DISRUPTING THE EARLY LEARNING STATUS QUO: PROVIDENCE TALKS AS AN INNOVATIVE POLICY IN DIVERSE URBAN COMMUNITIES

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Executive Summary

Early childhood education is gaining prominence as a strategy to narrow the achievement gap. A challenge in the field of early childhood education is the existence of the learning gap for many children even *before* they enter kindergarten. This gap is particularly notable for children from socioeconomically disadvantaged backgrounds (Garcia 2015). In an effort to disrupt the learning status quo before formal schooling starts, the City of Providence launched "Providence Talks" in 2014.

Providence Talks (PT) is a free, early intervention program that enrolls children between 2-30 months of age from families living in Providence, RI. 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[2],acts as a "word pedometer" to capture a comprehensive picture of a child's auditory environment.

Providence Talks is currently disseminated through three different service delivery models: a one-on-one Home Visiting model, a Playgroup model, and a Professional Development model. This evaluation only focuses on the Home Visiting and Playgroup models.

The PT Home Visiting model is the most intensive and is administered over an 8-month period, exposing families to a rigorous intervention through 13 one-on-one home visits where the family not only participates in a detailed curriculum, but also receives feedback from each of their DLP recordings via the LENA Feedback Report. Home Visiting participants also receive one free book for the family to keep each visit. The PT Playgroup model is less rigorous and focuses on delivering services at a lower cost to more families. Families in the Playgroups get together with four or five other families at a community site to receive a similar Providence Talks curriculum

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from a Service Provider, but only over the course of six weeks. Families still complete recordings at home using the DLP and receive data reports from the Service Provider. Currently, due to funding availability, only families living in Providence are eligible to participate in either of these PT models.

The Brown University Evaluation Team (BUET) has partnered with Providence Talks to *independently 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 to contribute to learning after the child enters kindergarten?). Understanding the effects 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 kindergarten ready to learn.

In order to allow PT to continue its focus on achieving citywide scale, BUET decided to recruit *a quasi-control group* of families predominantly from the cities directly around Providence with similar demographics. These families were also asked to use the DLPs to record their home language environment, but were only asked to make six recordings over an 8-month time period instead of 13, since BUET was trying to capture any natural change that might occur in that time period and not on giving feedback to families.

Key Findings

This study found that Providence Talks improved the home auditory environment for parents and primary care takers who started with a lower level of Adult Word Count and Conversational Turns. This study also showed the benefits of having design variations in Providence Talks. While the home visiting model worked well for some participants, the play group model showed promising results across several demographic groups. Further, based on self-assessment, parents in both the home visiting and the play group models tended to increase their self-efficacy. Providence Talks may serve as a strategy to promote parental engagement. Given Providence Talks' scale, design, and efforts to recruit the targeted populations in diverse neighborhoods, this study concludes that Providence Talks constitutes a promising strategy to disrupt the status quo to advance early learning for all children.

LENA Developmental Snapshot
- LENA Developmental Snapshot is 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.
- Brown control group participants showed no change on average between their 1st and 2nd Snapshot scores, going from the 50th to the 50th percentile.
- Home visiting model participants showed, on average, a 40% increase in percentile rank, going from the 35th to the 49th percentile on average. Playgroup families went from the 28th to the 46th percentile, a 64% increase in percentile rank.

- The significant increase in the children's developmental age for the intervention models show Providence Talks making a significant developmental impact on the children receiving the PT intervention.

PT Playgroup Intervention Model
- When looking at all completed participants regardless of where they started, PG families increased their AWC percentile rank from the 30th to the 47th percentile, a 56% increase. They increased their CT percentile rank from the 37th to the 42nd, a 13% increase.
- The Playgroup intervention model produced statistically significant results in increasing Adult Word Count, Conversational Turn Count, LENA Developmental Snapshot scores, and Parenting Ladder scores among its participants.
- This was also true for the "Target Group" of families starting at or below the 50th percentile in AWC/CT outcomes.
- In the target group (at or below the 50th percentile), families increased their raw AWC by 51%, and increased their AWC percentile rank by 281% (11th to the 42nd percentile).
- Among the target group of Playgroup families (at or below the 50th percentile), they increased AWC percentile rank by 244% (9th to 31st), and CT percentile rank by 64% (17th to 28th)
- Among the bottom third of Playgroup families (at or below the 33rd percentile), they increased AWC percentile rank by 283% (6th to the 23rd), and CT percentile rank by 130% (10th to 23rd)
- Between the baseline and final regular recording, 73% of all completed participants in the Playgroup model increased their AWC, while 60% increased their CTC.
- There are no significant decreases in AWC for the Playgroup model between the final regular recording and the follow up recording.
- Adult Word Count: The Playgroup model produced a higher overall percentage of families making gains, but the Home Visiting model resulted in *larger* gains for the families who did increase their AWC outcomes. For example, among completed participants who started at or below the 50th percentile, the average raw AWC change for PT HV families was 16% larger than Playgroup (51% increase compared to 35%).
- Conversational Turn Count: The Playgroup model, when looking at families with the lowest language levels upon entry (at or below 33rd percentile), increased the percentile rank of their families by 242% (7th to 24th percentile), compared to Home Visiting, which had a 93% increase in that subgroup (14th to 27th percentile). For CTs, Playgroups produced larger gains in terms of percentile rank increase.

PT Home Visiting Intervention Model
- When looking at all completed participants regardless of where they started, PG families increased their AWC standardized percentile rank from the 30th to the 47th percentile, a 56% increase. They *decreased* their CT percentile rank from the 52nd to the 44th percentile, a 15% decrease.

- The PT Target Group, starting at or below the 50th percentile, or the lowest- performing group upon entry, starting at or below the 33rd percentile produced the *strongest gains* in both AWC/CT metrics. These are also the families who most need a PT-like intervention.
  - In the target group (at or below the 50th percentile), families increased their raw AWC by 51%, and increased their AWC percentile rank by 281% (11th to the 42nd percentile).
  - Among the bottom third of Home Visiting families (at or below the 33rd percentile), they increased AWC percentile rank by 457% (7th to the 39th), and CT percentile rank by 93% (14th to the 27th).
- Between the baseline and final regular recording, 56% of all completed participants in the Home Visiting model increased their AWC, while 42% increased their CT percentile
- For families with at least 15 (two follow up) recordings, there is actually an average increase in AWC between the final regular recording and the 180 day follow-up recording. There is a very small decrease (49th to 48th percentile, or roughly 2%) in CT percentile between the final regular recording and the180 day follow- up recording.

Brown quasi-control group
- The Brown quasi-control group came in with higher baseline averages, approaching the 58th PCTL in AWC and the 58th PCTL in CTC.
- These high baselines would decrease significantly when future recordings were averaged, showing what appears to be a tendency for word levels to flatten out or decrease in the absence of meaningful intervention attached to them.
- There may be a Hawthorne/Observer effect in place even when the family only has a vague idea of what the Digital Language Processor recordings are meant for. Since families were aware that the DLPs were looking at the language environment in general (but not aware about specific word/turn counting), this may have in fact elevated not only their first recording, but other recordings as well.
- Elevated word levels may have to do with the higher-than-average education levels for the control group families --- 64% completed at least some level of college.
- However, when comparing Recording 1 (baseline) averages to final scheduled recording averages for control group participants that completed the program, we saw the average AWC percentile rank fall from the 58th percentile to the 42nd percentile, a decrease of roughly 27%. In addition, we saw the CT percentile rank fall from the 58th to the 47th percentile, a decrease of roughly 19%.
- Between the first and second Snapshot averages, there was no change in percentile rank (50th to the 50th percentile).

Parenting Ladder
- The statistically significant increases in the mean scores between the baseline and post-intervention Parenting Ladders show that Providence Talks appears to be making a positive impact on a parent's self-efficacy after they have gone through either the Home Visiting or Playgroup interventions.

- The control group showed no statistically significant differences on the Parent Ladder from baseline to follow-up.

Frequency of intervention plays a role
- The strongest gains in AWC for the Home Visiting model are being made in the bi-weekly recording stage. Among participants who completed their 90 and 180 day follow up recordings, we saw an 11% increase in raw AWC by the last bi- weekly recording session. By the time those same families finished their 180 day follow up recording, those levels fell by 4%, resulting in roughly a 7% overall increase in raw AWC.
- The Playgroup model families who completed their follow-up showed a roughly 18% increase in raw AWC by Week 8. If we look at the relevant Home Visiting recording time-wise (Week 9, Recording #5) we're seeing a comparable increase of roughly 12%.
- This suggests the frequency of intervention is playing a strong role in families elevating their language levels. Increased follow-up interventions or ensuring a transition to other programming options for families upon disenrollment of PT would play a role in trying to keep those families engaged in the pre-Kindergarten years.

Overall Conclusions
- Based on the significant increases seen in the LENA Developmental Snapshot and the Parenting Ladder, this evaluation concludes that families in the intervention models are experiencing positive growth in parental self-efficacy and child development not seen in the quasi-control group.
- Participants in the PT Target group who started at or below the 50th percentile, had the most to gain by a PT intervention, and their home auditory environment was clearly improved when comparing baseline averages to post-intervention averages.
- Not all families in the Home Visiting model increased AWC/CT outcomes; particularly families who came in at a high level, above the 50th percentile.
- Of the 221 Home Visiting families whose AWC baseline came in at or above the 50th percentile, 43 (19%) had a negative AWC change on their final 13th recording average when compared to the baseline. In this subgroup, roughly 23% (n=10) experienced an average negative raw AWC change of greater than 10,000 words on their final recording. It was this subgroup that the Hawthorne Effect may have occurred most significantly.
- Increases in Adult Word Count occurred more frequently than Conversational Turn increases, suggesting families had an easier time adapting a "talk more" philosophy with their children as opposed to "engage more."
- The single demographic group which showed the lowest average AWC/CT baselines (29th and 33rd, respectively) was families where the primary caregiver had no high school diploma, suggesting a lack of formal education is a key demographic consideration regarding recruitment to finding families who can benefit the most from Providence Talks.
- Frequency of intervention matters, with the largest outcome gains for AWC and CT occurring early in the program, where home visiting coaching sessions occur most frequently in the bi-weekly stage.

- The decreases for outcome metrics in AWC/CT for the home visiting model occurred later in the intervention model – After Week 19.