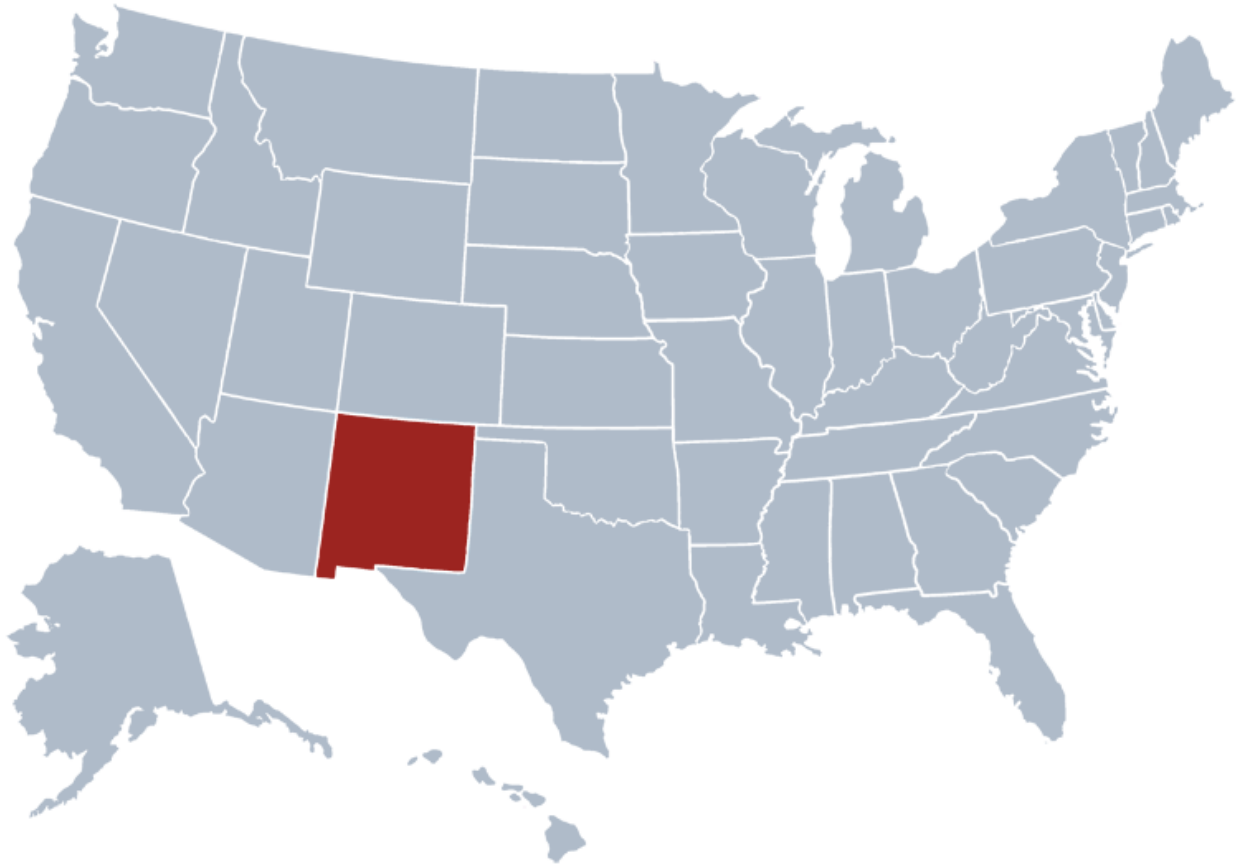


New Mexico Waterford UPSTART Pilot Program

FINAL REPORT

August 2019



Waterford

UPSTART

ABOUT WATERFORD UPSTART: Waterford UPSTART is an in-home kindergarten readiness program that was created by the Utah State Legislature in 2009. The program is implemented by Waterford.org and helps children develop the foundational academic and cognitive skills they need for school success.

- Preschool-age children use **Waterford UPSTART in the home for 15-20 minutes a day**, five days a week.
- Children receive a **personalized curriculum in reading, math and science** (including over 450 instructional hours) with an emphasis on reading.
- **Parent empowerment.** Waterford UPSTART forms a partnership with parents and caregivers to ensure all children obtain the education necessary for success in school.
- **Social-emotional learning** is modeled in the software learning sequence and developed by parents through off-line activities.
- **Computers and Internet service are provided** if the home does not have them.
- **Waterford UPSTART is aligned to the New Mexico Early Learning Guidelines: Birth through Kindergarten;** Head Start Early Learning Outcomes Framework; NAEYC Early Childhood Program Standards; CASEL Social and Emotional Learning Competencies; and endorsed by the Council of Administrators of Special Education.



The New Mexico Waterford UPSTART pilot program was comprised of two software programs:

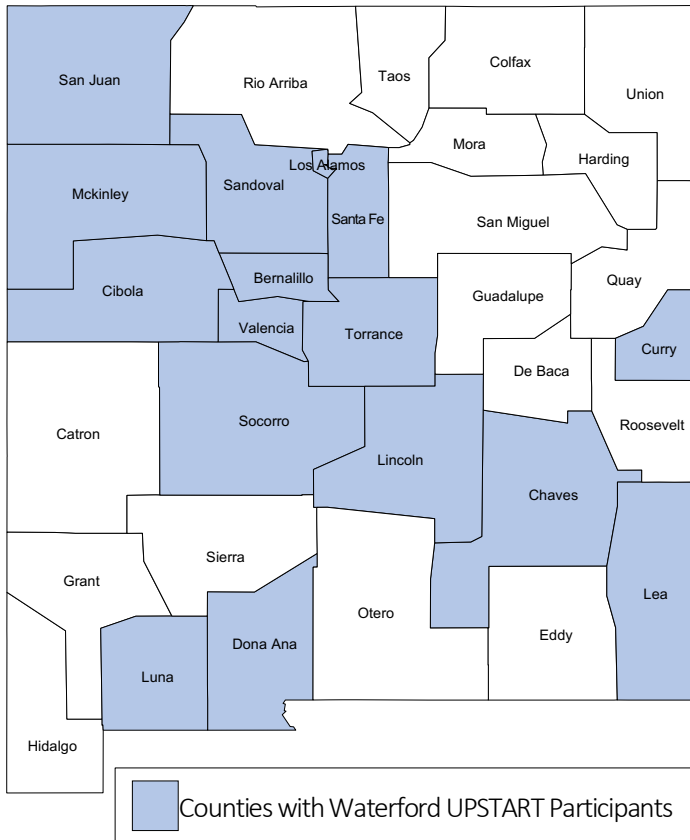
- **Waterford Early Learning** delivers individualized instruction in reading, math, and science that adapts to each child’s learning trajectory. The program includes: 360 digital books; 330 animated songs; thousands of activities and lessons; and hundreds of instructional hours that meet national, state, and professional standards and guidelines.



- The **Waterford Assessments of Core Skills (WACS)** is a fundamental testing breakthrough for assessing very young children who do not know how to read. It is computer adaptive and offers scoring and reports easily understood by parents.

NEW MEXICO WATERFORD UPSTART PILOT PROGRAM: Approximately **244 preschool-age children** participated in the New Mexico UPSTART pilot.

- Families began in-person trainings and initial student assessments in **December 2018** and the pilot was completed with in-person final student assessments and local graduation events for families in late **August 2019**.
- While a majority of families were from the Albuquerque area, the scope of the pilot included children from **21 school districts** in **16 different counties** across the state.



School District	County
Albuquerque Public Schools	Bernalillo County
Aztec Municipal School District	San Juan County
Bernalillo Public School District	Sandoval County
Clovis Municipal School District	Curry County
Deming Public Schools	Luna County
Estancia Municipal School District	Torrance County
Farmington Municipal Schools	San Juan County
Gadsden Independent School District	Dona Ana County
Gallup McKinley County Schools	McKinley County
Grants-Cibola County Schools	Cibola County
Hobbs Municipal Schools	Lea County
Hondo Valley Public Schools	Lincoln County
Las Cruces Public Schools	Dona Ana County
Los Alamos Public Schools	Los Alamos County
Los Lunas Schools	Valencia County
Moriarty-Edgewood School District	Torrance County
Rio Rancho Public Schools	Sandoval County
Roswell Independent School District	Chaves County
Santa Fe Public Schools	Santa Fe County
Socorro Consolidated Schools	Socorro County
Zuni Public School District	McKinley County
21 School Districts	16 Counties

WATERFORD ASSESSMENTS OF CORE SKILLS (WACS): The Waterford Assessments of Core Skills (WACS)¹ 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 for 11 subsets:

- letter recognition
- letter sound
- initial sound recognition
- blending
- segmenting
- reading real words
- reading nonsense words
- sight words
- reading comprehension
- listening comprehension
- vocabulary

¹ A research article that provides additional information on WACS entitled, “Assessing Reading in Young Learners: Using a Computerized Adaptive Reading Test for Pre-Kindergarten through Second Grade,” can be viewed at <https://owncloud.waterford.org/index.php/s/oamXrQDVDTJavLX>.

All items were calibrated for item response theory to determine item difficulty. To establish concurrent validity and predictive validity, student performance on WACS was compared to performance on five commonly-used standardized tests also measuring reading skills: **Dynamic Indicators of Basic Early Literacy Skills (DIBELS)**, **Texas Primary Reading Indicator (TPRI)**, **Idaho Reading Indicator (IRI)**, **Iowa Tests of Basis Skills (ITBS)**, and **Stanford Achievement Test Series (SAT 100)**. All correlations between tests are highly significant. Additional analyses indicate that WACS is internally coherent and has strong test-retest reliability.

WACS is an adaptive test. Pre-kindergarten students such as those in the Waterford UPSTART program only see the basic skills unless they perform well, in which case they also see advanced skills. When students take WACS for the first time, most of them receive basic skills only. As students use *Waterford Early Learning* and advance their reading abilities, they perform better at the end of the program when taking WACS, and are able to successfully complete basic skills as well as advanced skills. Therefore, the number of students receiving advanced skills increases from the beginning of the program to the end of the program. Additionally, as more students complete reading comprehension successfully at the end of the program, fewer students complete listening comprehension at that time.

The following table shows the question difficulty ranges for WACS by grade. Note each grade is divided into thirds, for example, kindergarten beginning, kindergarten intermediate, and kindergarten advanced.

Grade	Beginning	Intermediate	Advanced
Preschool	1001 - 1333	1334 - 1666	1667 - 2000
K	2001 - 2333	2334 - 2666	2667 - 3000
1	3001 - 3333	3334 - 3666	3667 - 4000
2	4001 - 4333	4334 - 4666	4667 - 5000
3	5001 - 5333	5334 - 5666	5667 - 6000
4	6001 - 6333	6334 - 6666	6667 - 7000

Final WACS scores revealed the following notable outcomes for the New Mexico pilot program:

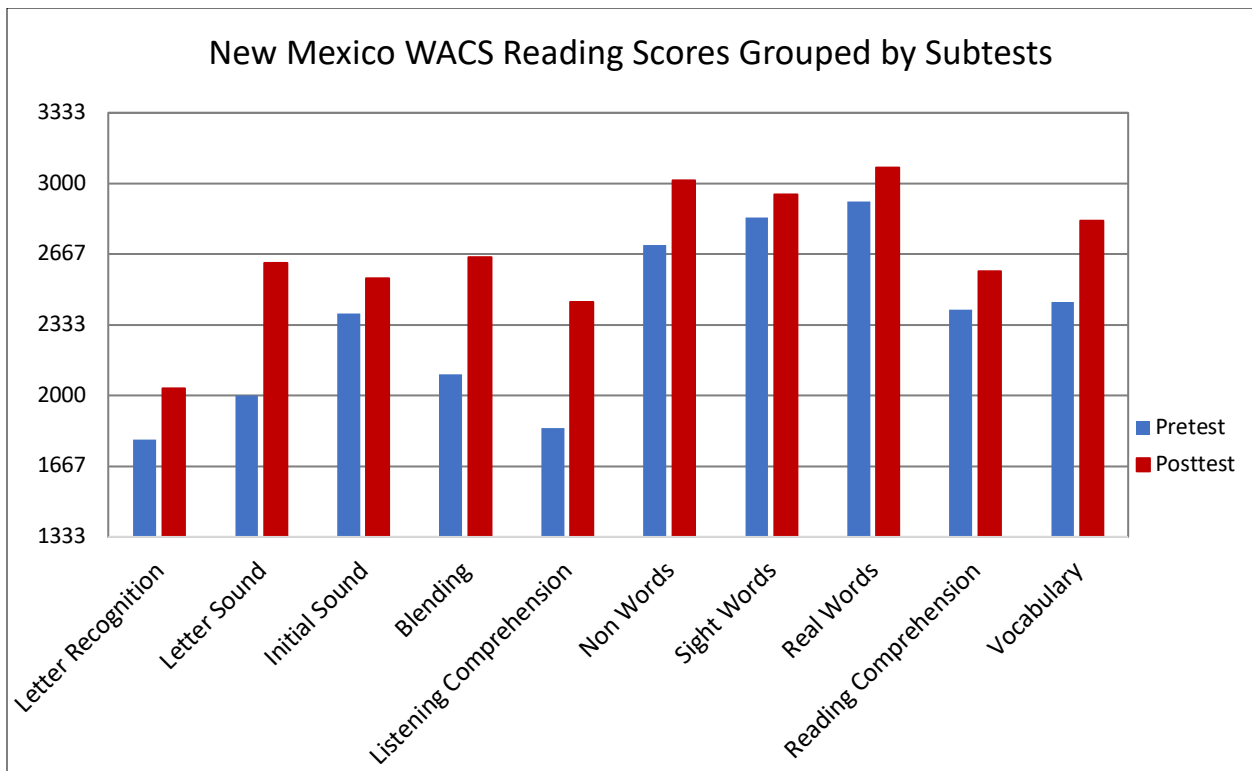
- **Children’s outcomes averaged at the “Kindergarten Intermediate” level**, where most children score mid-point during the kindergarten year.
- **93.63% of children scored at “Kindergarten Beginning” or above**, demonstrating strong school readiness outcomes.
- **Hispanic children demonstrated higher point gains than Caucasian children.**
- **Children from low-income families demonstrated higher point gains than their more affluent peers.**
- **Children that participated in Waterford UPSTART and had no other preschool outperformed children who attended preschool** and also participated in UPSTART.

The following table shows mean final WACS subtest scores and their grade equivalents:

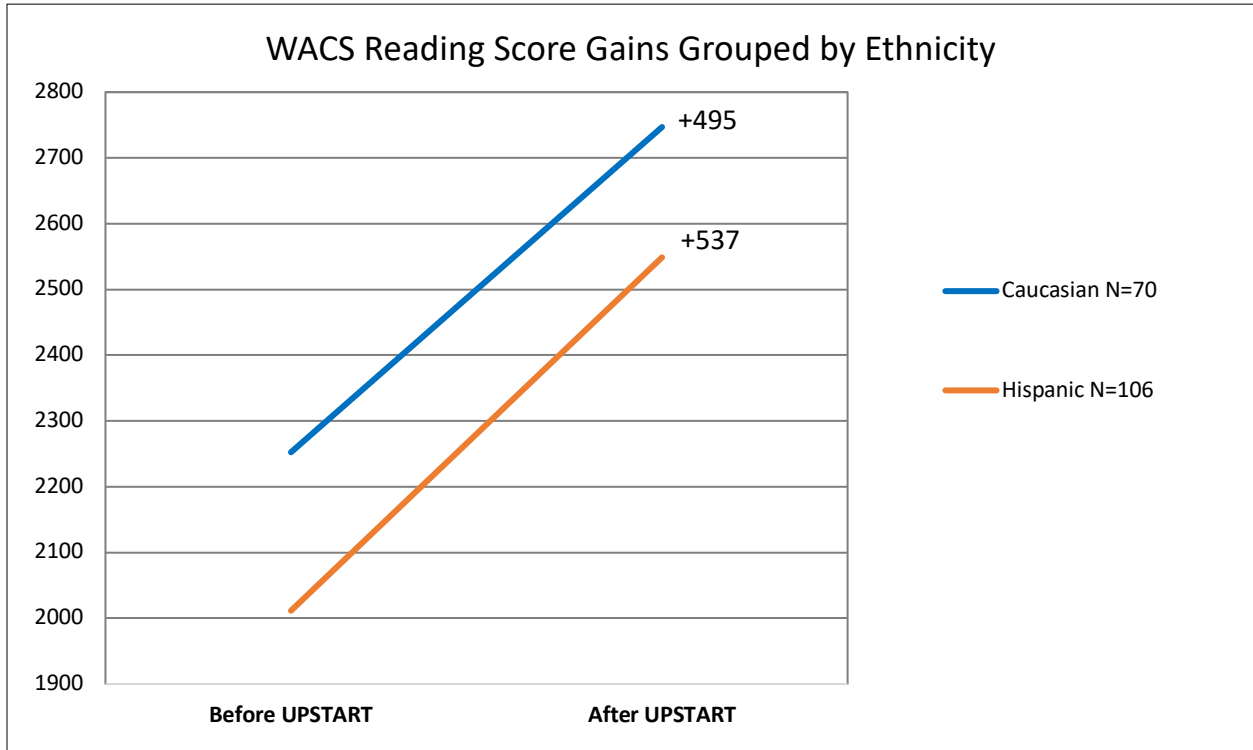
Measured Individual Skill	Final WACS Score	Grade Equivalent
Letter Recognition	2033	Kindergarten Beginning*
Letter Sound	2624	Kindergarten Intermediate
Initial Sound	2551	Kindergarten Intermediate
Blending	2653	Kindergarten Intermediate
Listening Comprehension	2441	Kindergarten Intermediate
Nonwords	3015	1 st Grade Beginning
Sight Words	2947	Kindergarten Advanced
Real Words	3075	1 st Grade Beginning
Reading Comprehension	2585	Kindergarten Intermediate
Vocabulary	2823	Kindergarten Advanced

* Highest possible level for this skill

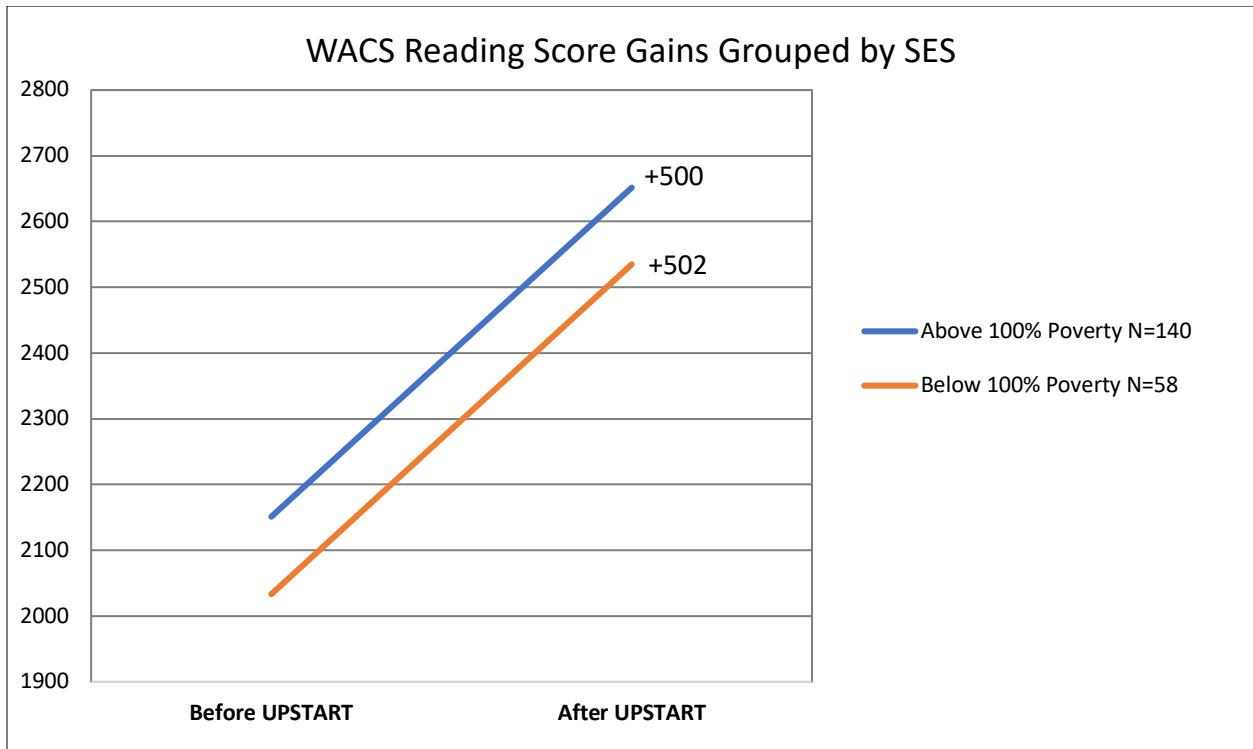
The following chart shows mean results for WACS pretest and posttest, grouped by subtests for the New Mexico Pilot:



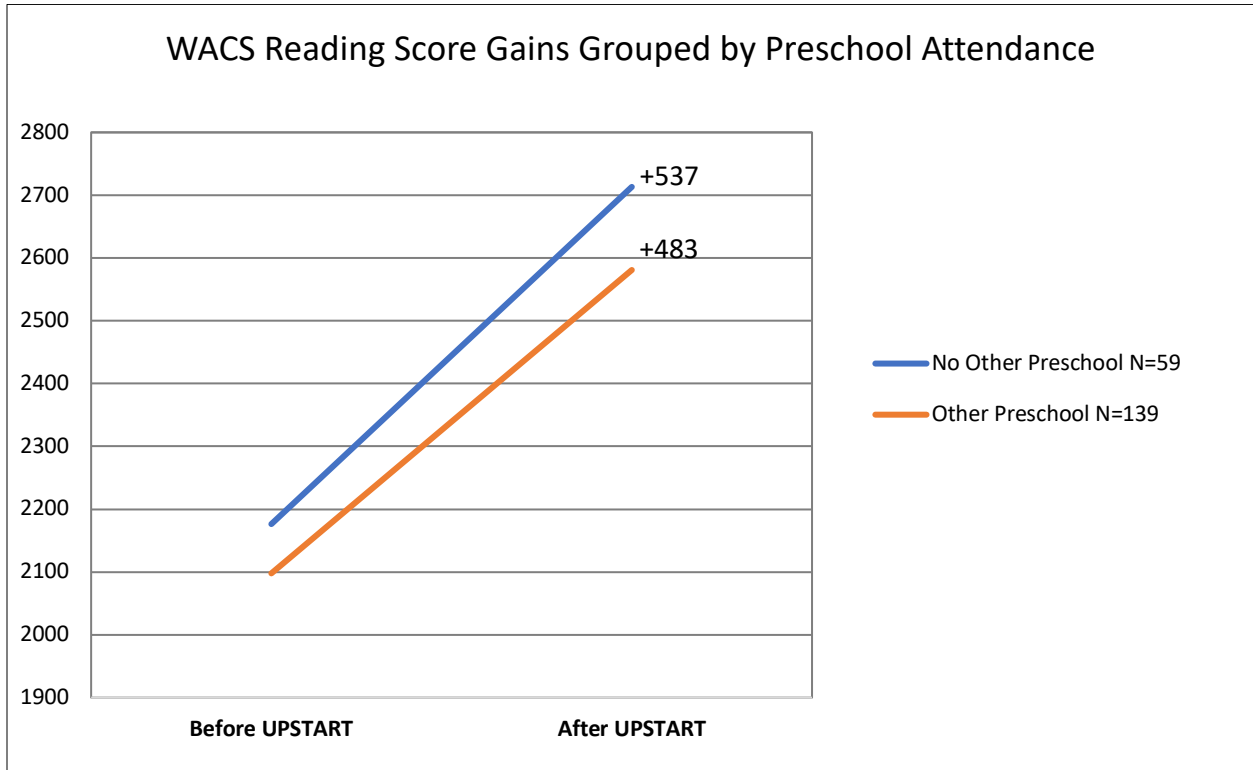
The following chart shows WACS gains grouped by ethnicity. The numbers within the graph indicate point score gains from pretest to posttest.



The following chart shows WACS gains grouped by socioeconomic status (SES). The numbers within the graph indicate point score gains from pretest to posttest.



The following chart shows WACS gains grouped by preschool attendance. The numbers within the graph indicate point score gains from pretest to posttest.



The following table shows mean final WACS scores and their grade equivalents grouped by reported parent/household income level.

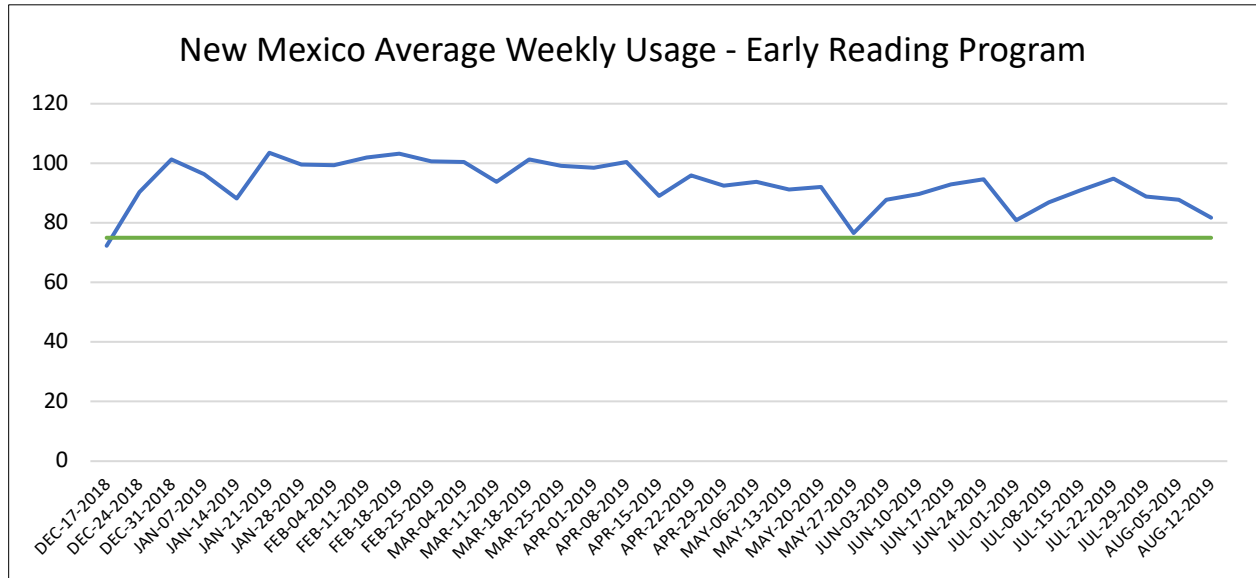
Parent/Household Income Level	Final WACS Score	Grade Equivalent	N Size
\$ 0 - 16,240	2579.15	Kindergarten Intermediate	27
\$ 16,241 - 20,420	2251.67	Kindergarten Beginning	6
\$ 20,421 - 24,600	2443.75	Kindergarten Intermediate	8
\$ 24,601 - 28,780	2521.60	Kindergarten Intermediate	10
\$ 28,781 - 30,028	2673.00	Kindergarten Advanced	6
\$ 30,029 - 32,960	2425.25	Kindergarten Intermediate	4
\$ 32,961 - 37,757	2278.00	Kindergarten Beginning	1
\$ 37,758 - 40,840	2392.88	Kindergarten Intermediate	8
\$ 40,841 - 41,320	2536.25	Kindergarten Intermediate	4
\$ 41,321 - 45,485	2402.60	Kindergarten Intermediate	5

Parent/Household Income Level	Final WACS Score	Grade Equivalent	N Size
\$ 45,486 - 45,500	3473.00	1 st Grade Intermediate	1
\$ 45,501 - 49,680	2684.75	Kindergarten Advanced	4
\$ 49,681 - 53,860	2591.17	Kindergarten Intermediate	6
\$ 53,861 - 57,560	2501.67	Kindergarten Intermediate	3
\$ 57,561 - 58,040	2758.00	Kindergarten Advanced	4
\$ 58,041 - 60,943	2535.00	Kindergarten Intermediate	1
\$ 60,944 - 62,220	2744.50	Kindergarten Advanced	2
\$ 62,221 - 65,920	1924.00	Preschool Advanced	1
\$ 65,921 - 66,400	2601.00	Kindergarten Intermediate	5
\$ 66,401 - 68,672	3057.00	1 st Grade Beginning	1
\$ 68,673 - 70,580	2976.50	Kindergarten Advanced	2
\$ 70,581 - 74,280	2596.00	Kindergarten Intermediate	5
\$ 74,281 - 76,401	2796.00	Kindergarten Advanced	1
\$ 76,402 - 82,640	2722.50	Kindergarten Advanced	4
\$ 82,641 - 84,130	2871.33	Kindergarten Advanced	3
\$ 84,131 - 91,858	2691.30	Kindergarten Advanced	10
\$ 91,859 - 99,587	2952.33	Kindergarten Advanced	3
\$ 99,588 - 107,720	2809.83	Kindergarten Advanced	6
\$ 107,721 - 116,080	3126.00	1 st Grade Beginning	2
\$ 116,081 - 124,440	2872.00	Kindergarten Advanced	1
\$ 124,441 - 132,800	2528.00	Kindergarten Intermediate	1
\$ 132,801 - 141,160	2695.00	Kindergarten Advanced	1
\$ 141,161 - 150,000	2762.67	Kindergarten Advanced	3
\$ 150,001 - 250,000	2923.38	Kindergarten Advanced	8
\$ 250,001 +	2579.15	Kindergarten Intermediate	27

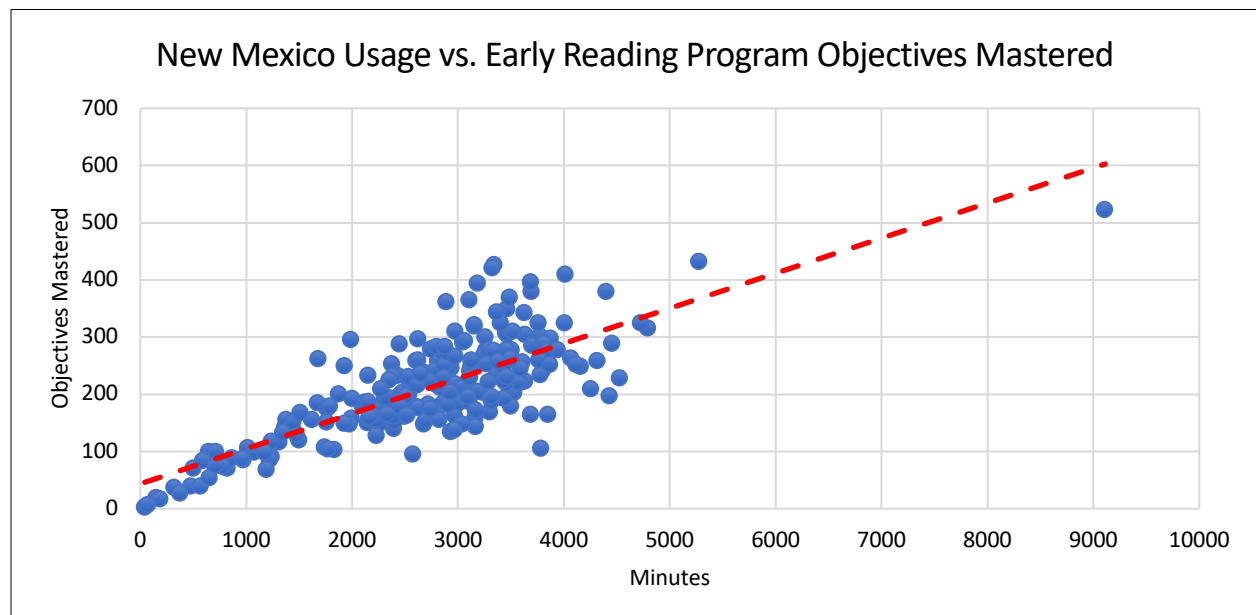
OTHER DATA REPORTING FROM THE NEW MEXICO WATERFORD UPSTART PILOT PROGRAM

Average Weekly Usage: The following chart shows New Mexico participants' average usage of Waterford.org's Early Reading Program on a weekly basis, as shown by the blue line. The green line indicates the recommended usage criterion of 75 minutes per week.

- For **34 out of 35 weeks**, average weekly usage exceeded the recommended usage requirement of 75 minutes per week, representing significant parental engagement under the New Mexico pilot.
- The average reading usage for New Mexico participants was **93.09 minutes per week**.

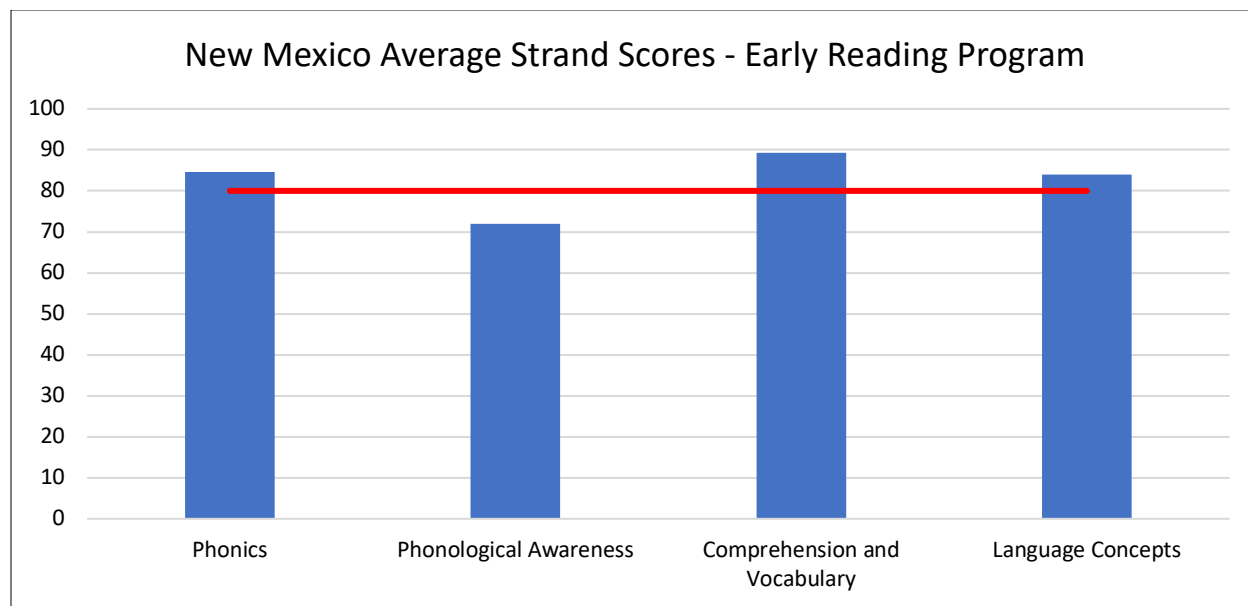


Usage vs. Objective Mastered Correlation: The following chart displays the relationship between minutes of Early Reading Program usage and number of objectives mastered. Each blue dot represents an individual student's usage. The red dotted line indicates that **students with higher usage tend to have a higher number of objectives mastered**.



Reading Strand Scores: Reading strand scores are scores for subskills (phonics, phonological awareness, comprehension and vocabulary, and language concepts) as a percentage of 100. A score of 80 or higher within the Early Reading Program represents mastery, which is the goal of the cognitively based Waterford UPSTART program. Mastery is the basis for more advanced learning (especially the transition from pre-reading skills to reading), so the foundation has been set in the early months of the program for continued success as the program progresses. The sequencer, within the software, individualizes instruction to provide remediation until a child achieves mastery.

The following chart illustrates the average score, organized by strand, for all students who scored on a given strand for the Early Reading Program. The red line represents the expected average score of 80. This chart shows that **the average score for three of the four Early Reading Program strands was at or above 80.**



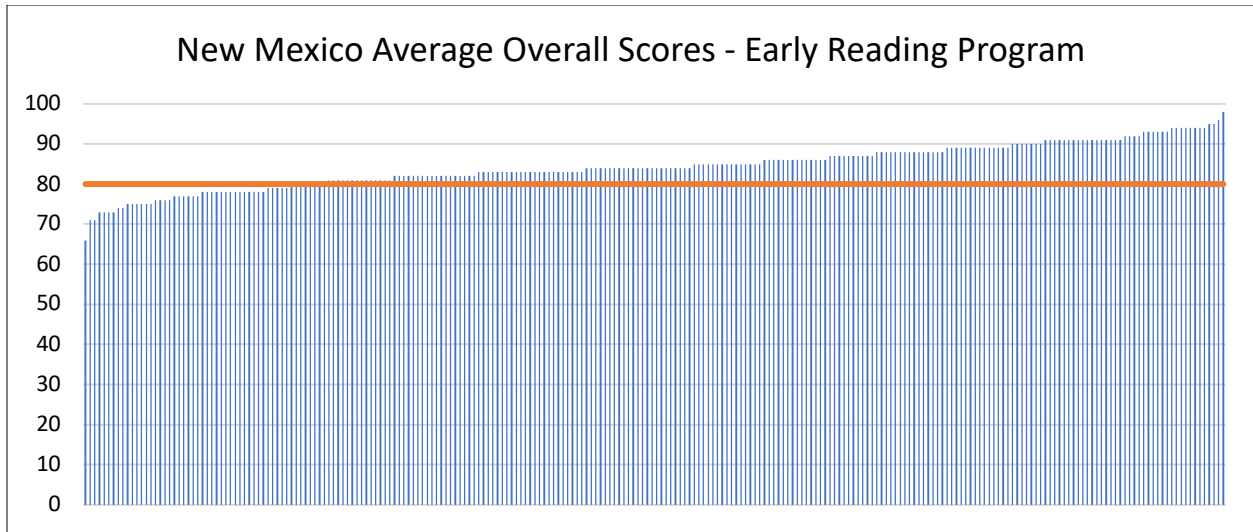
For the New Mexico Waterford UPSTART pilot program, the final average:

- **Phonics** score was **84.66**
- **Phonological Awareness** score was **71.97²**
- **Comprehension and Vocabulary** score was **89.30**
- **Language Concepts** score was **83.93**

Average Overall Reading Scores: The following chart shows the average overall score per student for reading. The orange line emphasizes the expected average overall score, 80, which represents “mastery.” Each blue bar represents the score of an individual student. This chart highlights the achievement level of students.

- The average overall score for students was **84.41**.
- **81.96%** of students had an **overall Early Reading Program score of 80 or higher**.

² *Phonological awareness is an individual’s understanding of the sound structure of words (e.g., what rhymes with cat?). As such, it is a difficult skill to learn, aligned closely to age, with significant growth seen even in month variations. While we still aim to help students master this skill through our software, we consistently see the lowest performance on this skill strand.*



Parent Satisfaction: Parents/guardians participating in the New Mexico Waterford UPSTART pilot program completed a comprehensive survey to provide feedback related to their, and their child’s, experience in the program.

Responses to Survey Questions:

% Agree	Survey Question
100% YES	Waterford UPSTART was helpful in preparing my child for kindergarten
100% YES	Participating in Waterford UPSTART was beneficial to both me and my child
100% YES	I would recommend the program to my family members and/or friends
100% YES	If my Waterford UPSTART child had/has younger siblings, I would enroll them in UPSTART
89% YES	Because of Waterford UPSTART I feel more prepared to support my child’s education
86% YES	Because of Waterford UPSTART, I understand what abilities children need to be prepared to read
95% YES	Because of Waterford UPSTART, I understand what abilities my child has to be able to read
91% YES	Because of Waterford UPSTART, my child and I spend more time exploring letters and words
71% YES	Because of Waterford UPSTART, I read more with my child at home
100% YES	I feel prepared to help my child in school next year
100% YES	I feel that my child is prepared for kindergarten
100% YES	It was helpful to have a consistent routine for when my child would use Waterford UPSTART
100% YES	Waterford UPSTART representatives were friendly and polite when I spoke with them
100% YES	Waterford UPSTART representatives were knowledgeable about the program and the software
98% YES	Waterford UPSTART representatives helped solve any issues I had
100% YES	In general, did your child enjoy using the Waterford UPSTART software?
100% YES	Was the software age appropriate?

Additional Comments:

- *My child is now trying to read to his sibling at night and he feels confident with reading and teaching his brother how to read.*
- *He can read!! He knew his letters and sounds, but blending with him was frustrating on us both, but he got it down thanks to Waterford UPSTART!*
- *He slowly learned reading skills at a pace that was perfect for him. Reintroducing some of the harder material would sink in and before I knew it, he had it.*
- *My daughter went from not caring about reading to being excited about it.*
- *Waterford UPSTART helped my child recognize letters and letter patterns around him and he loved making the connections.*
- *When my child went to kindergarten this year he said I'm not learning anything. I already learned it on Waterford UPSTART.*
- *Helped get my son on a schedule and get used to doing homework.*
- *My daughter was already knowledgeable about letters and sounds going into kindergarten. She was also aware about how to operate a computer. This put her that much more ahead of other students in her class.*
- *My son is reading at the top of his kindergarten class now and I feel like Waterford Upstart is to credit!*
- *It really gave my son a good running start as we jump into reading. It was nice to have another resource that helped encourage the things I was already doing with him at home.*
- *I could tell the difference in her confidence when it came to reading and recognizing words and letters.*
- *Waterford UPSTART was a great experience for my child. I noticed his vocabulary improve, as well as him learning to sound out words even before he learned how to read his first sentence.*
- *It helped him improve memory of numbers through music and improved his reading ability.*
- *When out in public he would recognize things involving the program.*
- *She gets so excited to finish, and enjoyed every one of the lessons. She now comes up to me and tells me that she knows EVERYTHING. She does math for fun, writing and spelling. It's been such a great experience!*
- *It made his English stronger.*

