Talk To Teach - Providence Talks & Brown University's Early Evaluation Findings

Kevin D. Slattery, MPA[1]; Megan Boben, MA[2]; Kenneth Wong, PhD[3]

[1]Providence Talks (City of Providence, RI), [2]Brown University Department of Education, [3]Brown University Urban Education Policy Program

Funding & Background

Early Childhood Education is a rapidly developing field with far-reaching policy and research implications. We know that many of our children, particularly in lower socioeconomic statuses, begin kindergarten already behind their peers. In an effort to try to close this gap before children even reach preschool, the City of Providence launched "Providence Talks" in 2014, with a generous $5 Million investment from Bloomberg Philanthropies via their 2012-2013 "Mayors Challenge," a competition designed to encourage cities to generate bold new ideas that solve urban challenges and improve city life. As of 2017, the Overdeck Foundation and the Rhode Island Foundation are also generously contributing funding to help carry out and sustain the Brown University Evaluation of Providence Talks.

Providence Talks (PT) is a free, early intervention program for families living in Providence, RI that have a child between 2-30 months of age. PT helps caretakers learn about the importance of speaking with their children and supports them in their ability to improve the language environments within their home. PT uses a product called a Digital Language Processor (DLP) that children wear to record their interactions with adults for one day. The DLP, developed by the Colorado-based LENA Research Foundation, acts as a "word pedometer" to capture a comprehensive picture of a child's auditory environment. Home visitors share the results from the DLPs during a bi-weekly coaching visit so parents and caretakers can quickly see a picture of their home auditory environment and how it may or may not be improving. Currently, only families living in Providence are eligible to participate in PT. Providence Talks also utilizes a "Playgroup" model, where parents meet once a week for 6 weeks with their children and other parents in a classroom setting, receiving a similar curriculum to the Home Visiting model. Providence Talks is continuing to develop a "Professional Development" model designed specifically for home and center-based childcare centers and their instructors. The Professional Development model has reached over 600 children so far in the City of Providence, RI.

The Brown University Research Team (BURT) has partnered with Providence Talks to evaluate the impact of their program in the short-term (What are the immediate effects of the coaching and feedback?) and will soon look at the long-term effects (Do early changes in the home auditory environment continue after the child enters kindergarten?). Understanding the effect of Providence Talks is important because PT is engaged in accomplishing something never before attempted at the municipal level: to intervene at a critically early age on a city-wide scale to ensure that every child enters a kindergarten classroom ready to achieve.
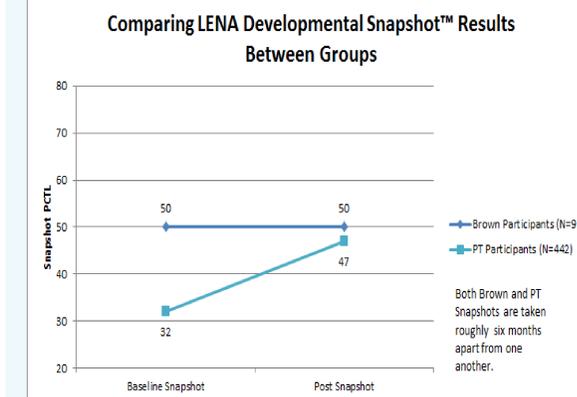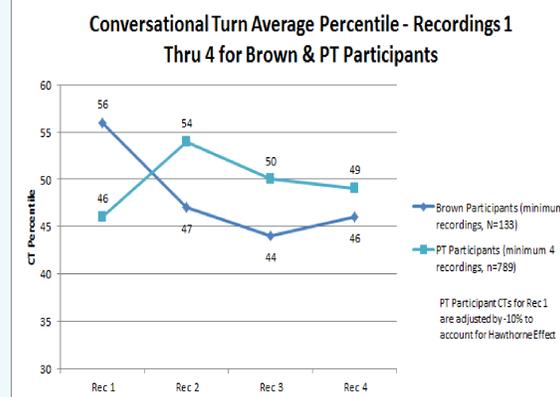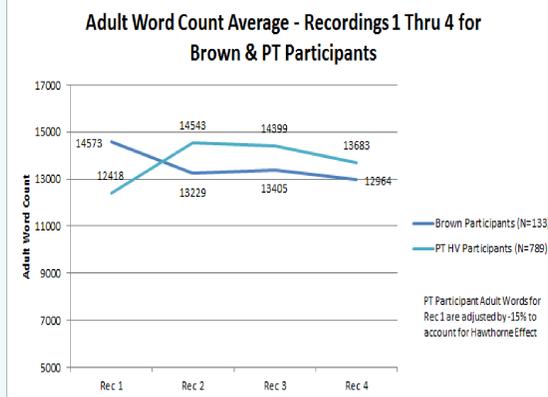
Source of Data & Methodology

Children participating in Providence Talks wear the LENA™ Digital Language Processor device in a vest for up to 16 hours on the days they record. The DLP records all of what the child hears in a day. After the recording, the DLP is downloaded on to a secure computer where software analyzes the recording, focusing on the number of words the child hears from an adult, the number of conversational turns the child participates in with an adult, and the amount of time the child is exposed to electronic media. The recordings are never listened to and are automatically deleted after being downloaded. PT and BURT both also look at the LENA Developmental Snapshot™, a norm-referenced, 52-item parent-completed evaluation of language skills for infants and toddlers focusing on well-established milestones associated with expressive and receptive language skills.
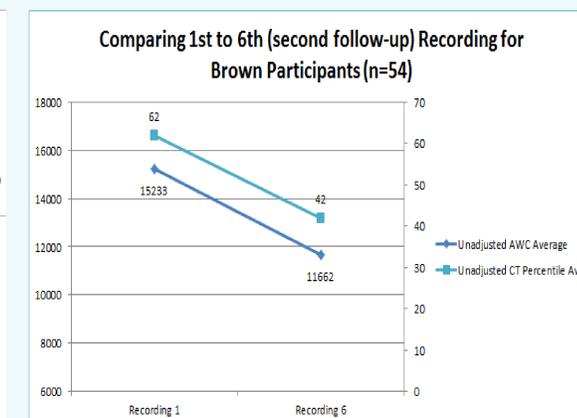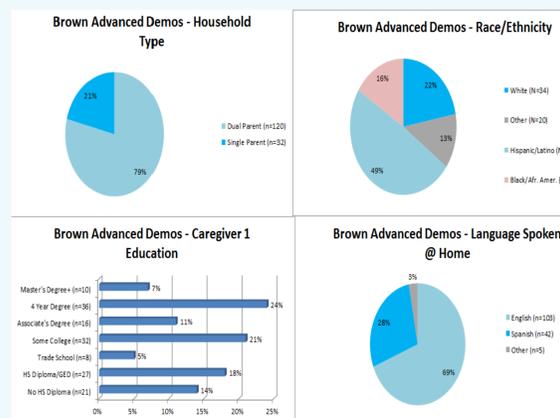
Methodology: The Brown University Research Team focuses on comparing the differences in adult word counts, and conversational turn counts between families who participated in Providence Talks and those who did not. Similar to PT, BURT researchers visited the homes of interested, eligible families to enroll them in the study and train them on how to use the DLPs. Unlike PT, the group recruited by BURT did not know what the DLPs measure and did not receive any feedback from their recordings, although BURT is sharing results after all the recordings are complete. Families were also given a $20 Walmart gift card after completing each recording as an incentive to participate.

Comparison of Services for PT Families and Comparison Group Families:

Service	LENA Recording	Recording Report	Home Visit Coaching Session	Book Donation	Cash Incentive
Providence Talks	✓	✓	✓	✓	✗
Comparison Group	✓	✗	✗	✗	✓

Theory of Change

Build on the Power of Parents

Parents, living in Providence, with a child 0–30 months of age → Strengths-based coaching, LENA technology → • Increased word counts & parent-child interaction • Increased scores on developmental assessments • Links to additional resources → Early Age Developmental Gains in Language Improved Language & Literacy Outcomes

---

Adult Word Count Average - Recordings 1 Thru 4 for Brown & PT Participants

Brown Participants (N=133)
PT HV Participants (N=789)

PT Participant Adult Words for Rec 1 are adjusted by -15% to account for Hawthorne Effect

Conversational Turn Average Percentile - Recordings 1 Thru 4 for Brown & PT Participants

Brown Participants (minimum 4 recordings, N=133)
PT Participants (minimum 4 recordings, n=789)

PT Participant CTs for Rec 1 are adjusted by -10% to account for Hawthorne Effect

Comparing LENA Developmental Snapshot™ Results Between Groups

Brown Participants (N=91)
PT Participants (N=442)

Both Brown and PT Snapshots are taken roughly six months apart from one another.

Advanced Demographic Metric	PT Baseline AWC Average (Home Visiting Only)	Brown Eval Baseline AWC Average
Primary Giver Education Level: HS Diploma/GED or Less	11,222 (n=522) Median: 10,260	11,942 (n=48) Median: 11,089
Single Parent Household	11,634 (n=324) Median: 10,989	10,586 (n=32) Median: 8,797
Dual Parent Household	11,878 (n=662) Median: 10,698	12,298 (n=120) Median: 11,733
English-Speaking Household	12,234 (n=324) Median: 11,532	12,615 (n=103) Median: 11,493
Spanish Speaking Household	11,576 (n=645) Median: 10,659	11,385 (n=42) Median: 11,412

Brown Advanced Demos - Household Type

Dual Parent (n=120)
Single Parent (n=32)

Brown Advanced Demos - Race/Ethnicity

White (n=34), Other (n=20), Hispanic/Latino (n=74), Black/Afr. Amer. (n=24)

Brown Advanced Demos - Caregiver 1 Education

Master's Degree+ (n=10), 4 Year Degree (n=36), Associate's Degree (n=16), Some College (n=32), Trade School (n=), HS Diploma/GED (n=29), No HS Diploma (n=21)

Brown Advanced Demos - Language Spoken @ Home

English (n=103), Spanish (n=42), Other (n=5)

Comparing 1st to 6th (second follow-up) Recording for Brown Participants (n=54)

Unadjusted AWC Average
Unadjusted CT Percentile Avg

Discussion of Data

In being the only program nationwide to attempt to bridge the word gap at scale on a city-wide level, Providence Talks has accumulated a large amount of data suggesting progress in families increasing their home's auditory environment through increased words and conversational engagements. Currently, all three unique program models (Home Visiting, Playgroups, and Professional Development) are showing different levels of progress in a variety of metrics.

Brown University's Evaluation models itself after the PT Home visiting models, with the two follow-up recordings occurring in Month 6 & 8 designed to correspond with the "monthly stage" recordings toward the end of the Home Visiting Curriculum.

Early results suggest a statistically significant difference in certain metrics for the PT participants receiving the home visiting intervention curriculum compared to those in the quasi-control group. Using LENA's own Developmental Snapshot tool, we see an immediate impact in parental recognition of their children's language skills that differs from the lack of change in control group participants.

The high baselines in both Adult Words and Conversational Turns for the control group has also raised the question of a Hawthorne Effect of families artificially elevating their word counts due to the presence of the LENA Digital Language Processor. This was expected to be somewhat nullified since families in the study are not aware of the true purpose of the DLP, unlike in the intervention model where elevated baseline counts are expected.

Initial comparisons between the home visiting intervention and control group in AWC/CT show a significant difference in progress in the first several recordings, before tapering off in the curriculum's monthly stage. More research is needed, both in further analysis of Providence Talks, as well as general home visiting curriculums targeting the word gap to analyze length of the intervention, the initial impact, and best practices to make sure any realized gains in these metrics are maintained over a longer period of time.

Currently, 71% of PT home visiting participants (n=122/172) who show a minimum of 20% AWC increase between their first and tenth recording are maintaining at least three-quarters of their progress by the final 13th recording in the home visiting curriculum.

Limitations and Successes of the Evaluation

When looking at Brown's advanced demographic data, great effort was made for the demographic makeup of the control group participants to match those in the intervention group. However, there still are questions about the elevated educational level of the Brown participants (55% of primary caregivers have completed at least some level of college education) compared to the PT home visiting model (34%). This higher average educational level for the control group may explain the elevated baseline numbers seen for Adult Words and Conversational Turns. In addition, increased adult speech by the parent in order to get their child to speak more could be a kind of Hawthorne effect contributing to the baseline numbers.

The BURT study also successfully managed a 90% retention rate as of August 2017 for all 152 control group participants who managed at least one valid recording. This was a higher than expected retention rate that allowed BURT to enroll less total participants than originally thought necessary to achieve the desired sample size. Efforts are underway to get a better understanding of why this particular set of study participants felt compelled to stick with the recordings through multiple weeks and months.

Conclusions

- The PT intervention has achieved strong success on its short term indicators (AWC, CT, Snapshots). This success suggests a potentially strong long-term impact on children as they enter school. This is also backed by national research which states that high quality prekindarten programs have significant impacts on children's development, producing meaningful, lasting gains for children's learning and development[1]

- Further planned research by Brown to examine differences in Kindergarten Readiness data between children who experienced the PT intervention (and at what age) and other Providence-based children will be important in determining the impact of the PT early intervention models.

[1] Barnett, W. S. (2008). Preschool education and its lasting effects: Research and policy implications. : http://nieer.org/resources/research/PreschoolLastingEffects.pdf

Recruitment Methodology

Recruitment into Brown University's evaluation comparison group was done with careful consideration for demographic controls, and assuring that the population sample acquired for the evaluation would be one comparable to the clientele of the Providence Talks intervention group, all of whom live in the city limits of Providence, Rhode Island.

Families recruited for the comparison group were recruited from a pool of cities geographically close to and demographically similar to Providence. In Rhode Island, these cities include Pawtucket, Central Falls, and Woonsocket primarily. In southeastern Connecticut, families were also recruited from the greater New London metropolitan area. Families were not only recruited to serve as a quasi-control group to those enrolled in Providence Talks, but also are meant to establish a baseline of need to support the expansion of PT into surrounding cities.

In the PT home visiting and playgroup models, families are recruited by dedicated recruitment specialists at each participating agency.

Funded by Bloomberg Philanthropies