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EXECUTIVE SUMMARY

Impact Evaluation for the *Parent Child Plus* Program, Newark Trust for Education

April 2020

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Introduction

This Executive Summary was developed to facilitate discussion and decision making. The detailed findings and method are available in the full report, *Impact Evaluation for the Parent Child Plus Program, Newark Trust for Education* (2020), and related set of technical appendices that are available upon request.

The Newark Trust for Education (NTE) *Parent Child Plus* (PC+) program is an evidence-based early childhood education program for families in the city of Newark, NJ. NTE seeks to evaluate PC+ by conducting analyses of existing data for a cohort of 89 families, assessed 4 times over 46 weeks using observational measures of parenting practices and children's socio-emotional skills.

The PC+ program is intended to result in "improved child behaviors related to social-emotional development and self-regulation skills" (Organizational Research Services [ORS], 2010, p. 23). Data generated as part of the PC+ program implementation include ratings by home visitors using the inhome observation assessment instruments, Child Behavior Traits (CBT) and Parent and Child Together (PACT), that "were specifically developed to evaluate the social-emotional status of low-income children age two to four and the positive parent-child interaction behaviors of low-income parent-child dyads, respectively" (ORS, 2010, p. 10).

The home visit curriculum is delivered in the family home using four major strategies: (a) a strengths-based approach, (b) using parents/caregivers as teachers, (c) focusing on children's learning and development outcomes, and (d) involving siblings and family members to reinforce the child's learning experience. The PC+ home visits are made up of the following elements: A program schedule (VISM) for the home visit curriculum that thematically pairs books (in English, Spanish, or Portuguese) and toys together for a family to receive for a given program cycle. A manualized curriculum (VISM Guide) that explains key concepts, related to the books and toys received by the family, for the parent/caregiver to focus on after the home visit. A contract that obligates the parent/caregiver to maintain the predetermined home visit schedule and be present during the home visits. The standard home visit is a half-hour, during which the parent/caregiver and child practice specific positive interactions around the use of the books and toys provided by the PC+ program. A storage bin is provided to the family by PC+ for keeping books and toys organized.

Evaluation Design. The evaluation was conducted using the *Quality-Impact Equity Design and Methods (QDM) Toolbox* (Smith, Peck, Roy, & Smith, 2019; Smith, Peck, & McNeil, 2020). This approach is focused on how diverse socio-emotional and other skills are organized within individuals as integrated wholes that are elaborated in situations that occur across the lifespan. In addition to focusing on individuals as integrated wholes, we also focus on situations as integrated wholes. Consequently, our theory and method shifts the focus from the relations between single dimensions (or variables) to the relations between integrated sets of person variables (e.g., child SEL skill profiles) and integrated sets of context variables (e.g., parenting quality profiles).

The final impact models address core questions about the real-world impacts and equity effects of PC+: Does exposure to high quality (PC+) parenting practices cause growth in children's SEL skills? Are children and parents with the lowest skills at baseline experiencing the same or better impacts from participation? How many parent-child dyads achieved an optimal configuration of parenting practice quality and child SEL skill?

We used the following methodology to address these questions: First, Parenting Practice Quality and Child SEL Skill items were configured to maximize reliability and validity for measuring socioemotional skill constructs. Second, the resulting scales were used to identify subgroups of parents and



children characterized by their unique *holistic profiles* of skills (e.g., "whole child") at each timepoint. Third, *pattern-centered* analytics were used to describe (a) parenting practice and child SEL skill growth over four timepoints; (b) the impacts of PC+ participation overall, and the quality of parenting practices specifically, on child SEL skill growth, and (c) the equity effects of PC+, positive or negative, for children who had lower baseline SEL skills.

We define impact in terms of the actual "in-the-world" structure of causes and effects, not in terms of *counterfactuals*, although our impact models do also include counterfactual comparisons. In addition, QDM methodology is robust with smaller numbers of study participants (e.g., the sample size of 89 poses minimal threats to the validity of most findings). A brief description of the QDM methodology is provided in Appendix A of the full report.

Findings

In this section, the study findings are summarized with a moderate level of detail. Overall, PC+ appears to be well fit to the population served, substantial impacts appear to occur, and the most at-risk parents and children are sharing in those benefits.

I. PC+ is well fit to the parents and children served.

At baseline, measures of both parenting practice quality and child SEL skill indicate a wide range of quality and skills in the participating families. During the intervention, one third of families were supported to stay in the optimal skill range, and over one third of families moved from lower skill profiles into the optimal, high-high configuration, where both parent and child are highly engaged in learning. The fact that many parents have something to learn from PC+, and that a substantial portion of them attain optimal practice quality, indicates that PC+ recruitment efforts effectively located participants that could benefit from the service.

Baseline Parenting Practice Quality was assessed using four behavioral skill constructs defined as follows:

Warmth refers to the *perceived intent* of caregiver behavior, as experienced by the child. As defined by the available PACT items, caregiver warmth is inferred (by both children and external observers) from parenting behaviors such as tone of voice, body language, positive verbal engagement, and access to emotional comfort in moments of difficulty. Caregiver warmth addresses the primary human need for safety, cultivating children's positive emotions and helping them form secure attachment schemas that provide the foundation for higher levels of engagement with skill-learning opportunities.

Responsivity – sometimes termed maternal sensitivity or contingent responding – refers to a caregiver's in-the-moment responsiveness to the child (e.g., being available in the moment of need). As defined by the available PACT items, caregiver responsivity is inferred from parenting behaviors such as listening, smiling, and conversing.

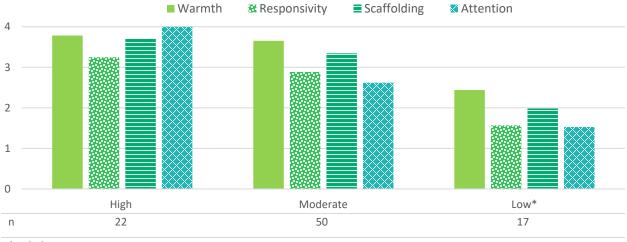
Scaffolding refers to processes by which adults assist children by modeling or otherwise directing or supporting children's actions. As defined by the available PACT items, caregiver scaffolding is inferred from parenting behaviors such as verbalizing expectations, giving directions, and providing verbal encouragement.

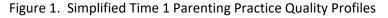
Attention refers to caregiver practices that help children focus and hold their attention on activities while experiencing warmth, responsivity, and scaffolding practices in the learning environment. As



defined by the available PACT items, caregiver attention is inferred from their ability to gain the child's attention.

Figure 1 presents three profiles of Parenting Practice Quality. At T1, 25% of the parents were in the high-quality parenting practice profile, 56% were in a moderate-quality profile, and 20% were in a low-quality profile. Each PACT item was rated on a five-point scale, where 0 = "Never," 1 = "Rarely (less than half of home visits)," 2 = "Sometimes (about half of the home visits)," 3 = "Often (more than half of the home visits)," and 4 = "Always (every home visit)."





*Includes M.Low

Sample-Level Changes in Parenting Quality refers to changes in the proportion of parents in a given profile at each team point (by reference to the full range of profile types found within the sample across the four time points). This means that we align the profiles across time so that what we call, for example, the "high-skill" profile at T1 has the same meaning as the "high-skill" profile at T4.

At the sample level, there were substantial structural changes in Parenting Quality profiles across 46 weeks of the PC+ program. For example, a new, "exemplary" form of parenting practice emerged at T2, very low and low-quality parenting practices disappeared by T3, and all of these structural changes persisted through T4.

Figure 2 summarizes the sample-level changes in Parenting Quality profile membership from T1 to T4. The lines shown in Figure 3 reflect changes in the sample-level proportion of parents demonstrating high-, moderate-, and low-quality parenting practices at each point in time. Note, however, that these lines do not reflect the *individual-level* pathways followed by any particular parent.



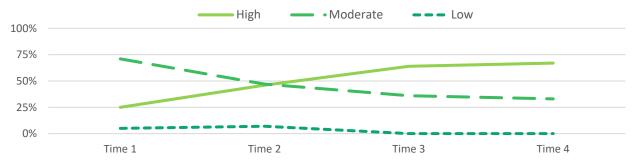


Figure 2. Changes in Sample-Level Parenting Quality Profile Membership from Time 1 to Time 4

Baseline Child SEL Skill was assessed using three behavioral skill constructs defined as follows:

Schemas refers to non-verbal, non-symbolic, affectively-charged representations of the self and world, as in "attachment schemas." Schemas are initially formed and elaborated automatically during child-caregiver interactions and have been described in terms of four primary forms of *attachment style* (i.e., secure, insecure [anxious, or avoidant], and disorganized). We describe attachment schemas as constituting basic regulation skills because, as relatively-enduring parts of the identity system, they act like *set points* for the way children initially engage in and respond to parenting practice quality.

Beliefs refers to verbal-symbolic representations of the self and world. We describe beliefs as advanced regulation skills because they reflect the values, goals, rules, and norms (conveyed to them via parenting practices) that allow children to successfully understand and participate in increasingly complex social situations.

Attention (or executive attention; or awareness) refers specifically to consciously controlling the focus of awareness in relation to ongoing thoughts and feelings. Eventually, the executive functions (e.g., shifting and focusing awareness) can operate on thoughts and feelings to provide the basis for all forms of self-reflection (e.g., the effortful control of impulses).

Figure 3 presents three profiles of Child SEL Skill. At T1, 23% of the children were in the high child SEL skill profile, 36% were in a moderate-skill profile, and 41% were in a low-skill profile. Each CBT item was rated on a five-point scale, where 0 = "Never," 1 = "Rarely (less than half of home visits)," 2 = "Sometimes (about half of the home visits)," 3 = "Often (more than half of the home visits)," and 4 = "Always (every home visit)."

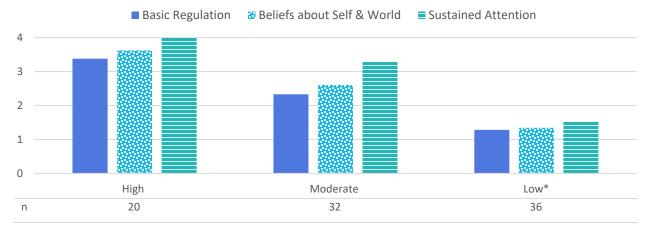


Figure 3. Simplified Time 1 Child SEL Skill Profiles



*Includes M.Low

Sample-Level Changes in Child SEL Skill refers to changes in the proportion of children in a given profile at each team point (by reference to the full range of profile types found within the sample across the four time points). In order to determine the extent of *sample-level* stability and change in child SEL skill profiles across the 46 weeks of the 2019 NTE PC+ program, we applied the pattern-centered *centroid* matching procedure to compare the original T1 child SEL skill profiles to the original T2 child SEL skill profiles (repeating the analysis for T2 compared to T3 and T3 compared to T4). The results of the centroid analyses indicate that, at the sample level, there were substantial structural changes in Child SEL Skill profiles across the 46 weeks. For example, similar to the parenting practice profiles, a new, *exemplary* form of child SEL skill emerged at T2, the very low-skill SEL profile disappeared by T2, and the low-skill SEL profile disappeared by T4.

Figure 4 summarizes the sample-level changes in Child SEL Skill profile membership from T1 to T4. The lines shown in Figure 4 reflect changes in the sample-level proportion of children demonstrating high-, moderate-, and low-skill SEL skills at each point in time. Note, again, that these lines do not reflect the individual-level pathways followed by any particular child.

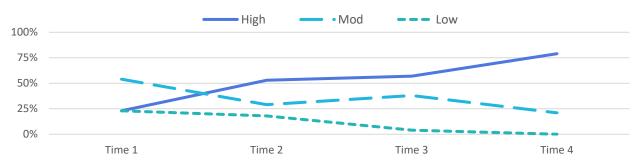


Figure 4. Changes in Sample-Level Child SEL Skill Profile Membership from Time 1 to Time 4

II. PC+ fidelity is strongly related to children's SEL skill growth.

One key characteristic of the PC+ theory of change is the double-arrow intervention design, where both parent and home visitor have direct effects on the child. Because the home visiting program was delivered uniformly at high fidelity, according to the implementation indicators that are available, we focused on the impact of parenting practice quality on child SEL skills. Across impact models, parenting practice quality was related to child skill pathways, supporting the NTE PC+ theory of change.

Growth in Quality and Skills. From Time 1 to Time 4, there was a 168% increase in parents attaining the optimal range of Parenting Practice Quality and a 243% increase in children attaining the optimal range of SEL Skill. Perhaps more importantly, the percent of parent-child dyads who were both in the optimal skill range (i.e., High or Exemplary profiles) rose from 13% at Time 1 to 60% at Time 4. This is a dramatic change in parent and child functioning of the most desired kind: The parent is providing high-quality support, and the child is responding with high engagement of SEL skills.

Individual-level pathways for both parenting quality and child SEL skill were identified by reference to one of three possible forms of change across each adjacent point in time: growth, stability, or decline. For example, if a parent was in the moderate-quality parenting profile group at T1 and the high-quality profile group at T2, they were classified as following a T1 to T2 *growth* pathway. The results of classifying individual parents and children in terms of their pattern of change (i.e., growth, stability, or



decline) are summarized in Figures 5 and 6, with change patterns for the entire T1-T4 span shown at the right-hand side of each figure.

In general, parenting quality and child SEL skills were similar at each time point and across time points, indicating a strong relationship. More specifically, although almost all participants experienced growth at the beginning of the PC+ intervention, stability was the norm at the end, suggesting that PC+ operates in a "bump and maintain" shape through time. The bump in parent and child development occurs as PC+ is introduced, and then gains are maintained through the final time point.



Figure 5. Individual-Level Parenting Quality Pathways





PC+ Impacts. We examined the *impact of parenting practices on child SEL skill growth* from multiple perspectives, using both cross-sectional and longitudinal models replicated at or over each successive timepoint. Parenting practice was strongly related to child SEL skill, with statistically significant effects for both overall model fit and key cell-specific hypotheses. In the final, *full impact model*, the emergence of an optimal *parenting quality by child SEL skill* configuration from Time 1 to Time 2 appeared to cause an additional 20% of children to experience SEL skill growth from Time 1 to Time 4 (compared to children who did not experience the emergence of an optimal parent-child configuration).

The *full impact* model represents our best effort to model the developmental dynamics that are explicit in the PC+ intervention design: The most enduring impact of parenting practices on child development should occur when parents and children are working together at the highest possible levels of functioning. Parent-child dyads characterized by close fit (e.g., high-quality parenting matched with strong child SEL skills) should have stronger effects on child development than dyads characterized by a misfit between parenting quality and child SEL skills (e.g., high-quality parenting matched with weaker child SEL skills).



The concept of high-quality parenting practices and their effects on healthy child development reflects a long history of *person-in-context* models of human development emphasizing the calibration of socialization environments to the current skill levels of participating children. The basic idea is that children's learning is best promoted by caregivers scaffolding task demands that are slightly beyond what children can do on their own but that are nevertheless manageable by children where they are well-supported by responsive, empathetic caregivers.

Given that the PC+ program intervention is focused on building parent and child SEL skills simultaneously, we attempted to capture the simultaneous influences of the home visitors on both parents and children by constructing a predictor variable that reflected the T1 to T2 growth in parent-child dyads, or the extent to which optimal parent-child configurations emerged between T1 and T2. We then used this T1-T2 Parent-Child Configuration Pathway variable to test the full impact hypothesis that children's T1 to T4 SEL skill growth is influenced most strongly by the optimal parent-child configurations that emerge from T1 to T2.

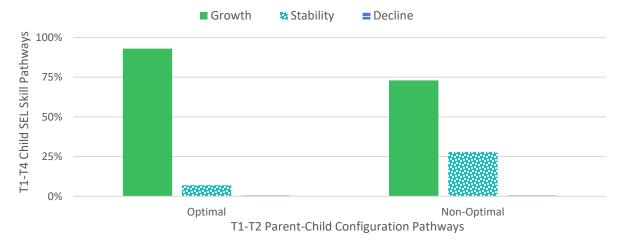


Figure 7. The Impact of T1-T2 Parent-Child Configuration Pathways on T1-T4 Child SEL Skill Growth

As shown in Figure 7, children who experienced the emergence of optimal configurations of parenting quality and SEL skill by T2 demonstrated substantially more T1-T4 SEL skill growth than children who did not experience the emergence of an optimal configuration, with statistically significant effects for both overall model fit and key cell-specific hypotheses. For example, most of the children (i.e., 93%) in households characterized by an optimal T1-T2 parent-child configuration pathway experienced T1-T4 SEL skill growth. In contrast, fewer of the children (i.e., 73%) in households characterized by a non-optimal T1-T2 parent-child configuration pathway experienced T1-T4 SEL skill growth.

III. PC+ appeared to produce equity effects for both the lowest- and highest-skilled children.

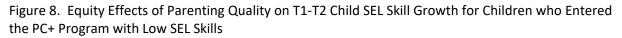
Participation in PC+ appeared to cause children who entered the program with lower SEL skills to grow at rates similar to the rest of sample. The PC+ program also appeared to support equitable outcomes for the most highly-skilled children, who were able to grow from the "high" skill profile to an emergent "exemplary" skill profile.

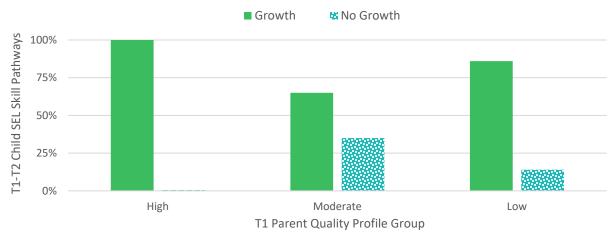
Figure 8 shows *equity effects* by describing the impact of parenting quality and children's SEL skill growth pathways for *only* those children characterized by a T1 low-skill SEL profile. These results indicate that children who entered the PC+ program with lower SEL skill more frequently experienced



growth when exposed to high-quality parenting, with statistically significant effects for both overall model fit and key cell-specific hypotheses. In addition, children with lower SEL at baseline also grew at rates similar to their higher-skill peers. In other words, children who enter the program with lower SEL skills experience an equity effect: less-skilled children respond to PC+ parenting practices and experience SEL growth at rates similar to their higher-skilled peers.

The PC+ program also appears to have supported equitable outcomes for the most highly-skilled participants. For example, the Exemplary profile for both parenting quality and child SEL skill emerged at T2 and, by T4, included 54% of the parents and 31% of the children. These results suggest that the PC+ program produced equity effects – that is, similar or better rates of growth despite different SEL histories – for both the lowest- and highest-skilled children.





Discussion

Two-Generation Programs Make Strategic Sense in Newark.

The NTE PC+ program is a good fit for the cohort of families recruited to receive it. As Figures 1 and 3 demonstrate, parents and children are distributed across a wide range of SEL practice quality and skill profiles, and these profiles reflect a diverse mix of strengths and opportunities for growth. In addition, most of the parents and children in the recruited cohort did in fact experience growth during the course of the intervention, leading to the question: Did the PC+ program cause the growth that our measures and analyses describe?

The PC+ evaluation findings describe an impact pattern in the data that suggests that PC+ has a strong effect on parent and child skills, both of which grew substantially, and simultaneously, during the intervention period. In the final impact models, several impact patterns were supported by statistically significant effects, even where considering the potential confounding effects of children's age and parents' language status. For examples: (1) When parent-child dyads moved to an optimal quality-skill configuration during the first third of the PC+ intervention, an additional 20% of children demonstrated sustained SEL skill gains over the entire intervention period. This means that when parent and child skills get a "bump" from the PC+ home visitor, children's skills grow. (2) When children in the lowest profile of SEL skill were exposed to high-quality parenting, their SEL skills grew at rates similar to their higher-skilled peers. This means that the PC+ theory of change is also working for the most vulnerable children in the cohort. (3) Children who entered the PC+ program with high SEL skills sustained and



grew those skills when exposed to higher-quality parenting. This means that PC+ didn't put a ceiling on the relatively more skilled children but facilitated their SEL skill growth too.

Additional findings from more basic impact models also produced statistically significant findings: (4) Parenting quality was strongly related to child SEL skill at each timepoint, and parenting quality growth was related to child SEL skill growth across all timepoints. (5) Home visitor direct impact on child skill growth also occurred in the relatively rare households where parenting quality skills were in decline. This means that PC+ home visitors were able to support child development during moments of parental difficulty.

Findings Support Continuous Quality Improvement (CQI).

In addition to this Executive Summary of the study findings, additional tools were created to support NTE home visitors in their own CQI process. These tools translate from clear definitions of the meaning of each measure to clear interpretations of the profile shapes presented in Figures 1 and 3 (i.e., to the observable patterns of behavior characterizing holistic Parenting Practice Quality and Child SEL Skill profiles).

Recommendations.

Our primary recommendation is to develop better measures. Improved measures of child SEL skills, parenting practice quality, and PC+ implementation fidelity will serve the interests of both families in Newark and the wider field of organizations doing similar work. The power to detect program effects, do effective internal CQI, and be accountable in a way that feels fair is related to the precision and meaningfulness of the measures.

A second recommendation flows from the pattern of findings and their meaning for internal CQI use. The NTE PC+ Curriculum should be adapted for parents who struggle with best parenting practices at T2 or after. One of the primary avenues to reaching the one third of parents who never attained optimal parenting practice profiles is to develop strategies to increase the engagement of these parents with the services offered by the PC+ program. These strategies may be unique to Newark and may also be unique to the situations of families from specific cultural/language groups.

Finally, the PC+ program presents an overall impact pattern that suggests both a strong relation between parenting quality and child SEL skills and an effect of home visitors on both parenting quality and child SEL skills. To fully demonstrate the impact of the NTE PC+ program, we recommend including a small, no-program (aka, control group) sample of parents and children in a future study.

Study Strengths and Limitations.

The study design and methods provided for a quasi-experimental evaluation of the pattern of impact indicated by the data. There are several reasons why these data should be trusted for inferences about impact: First, measures were constructed from a valid theoretical perspective on SEL, and profiles constructed from these measures were validated using data from parents. Second, the pattern-centered findings present an integrated and tangible picture of the parents, children, and their multiple skills (e.g., "whole child"), making the findings logically generalizable to other places and settings that have similar situations, people, and purposes.

Finally, the research design increases inferential power through the identification of a cascade of causal connections; that is, from (a) PC+ implementation fidelity, through (b) improvements in the quality of parenting practices which, in turn, cause changes in (c) children's socio-emotional skills that,



ultimately, (d) transfer to other settings, causing desired outcomes such as school readiness and early literacy (Smith et al., 2019). Because the QDM approach allows us to test fit simultaneously for models at multiple moments in the causal cascade, the power of inference about impact is increased.

Limitations of the study are primarily related to (a) measurement items that are prone to receiving very high scores, making it more difficult to detect and model change processes, (b) the absence of well-developed, valid implementation measures, and (c) having no access to a no-program control group that would help show the unique and powerful effects of the NTE PC+ home visitor program on promoting the growth of both parenting practice quality and children's SEL skills.

