Visual Discrimination, Letter Sounds, and Vocabulary. On the Total Brigance, the treatment group children outscored the control group children by an average of 16.44 points.



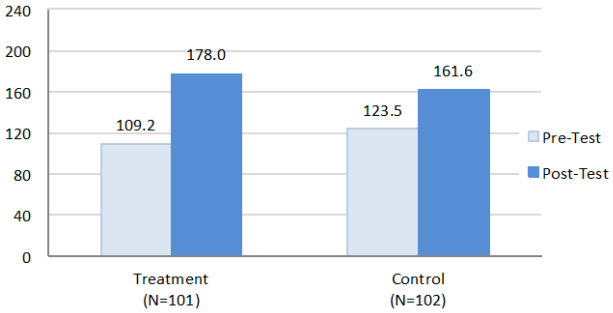
Bader Results

- Similar to the Brigance results, the control group children also scored significantly higher on the Bader pretests compared to the treatment group children entering UPSTART. As with the Brigance, this probably reflects greater levels of participation in daycare and preschool among the control children.
- Bader posttest results showed a statistically significant treatment group effect for Phoneme Blending and Phoneme Segmentation as well as for the Total Bader.



Brigance Subtest Mean Graphs: Pre- and Posttest Scores

Brigance Composite



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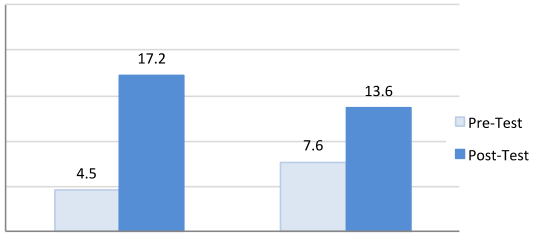
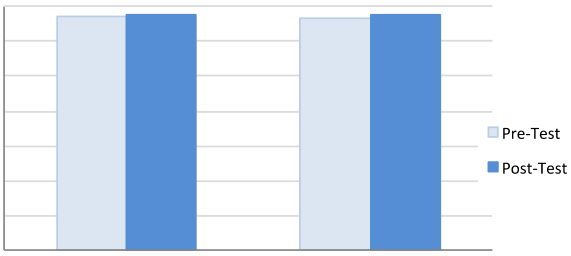


Receptive Objects



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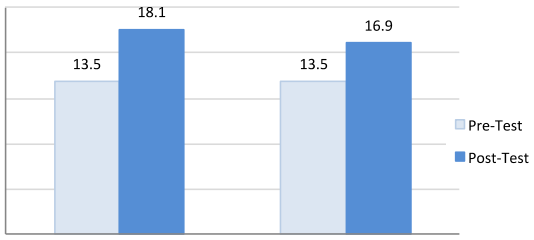
Visual Discrimination



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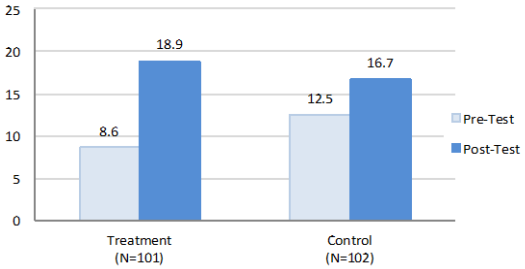
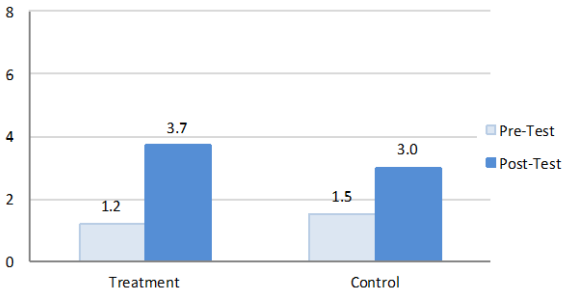
Recites Alphabet



Survival Sight Words



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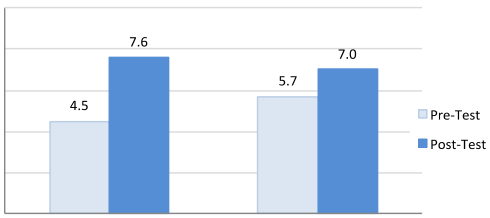
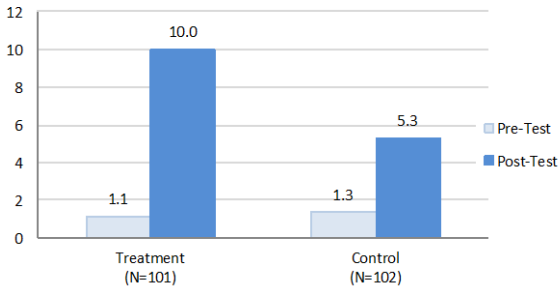
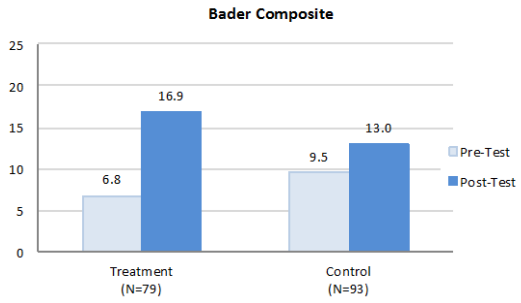
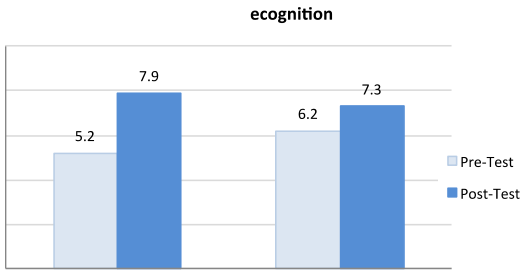


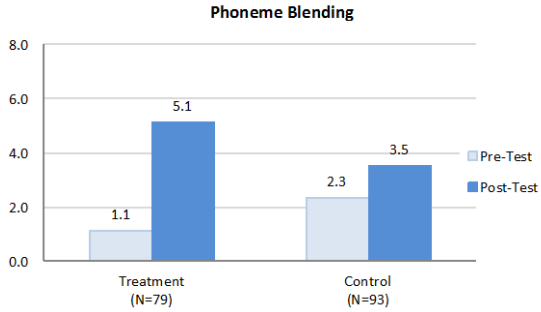
Basic Pre-Primer Vocabulary

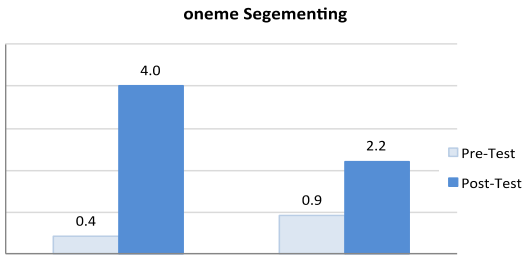


Bader Subtest Mean Graphs: Pre- and Posttest Scores









Parent Surveys

UPSTART parents continue to show very high satisfaction ratings with the program. In a year-end survey completed by 898 parents, 99.9% of respondents felt the program was beneficial to their child and 99.4% said they would recommend it to family and friends. Parents reported that their User Support Representative was friendly (99.7%) and knowledgeable (99.6%); and on the software, 97.9% of parents reported that their children liked the software and 91.6% said the difficulty level was "just right" for their child.

Next Steps

Student Learning: Collaboration between the Utah Legislature, USOE, ETI and UPSTART

We would like to thank the Legislature for their commitment and financial support of pre-K student learning that provides the external evaluation of UPSTART through the Evaluation and Training Institute (ETI) and USOE's K-3 Literacy Specialist, Sheri Ebert. Together, USOE and ETI use an evidence-based, data-driven approach to ensure that legislative funds are positively impacting student learning. Specifically:

- The external evaluation provided by ETI was used in the creation of the executive summary.
- The 2014 Utah Legislature for extending the UPSTART pilot for an additional five years and for increasing program funding by $3 million a year.
    - With the additional funding, the participation goal for 2015 is 4,935 participants. The per-participant cost drops to $886 for a 36% decrease from the previous cost per-participant cost of ($1,373) with first priority to serve low-income children and children from Spanish-speaking homes.