CENTER *for* URBAN EDUCATION LEADERSHIP

# The Ounce PDI Study

## Executive Summary

## Development Evaluation of a Job-Embedded Professional Development Initiative for Early Childhood Professionals

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# Table of Contents



## List of Tables



## List of Figures

# Introduction

The Ounce of Prevention Fund (the Ounce) is among the premier organizations in the United States committed to the expansion and improvement of educational services for children and their families in the early childhood years. A central commitment of the Ounce is to explore and codify models of job-embedded professional development that can be implemented in community-based ECE settings, and by extension, help improve the life chances of children living in high-needs communities across the United States (Yazejian et al., 2013; Educare Learning Network, 2014). In fall 2011, the Ounce was awarded a 3-year "i3" (or, Investing in Innovation) development grant from the US Department of Education to accelerate the design of an embedded professional development (PD) framework for community-based urban ECE centers. Implementation of the Ounce Professional Development Initiative (PDI) occurred from January 2012 to November 2014, targeting four representative community-based ECE centers in the City of Chicago.

The Ounce designated the Center for Urban Education Leadership (CUEL) at the University of Illinois at Chicago (UIC) as its external evaluation partner (required by the i3 program). CUEL focuses primarily on policy and program design research in the area of K-12 principal preparation and leadership development. The Ounce and the CUEL share a common understanding that decisive and sustainable improvements in instructional capacity involve the development not simply of individual teacher practices, but also the capacities to support teacher development at all levels of the school as an organization. In addition, the two organizations are committed to enhancing the power of job-embedded PD through the application of design and development research methodologies. Both the Ounce and CUEL share a stake in learning how to build information systems around improvement efforts in ways that enable timely adjustments to PD design elements. For the CUEL evaluation team, this has meant striking a productive balance between the roles of independent summative evaluator and collaborative formative evaluator providing data that informs the design development process.

This report summarizes the evaluation findings from the implementation and impact study of the i3 PDI development project. We begin by introducing the context for the PDI and the logic model guiding the development strategy. Next, we provide the study questions and an overview of the design as well as the participant sample. We then summarize the findings from the fidelity of implementation and impact studies. Lastly, we offer conclusions and recommendations for future research.

## Early Childhood Education at a Crossroads: The Context for the PDI

For advocates and educators who have championed the importance of early childhood education in recent years, it is no exaggeration to claim that the current decade is at once the best and the worst of times. On the one hand, a wealth of well-validated data has been assembled to effectively argue both for the impact of high quality ECE on children's lives and for the return on investment of ECE in both economic and social terms. These concerted arguments to invest significantly in ECE have in turn garnered unprecedented levels of funding to develop effective systems of monitoring instructional quality and expand PD opportunities for early childhood professionals (Yoshikawa et al., 2013). But while resources and public will for improvement have expanded, ECE as a sector continues to face formidable obstacles to the sustained "uptake" of PD and organizational capacity initiatives. Education levels among early childhood educators are the lowest across all sectors of American schooling and are mirrored in the

lowest compensation rates and highest poverty levels among the country's teachers. High levels of teacher turnover, burnout, depression, and attrition are endemic to community-based ECE centers, and most pronounced in centers located in under-served and minority communities. While Head Start and allied state and local funding regimes have undeniably established professional supports and quality standards, they also present center leaders with a bewildering array of regulatory requirements and institutional affiliations, leading rather inevitably to professional cultures of compliance and risk-aversion. For center leaders and supervisors, managing regulatory and quality assessment regimes can become a full-time pre-occupation, leaving little time for attention to instructional quality and engagement with families (Goffin & Washington, 2007; Rohacek et al., 2012). Taken together, these constraints on local capacity pose a serious challenge to efforts to transform early childhood centers into self-sustaining professional learning organizations.

As a seasoned policy advocate and research organization, the Ounce of Prevention is well acquainted with both the ubiquity and severity of constraints on instructional improvement within the early childhood sector. As such, understanding of the dynamics of improvement sought through research on collaborative continuous quality improvement efforts informed the logic guiding the PDI model. In particular, the PDI model is grounded in over two decades of evidence from K-12 programs that indicate schools can organize themselves to improve the quality of instruction at scale—even schools engaged with the challenges faced by low-income families in underserved communities (Bryk et al., 2010). A common denominator in such schools is the exercise of leadership to create conditions and systems for teachers to build craft and knowledge together, on the school site, based upon consistently applied protocols and norms for PD (Elmore, 2004; Leithwood et al., 2011). These and related lines of research form a foundation for the ambitious design for center-wide organizational development advanced in the PDI.

## PDI Logic Model

The PDI aims to build ECE leaders' systemic support of birth-to-five teachers' capacity to design and deliver standards-aligned, data-driven instruction, toward the long-term goal of closing the achievement gap for high-needs students in Chicago. Through four core job-embedded PD strategies or "contexts for learning" (i.e., Learning Labs, Lesson Planning Meetings, Coaching Cycles, and Reflective Practice Groups (RPGs)), the PDI supports ECE leaders' ability to provide organizational systems and cultures to enhance teachers' instructional excellence. In particular, the PDI scaffolds the ECE leaders' capacity to support ECE teachers' transition to a teaching approach that: (a) aligns their curriculum, instruction, and assessment practices to the IELS' and core curriculum and development goals for infants, toddlers, and preschoolers; and (b) employs routines of collaboration and protocol informed inquiry cycles within teaching teams in an effort to encourage reflection intended to improve decision-making so that they provide high-needs children with evidence-based interactions that are socially supportive, organized, and instructionally challenging.

To this end, the PDI also develops the knowledge, skills, and capacity of PDI Coaches, who are charged with rigorously implementing the PDI, making model-informed decisions when contemplating adaptations in the course of PD delivery, and working with the project team and evaluators to inform ongoing development of the PD design and implementation. By aligning the professional learning cycles of these four key stakeholders – center leaders, direct supervisors, teachers, and coaches – early learning settings are poised to realize significantly improved standards-aligned instruction in the classroom, leading to better results for young high-needs children over time.

## Evaluation Goals

The purpose of the 3-year evaluation study was to assess the effectiveness of the Ounce PDI in advancing the knowledge, skills, and dispositions of community-based early childhood leaders and teachers in relation to creating the conditions for superior developmental outcomes and kindergarten readiness for low-income, under-served students served by these community-based centers. Therefore, the evaluation pursued three broad goals: First, we intended to monitor and summarize patterns of implementation over the full span of the PDI in order to assess fidelity and feasibility of implementation. Second, we aimed to assess impacts of implementation on the professional learning of teachers, leaders, and coaches, and more distally, upon the growth and development of children in all intervention centers. Third, drawing on Improvement Sciences methodology, we planned to strike a productive balance between the roles of independent, external summative evaluator and collaborative formative evaluator providing rich and timely data and feedback to the design development process.

### Guiding Research Questions

1. Overall, was the PDI activity implemented with fidelity as the designers intended? Was the PDI activity engaged and received by the participants as intended? How feasible is the implementation of the Ounce PDI in diverse community-based provider settings and contexts?
2. Was the information processed and understood (i.e. learned) by leaders and teachers as a result of their participation in the PDI?
3. Does the PDI produce a significant increase after two years of implementation in the social-emotional development, language and communication development, and cognitive development of students in the classrooms of PDI-involved teachers compared to outcomes of students in comparison teachers' classrooms?

### Research Design

We employed a mixed methods approach to the design of our study. For the implementation study we measured fidelity for six key components of the PDI model. For the impact study, a quasi-experimental design was used to test impacts for both students and classroom teachers for the intervention and comparison conditions.

### Implementation Study Sample

Participants for this study included 15 predominantly female community-based early childhood leaders of color (i.e. center owners, directors, and direct supervisors) who supported 60 predominantly female Black and Latino teachers in four community based early childhood centers serving approximately 600 low-income families and children of color in the City of Chicago. Centers were selected by the Ounce through an application process that required center leaders to demonstrate the interest of leaders and teachers in undertaking a demanding JEPD process. Analyses indicated that the four centers selected for the study were demographically representative of Head Start centers located in high needs communities in Chicago.

### Impact Study Sample

Several criteria were initially applied to select a cadre of non-PDI comparison centers for use in the classroom practice and student developmental impact analyses. First, all comparison centers had to be located within the city of Chicago. Second, comparison centers were restricted to a pool of centers receiving both Head Start and Chicago Public School funding. Third, in the case of the one not-for-profit (NFP) intervention center, matches also were required to have Early Head Start funding to assure parity in overall budgets within the NFP comparison group. The comparison site selection process yielded a pool of 45 Chicago comparison centers including four intervention centers (or five intervention locations, as one intervention center included two distinct locations) and a pool of 40 comparison sites.

# Findings

## Fidelity of Implementation

Overall, our evidence indicates that the key components were implemented as intended and that ECE leaders, teachers, and coaches successfully engaged with intensive, job-embedded PD, as indicated by meeting fidelity at the program level overall. Fidelity of implementation for the indicators related to coach development was consistently high and met thresholds in all years, as the eight-coach cadre consisted of highly experienced professionals who were deeply committed to program quality improvement. Variation in implementation and attendance for leaders and teachers was more evident. Several contextual factors help us understand why this variation occurred in the initial phase of implementation, which resulted in falling short of fidelity thresholds for two of the six components in Year 2. However, evidence presented in *Table 1* suggests that once these factors were addressed, fidelity to the model improved during full implementation in Year 3.

| | **Year 2** | | **Year 3** | |
|---|---|---|---|---|
| **Key Component** | *Component Score* | *Implemented with Fidelity** | *Component Score* | *Implemented with Fidelity** |
| 1. Coach Community of Practice | 100% | **Yes** | 100% | **Yes** |
| 2. PDI Implementation | 50% | No | 75% | **Yes** |
| 3. Coach Professional Development | 100% | **Yes** | 100% | **Yes** |
| 4. Teacher Professional Development | 100% | **Yes** | 100% | **Yes** |
| 5. Direct Supervisor Professional Development | 0% | No | 100% | **Yes** |
| 6. Center Leader Professional Development | 75% | **Yes** | 100% | **Yes** |

* *More than 75% of centers implemented component with fidelity in order to meet overall program fidelity*

*Table 1 Component Level Fidelity of Implementation Findings for Years 2 and 3*

Analyses also indicated that the measures of PDI engagement for direct supervisors and center leaders received the lowest levels of fidelity and therefore no points for that indicator were awarded as seen in *Table 2* and *Table 3*. When rolled up in the total score, it was these measures that created the greatest barriers to achieving overall fidelity on that key component during Year 2 of implementation. Meeting expected levels of fidelity for Key Component 2 is challenging, in general because it requires that centers can swiftly develop systems that embed routines for collaboration into the daily operations of the center. This can raise several questions for leaders including how to coordinate meetings in relation to other required meetings and how to provide coverage for teachers so that they are able to meet together.

| ***Key Component 2 Indicator PDI Implementation:*** | **Center 1** | **Center 2** | **Center 3** | **Center 4** |
|---|---|---|---|---|
| *For Teachers* | **Mid** | **Mid** | **Mid** | **Mid** |
| *For Teachers in a compressed timeframe* | **Mid** | High | High | High |
| *Of consultation contexts for direct supervisors* | **Low** | High | High | High |
| *Of consultation contexts for direct supervisors in a compressed timeframe* | **Low** | High | High | **Low** |
| *For direct supervisors and center leaders* | High | High | High | High |
| *For direct supervisors and center leaders in a compressed timeframe* | High | High | High | High |
| *Of consultation contexts for center leaders* | High | High | High | High |
| *Of consultation contexts for center leaders in a compressed timeframe* | **Low** | High | High | High |

*Table 2 Key Component 2 Indicator Construct-Level Rating in Year 2*

| ***Key Component 5 Indicator Direct Supervisor:*** | **Center 1** | **Center 2** | **Center 3** | **Center 4** |
|---|---|---|---|---|
| *Attendance to PDI contexts for learning for center leaders* | **Mid** | **Mid** | **Mid** | **Mid** |
| *Attendance to embedded PDI contexts for learning for teachers* | **Low** | **Low** | **Low** | **Low** |
| *Attendance to the consultation contexts for direct supervisors* | **Mid** | **Mid** | **Mid** | **Mid** |
| *Advancement of knowledge* | High | High | High | High |

*Table 3 Key Component 5 Indicator Construct-Level Rating in Year 2*

Because the PDI logic model expects direct supervisors to be most engaged in sustaining embedded PD for teachers beyond the grant period, they were the focus of additional fidelity measures. Specifically, the PDI expected direct supervisors to attend the lesson-planning meeting for one teaching team per month and the teacher RPG every other month in order to observe the way in which the PDI coach facilitated such sessions. It is plausible that the presence of coaches in settings like lesson planning prompted a degree of role confusion for direct supervisors in relation to their supervised teachers. However, when the expectations became clearer at the beginning of Year 3, the cadre of direct supervisors increased their fidelity to the model's intended thresholds for engagement in the contexts for learning for teachers.

## Leader Growth

We evaluated evidence regarding whether center directors and supervisors actually accomplished the kinds of conceptual growth intended by the PDI design for leader learning. Our analysis on balance indicated that the PDI leader learning cycles were successful in supporting the majority of center leaders to critically examine their current leadership conceptions and grapple authentically with a challenging set of new leadership principles. The PDI learning experiences appeared especially effective in broadening narrow "transactional" leadership frames to include the more inclusive and ambitious mindsets associated with a "transformational" leadership repertoire (Donaldson, 2008; Leithwood et al., 2011).

Three features of the PDI design emerged as particularly catalytic for leader professional development. First, there was an exceptional synergy between the curricular focus of the PDI – and especially the transaction between the Five Essentials Framework and the Classroom Assessment Scoring System (CLASS) assessment – and the two-month cycle of learning labs, on-site consultations, and reflective practice groups. Both the 5 Essential Supports and the CLASS provided leaders with the kind of "optimal" cognitive stretch that was sufficient to initiate the deconstruction of entrenched ideas and mindsets. Second, embeddedness of leader learning within the teacher learning cycles created weekly opportunities for leaders to translate new principles into keener instructional observation, stretch their comfort zones in areas like generative questioning and data dialogue, and receive regular feedback regarding their efforts from their coaches. Third, for leaders whose daily professional experience is often limited to their center buildings, the cross-site learning labs and reflective practice sessions provided a welcome venue both for collaborative learning and professional encouragement. A supportive cross-site professional learning community did cohere with time to become both a safe zone and a stretch zone, in which directors and direct supervisors could remake their practices and their leader identities.

## Teacher Growth

We assessed whether the contexts for learning for teachers (i.e. Learning Labs, Lesson Planning Meetings, Coaching Cycles, and Reflective Practice Groups (RPGs)) advanced teacher knowledge, skills, and dispositions as intended by the PDI. Although variation occurred in terms of depth of advancement, the evidence suggests that the PDI did help the teachers develop a more accurate, coherent, and comprehensive pedagogical narrative. The PDI was particularly effective in strengthening the teacher's

ability to be more intentional or "to act purposefully with a goal in mind and a plan for accomplishing it" (Epstein, 2007, p. 4). The PDI feature of routines for collaboration (i.e. teaching team lesson planning meetings and age-level reflective practice groups, specifically) was most essential for teacher professional development.

We assessed change in teachers' classroom practice through direct observations using the age-appropriate Classroom Assessment Scoring System (CLASS) tool conducted by reliable CLASS assessors. Although qualitative evidence points to the PDI advancing the teachers' pedagogical knowledge and dispositions, a linear regression analysis employed to measure PDI's impact on PreK classroom practice found no difference between PDI centers (N=4) and comparison centers (N=12) from pre-intervention to post-intervention scores. Additionally, a repeated measure analysis of variance was employed to assess whether CLASS scores within the PDI centers improved significantly over the intervention period years 2013, 2014, and 2015 for toddler and PreK classrooms, respectively. No statistically significant trends emerged, in part due to small sample sizes and low statistical power. An examination of trends in average social-emotional and organizational support domain scores did suggest an improvement trend at the infant, toddler, and PreK levels. From another angle, the percent of infant, toddler, and PreK classrooms providing mid-to-high levels of instructional practice also appeared to increase (from 0% in 2013, to 67% in 2014, and 76% in 2015). We find that further study is warranted to assess whether these trends prove significant in a larger sample of ECE classrooms.

## Child Impact Results

The impact of the PDI model was assessed using students' performance measures on the GOLD Teaching Strategies measures in Social and Emotional, Language, Cognitive, Literacy, and Mathematics subscales. A sub-population of children was assessed on the GOLD English Language Acquisition objectives. Children ranged in categories of infant, toddler, and PreK age groups. Baseline measures were collected in fall 2012, quarterly progress checkpoints occurred between winter 2012 and winter 2014, and the final impact measures were collected in spring 2014. A quasi-experimental pre/post design using hierarchical linear models was applied to measure the PDI model impact effect for both one-year and two-year child cohorts (N=1,162) to determine if there was a significant difference in adjusted mean scores at the end of the intervention period accounting for the children's age-standardized baseline measures, child level characteristics, and center level characteristics. Children enrolled in intervention centers for either one or two academic years were included in the sample to assess if there was an incremental intervention effect if children were enrolled in PDI intervention centers for a longer period of time The results for the GOLD domain measures and the GOLD English Language Acquisition composite scale indicated that the PDI model did not have a significant effect on the children's learning and development. We did not detect any significant interaction effects of the PDI on post-intervention scores for children enrolled in PDI centers for two-years versus one year.

However, as seen in *Figure 1*, a comparative time-series analysis aimed at assessing the impact of the PDI model on children with greater exposure to the PDI yielded a statistically significant PDI effect in average growth rates in children's Social and Emotional Learning and Development. Specifically, longitudinal hierarchical linear growth models were applied to determine if there was a significant difference between the rates of learning and development on the GOLD Social and Emotional, Language, Cognitive, Literacy, and Mathematics learning between children in PDI centers and comparison center peers with

two full years of ECE enrollment. The PDI model intervention lessened the gap in child social emotional development between the intervention and comparison center children with a medium effect size ($\delta$ = .60, p < .05). This impact does comport with the intervention's focus on improving the quality of social and emotional interactions between teachers and students as the base for realizing further student development in the cognitive and academic learning domains.

The **PDI had a positive impact** on closing the gap in **Social Emotional Learning and Development** for those children with two years of PDI exposure.

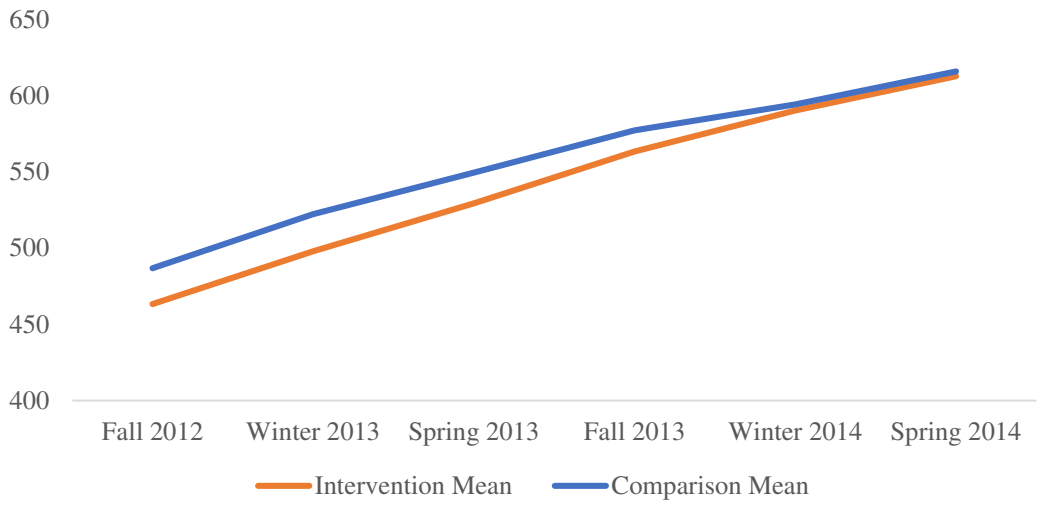


*Figure 1 GOLD Social Emotional Unadjusted Mean Growth Trajectory*

Additionally, the *Bracken School Readiness Assessment, Third Edition* (BSRA-3) was used to independently assess the school readiness of the children enrolled in the PDI centers in comparison to demographically-similar children in comparison centers. The BSRA-3 evaluates a child's understanding of 85 important foundational academic concepts children need to know in order to be prepared for early formal education. A quasi-experimental pre/post design using hierarchical linear models was applied to measure the PDI model impact effect for both one-year and two-year student cohorts (N=58) to determine if there was a significant difference in adjusted mean scores at the end of the intervention period accounting for students' baseline measures. The results for the Bracken School Readiness Assessment indicate the PDI model did not have a significant effect on the child's readiness for school in comparison to children who were interacting with teachers who did not engage in the PDI.

## Conclusions and Recommendations

The evidence warrants the conclusion that the centers were successful in implementing the PDI with fidelity. When considering all the work involved in re-organizing a center to support a concerted program of job-embedded PD, the ability to meet fidelity for the majority of the indicators is an impressive outcome of the implementation study. Meeting fidelity of implementation suggests that implementing high quality job-embedded PD is feasible in community-based early childhood centers. As such, the leaders and teachers within those centers are willing and able to overcome the many challenges that arise with intensive PD.

Although the quasi-experimental pre/post design hierarchical linear models applied to measure the PDI model impact effect for both one year and two year child cohorts did not have a significant effect on the children's development, a comparative time-series analysis for children who were exposed to the intervention for the full two year period did have a positive impact on closing the gap in the area of social emotional learning and development. Given that the PDI was designed to advance ECE teachers' pedagogical knowledge of social emotional development, these results reflect the model's effectiveness in supporting instructional practice that acknowledges that the best learning occurs within a context of supportive relationships that makes learning engaging, meaningful, and challenging (Collaborative for Academic, Social, and Emotional Learning, 2013).

Based on the body of evidence amassed over three years and our evaluation team's close acquaintance with the implementation process and the adjustments to the PDI design over time, we offer the following six recommendations for future implementations of the design.

1. ***Initiate PDI with Intensive Preparation of Center Leaders***. The PDI began with a strong commitment to the proposition that the improvement of ECE instruction is fundamentally a matter of organizational capacity, and not simply of the cumulative enhancement of individual teaching skills. This implied significant attention to the leadership capacity of centers, particularly in the domain of instructional leadership. The importance of leadership to accomplishing all elements of the PDI design became increasingly evident as the Initiative progressed. Given the considerable early adjustments in schedules, logistics, and mindsets asked of leaders by PDI, there was consensus among center directors that an intensive period of orientation and PD for center leaders prior to engaging teacher teams would have advanced the implementation of PDI with teachers, particularly in Year 1.

2. ***Prepare and Execute the Re-development of Reflective Supervision Among Direct Supervisors Earlier in the PDI Process.*** The sustainability of the PDI job-embedded PD cycles for teachers depended on a well scaffolded "hand off" of facilitative functions from the coach to direct supervisors, with sufficient time for those supervisors to gain confidence in JEPD practices. This transition did occur at all sites in the PDI pilot project, but was delayed both by the difficulty of exposing direct supervisors consistently to key practices, and to a lack of clear guidelines for coaches around how to scaffold and pace the transition. We recommend that clearer protocols for coaches and direct supervisors be developed to support an earlier and more sure-footed transition in future implementations.

3. ***Distinguish the content and functions of learning labs and reflective practice groups (RPGs) for leaders.*** The distinct formats and functions of learning labs and RPGs for teachers were distinguished clearly from an early point in the project. In the case of leaders, however, both learning labs and RPGs remained strongly focused on transmitting vital information to leaders, often using PowerPoint presentations, combined with large and small group discussion formats. Only in the last year of the project did leaders assume a more active role in setting RPG agendas and leading discussions around evidence sources linked directly to leader practice such as video. We recommend that leader RPGs shift more quickly into more active, reflective, and leader-initiated patterns in future implementations in order to elevate the distinct and intended impacts of RPGs within the PDI design.

4. ***Don't under-estimate the challenges of equipping coaches to facilitate comprehensive JEPD***. The Ounce designers anticipated several of the transformations in behavior and mindset that the PDI would require of coaches. In response, they facilitated the regular convening of coaches in professional learning formats to involve them as active collaborators in developing training content and to reflect on problems of practice in the field. Coaches generally affirmed the value of their professional learning community sessions. That said, and even with training in skill sets like Motivational Interviewing, considerable time was required to equip coaches with the lexicon and concepts of the 5 Essential Supports and (for some coaches) the CLASS. Coaches were also more accustomed to "supportive" than "challenging" modes of discourse with teachers, and were generally uncomfortable with coaching center directors. Similar to leaders, we recommend that reflective practice sessions for coaches develop clearer protocols to guide coach discussion of difficult problems of practice, making greater use of rich and direct evidence sources such as audio and video. Limited use of these resources in the PDI pilot evinced great promise for shifting coach mindsets and skill sets.

5. ***Don't under-estimate the experience of "overwhelm" in the first phase of comprehensive JEPD***. The evaluation produced encouraging findings that representative ECE teachers and leaders in Head Start settings have both the capacity and willingness to grapple with complex developmental concepts, and will translate these concepts into improved practice when scaffolded skillfully. This willingness did not prevent leaders and teachers from experiencing significant stress and fatigue early in the project as the intensity of the PDI curriculum and the frequent presence of coaches as observers became evident. While this "overwhelm" should be addressed wherever possible through design adjustments as recommended here, we believe that some level of early stress is endemic to the PDI's ambitious transformational agenda. Because the evaluation provides evidence that the phase of stress does give way to professional growth and confidence, we recommend that leaders and teachers be more effectively oriented to what to expect from the change process at the outset of this approach to JEPD.

6. ***Permit greater flexibility in the scheduling of coaching sessions to moderate the physical presence of coaches and maximize the impact of coach observations***. The evaluation documented the development of generally warm and professionally productive relationships between coaches and teachers at all four intervention centers. Teachers grew attached to their coaches in productive ways and looked forward to PD sessions. However, teachers also were critical when coaching schedules separated the days for varied functions such as lesson planning, observation sessions, and reflective feedback. Such separation created the feeling that the coaches were a ubiquitous presence, while reducing the benefits of rapid feedback to on-site observations. We therefore recommend that coaching schedules be aligned to teacher schedules in ways that link varied coaching functions as closely as possible in time both to maximize coaching benefits and reduce the stress on teachers associated with the presence of coaches.

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