Assessing Preschool Professionals' Learning Experiences in Ohio: What Have We Learned?

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EXECUTIVE SUMMARY

In the Assessing Preschool Professionals' Learning Experiences (APPLE) project, we partnered with ecQ-net and the Ohio Department of Education to conduct an independent evaluation of Ohio's state-sponsored language and literacy professional development for early childhood educators. Participating educators were randomly assigned to experience the state's 30-hour language and literacy professional development course, the course plus ongoing in-class coaching, or professional development on an alternative topic. Largely, the language and literacy professional development did not improve educators' knowledge, dispositions, or classroom practices, nor did it improve children's language and literacy out-comes. This may have been due to variability in implementation. Although the professional development was rated favorably, course sessions varied in the extent to which key components were implemented and educators received widely differing amounts of coaching. Overall, results caution against investing in large-scale professional development without evidence that such efforts yield intended benefits for educators and children.

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The Schoenbaum Family Center (SFC) and
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Professional development is considered a key means of providing continued training and support to inservice educators. Broadly, professional development refers to the activities (e.g., workshops, courses, in-class coaching or mentoring) in which educators engage to advance their knowledge, skills, dispositions, and classroom practices (Desimone, 2009). Research suggests that high-quality professional development can accomplish these goals (Borko, 2004) and thereby improve children's learning (Biancarosa, Bryk, & Dexter, 2010; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007).

Professional development is particularly important within the early childhood context. From a practitioner standpoint, early childhood educators represent a more diverse workforce than educators within the K-12 system (Rhodes & Huston, 2012). In general, few requirements with respect to preservice training, college degrees, teaching licenses, or other credentials are needed to work in early childhood classrooms. Moreover, there are multiple regulatory structures within early childhood and a variety of paths into the field. Professional development can thus provide on-the-job training for early childhood educators who may have widely varying levels of expertise and experiences.

From a policy standpoint, requirements to provide professional development for early childhood educators abound. Ongoing professional development is required to meet quality standards for educator preparation and program accreditation, as set by national professional organizations (e.g., National Association for the Education of Young Children, 2009). State and federal agencies often set professional development regulations for licensing and evaluating early childhood programs. In Ohio, these are established by the Ohio Department of Education and the Ohio Department of Jobs and Family Services, and many are linked to Ohio's Quality Rating and Improvement System and federal Race to the Top Early Learning Challenge Grant.

Finally, from a research standpoint, questions remain concerning the utility and effectiveness of professional development as it applies to the early childhood context. Although many studies demonstrate the promise of professional development for improving early childhood educators' knowledge, skills, and dispositions, some studies do not find these benefits (Fukkink & Lont, 2007; Markussen-Brown et al., 2017), and the active ingredients contributing to effective professional development remain unclear (Kennedy, 2016; Powell & Diamond, 2013). The evidence base is especially unclear with respect to professional development efforts that have been "scaled up" for large-scale or statewide implementation.

Recommendations

For Policymakers

- Invest in evaluations to determine whether professional development realizes intended outcomes prior to and during scale up;

- Ensure the integrity of implementation during statewide professional development efforts;

- Consider the diversity of participating educators in the design, marketing, and implementation of state-sponsored professional development;

For Practitioners

- Continue to increase knowledge, dispositions, and use of classroom practices that support young children's language and literacy development by attending professional development that adheres to research-based principles of effective professional development;

- Actively connect professional development content to personal classroom experiences, such that professional development recommendations are integrated into practice;

For Researchers

- Collaborate with policymakers to rigorously evaluate state professional development efforts;

- Conduct research to better understand the active ingredients of professional development and how these can be retained during scale-up.

Ohio's State-Sponsored Professional Development for Early Childhood Educators

The state of Ohio has continually invested in the professional development of its early childhood workforce. Beginning in 2002, the Ohio Department of Education worked with faculty at institutions of higher education in the state and the Early Childhood Quality Network (ecQ-net) to develop professional development aimed at building early childhood educators' knowledge, skills, dispositions, and classroom practices to support the emergent literacy development of young children. The professional development was titled Preschool Core for Literacy (Calabrese, 2008) and later retitled Intentional Teaching: Language and Literacy Development for All Young Children (Calabrese & McGlothlin, 2011) to better align with Ohio's Early Learning and Development standards and current research findings.

The professional development was offered as a free 10-session, 30-hour course across the state. The content was research-based and focused on supporting educators in constructing high-quality classroom literacy environments, facilitating literacy learning through play, and providing opportunities for children to build their oral language, early reading, and early writing abilities. The content and format adhered to recommendations regarding effective professional development, including those indicated in Figure 1.

To supplement the course, the state also began offering elective, complementary in-class coaching through its Teacher Leader Project. The goal of the coaching was to support educators in translating course content into classroom language and literacy practices. Both the course and the coaching were approved as options for educators to fulfill state regulations requiring a minimum number of professional development hours. Thousands of early childhood educators completed the state-sponsored professional development course, and hundreds received coaching. However, despite the reach of and considerable investments in this professional development, no data were available to document its impacts or implementation. This was the purpose of the Assessing Preschool Professionals' Learning Experiences (APPLE) project. We studied this state-sponsored language and literacy professional development with respect to participation, educator and child outcomes, and implementation.

| Provide new knowledge (e.g., content, pedagogical) | Introduce and use evidence-based practices | Create sustained learning over time | Model desired practices |

∧ Figure 1
Components of effective professional development derived from research (Bean et al., 2010; Borko, 2004; Desimone, 2009; Garet et al., 2001; Powell & Diamond, 2013; Yoon et al., 2007) and incorporated into Ohio's professional development.

The APPLE Project

In the APPLE project, we partnered with ecQ-net and the Ohio Department of Education to conduct an independent evaluation of Ohio's language and literacy professional development for early childhood educators. Across four sequential cohorts, 535 early childhood educators participated in the project. These educators were lead, co-lead, or assistant educators who directly taught preschool-aged children (i.e., 3- to 5-year olds) and agreed to complete study activities. Most were female (98%), White (78%), and non-Hispanic/Latino (82%).

Educators were randomly assigned to one of three professional development conditions: (a) language and literacy professional development – course only (henceforth labeled PD), (b) language and literacy professional development – course plus coaching (PD+), or (c) alternative state-sponsored professional development course that did not target language and literacy but was similar in duration and format (comparison). Educators participated in their assigned professional development course between September and January. For those assigned to PD+, the intent was to provide a minimum of four hours of coaching per month for the full academic year. All educators, regardless of condition, completed questionnaires in the fall to document their backgrounds, disciplinary and pedagogical knowledge concerning language and literacy development, and dispositions (i.e., beliefs about language and literacy instruction and feelings of efficacy in teaching). Educators completed the knowledge and disposition questionnaires again after finishing the professional development course (winter), at the end of the academic year (spring), and at the beginning of the subsequent academic year (fall follow-up). Educators also allowed research staff to conduct video-taped classroom observations at each of these time points, which were coded for the quantity and quality of classroom practices.

In addition, 1,953 children enrolled in these educators' classrooms participated in direct assessments for the APPLE project. Research staff assessed up to five preschool-aged children selected from each classroom using standardized measures of language, alphabet knowledge, phonological awareness, and print concepts in the fall, spring, and fall of the following academic year (fall follow-up). We also received state Kindergarten Readiness Assessment-Literacy data for a subsample of children who matriculated to public kindergarten programs (n = 605). The majority of participating children were White, non-Hispanic/Latino (72%), which is consistent with the overall population in Ohio. The socioeconomic status of participating children's families ranged. Approximately 42% of families had annual incomes of $25,000 or less; annual incomes were between $25,001 to $50,000 for 24%, between $50,001 to $75,000 for 12%, and greater than $75,001 for 22%. Maternal education levels ranged from no high school diploma (6%) to graduate degrees (12%), with 55% having a high school diploma as the highest degree, 13% having associates degrees, and 14% having bachelor's degrees. Approximately 16% of children had Individual Education Plans for special education services.

| Provide hands-on learning opportunities | Embed in real-world contexts | Allow for application to classroom practice | Differentiate for individual learners | Give feedback on implementation |

Who Participated in the State-Sponsored Professional Development?

As shown in Figure 2, educators participating in the state-sponsored professional development and the APPLE project showed great variety in their backgrounds, qualifications, and the settings in which they worked. Educators also varied in their knowledge and beliefs about children's emergent literacy development and in the quantity and quality of the early childhood experiences provided in their classrooms. These findings indicate that the professional development serves a highly diverse group of early childhood educators who are attending the same professional development offerings yet may have differing needs in terms of professional development content and delivery format (see Weber-Mayrer, Piasta, & Pelatti, 2015 for further discussion). For example, content for educators with strong qualifications and emergent literacy knowledge might need to be more advanced, focusing on specific classroom strategies to help dual-language learners or children struggling with emergent literacy concepts. Content for more novice educators might be more basic, promoting understanding of children's emergent literacy development and general practices for fostering this in classrooms. Our findings also indicate that some sectors of Ohio's early childhood workforce (e.g., home-based providers, assistant educators) may be less likely to take advantage of the state-sponsored professional development.

Figure 2 ⟩

Characteristics of state-sponsored professional development participants as assessed at the fall time point. For knowledge, beliefs, and practice scales, higher scores reflect greater knowledge, more positive beliefs, and higher quality practices. Conditions were statistically equivalent at the fall time point on all characteristics with the exception of the quantity/quality of language/literacy instruction. *Scores at fall/beginning of study. aPreliminary findings; quality of language/literacy instruction based on data from two cohorts only.

Educator Background/Qualification Characteristics			
Position type	Lead educator 66%	Co-lead educator 11%	Assistant educator 11%	Not reported 1%
Highest education level	No degree 16%	Associates 21%	Bachelors 30%	Masters+ 23%
Major in early childhood education	Yes 53%	No 47%		
Certification to teach 4-year olds	Yes 66	No 34%		
Years of early childhood teaching experience	Minimum 0	Maximum 40	Average 11	SD 7.85

Program/Setting Characteristics			
Locale	Urban 28%	Suburban 31%	Rural 33%	Not reported 8%
Type	Private 23%	Public 51%	Home-based 3%	Not reported 23%
Affiliated with Head Start	Yes 36%	No 64%		
Day length	Half-day 56%	Full-day 32%	Mixed 12%	
Classroom has dual-language learners	Yes 25%	No 75%		
Early childhood special education classroom	Yes 24%	No 76%		
National Association for the Education of Young Children accreditation	Yes 27%	No 47%	Do not know 26%	
Step-Up-to-Quality participant	Yes 50%	No 39%	Do not know 6%	Not reported 5%

Educator Knowledge*			
Disciplinary knowledge (out of 19) (Cunningham, Zibulsky, & Callahan, 2009)	Minimum 17	Maximum 60	Average 44.75	SD 6.05
Knowledge for practice (out of 70) (Neuman & Cunningham, 2009)	Minimum 3	Maximum 17	Average 12.40	SD 3.19

| Educator Beliefs*			
Self-efficacy regarding instruction (0-4) (Bandura, 1997; Justice et al., 2008)	Minimum 1.40	Maximum 4.00	Average 3.27	SD .58
Beliefs regarding evidence-based language and literacy instruction (0-4) (Hindman & Wasik, 2008)	Minimum 1.53	Maximum 2.97	Average 2.44	SD .25

Educator Practice*			
General instructional quality (0-7) (Classroom Assessment Scoring System; Pianta, La Paro, & Hamre, 2006)	Minimum 1.00	Maximum 5.33	Average 2.24	SD 0.64
Quantity of language/literacy instruction (in minutes)[a] (Individualizing Student Instruction coding scheme; Connor et al., 2009; Pelatti, Piasta, Justice, & O'Connell, 2014)	Minimum 0.00	Maximum 50.01	Average 14.38	SD 9.45
Quality of language/literacy instruction (0-4)[a] (Teacher Behavior Rating Scale; Assel, Landry, & Swank, 2008)	Minimum 0.25	Maximum 2.38	Average 1.46	SD 0.33

Do Educators' Knowledge, Dispositions, or Practices Change?
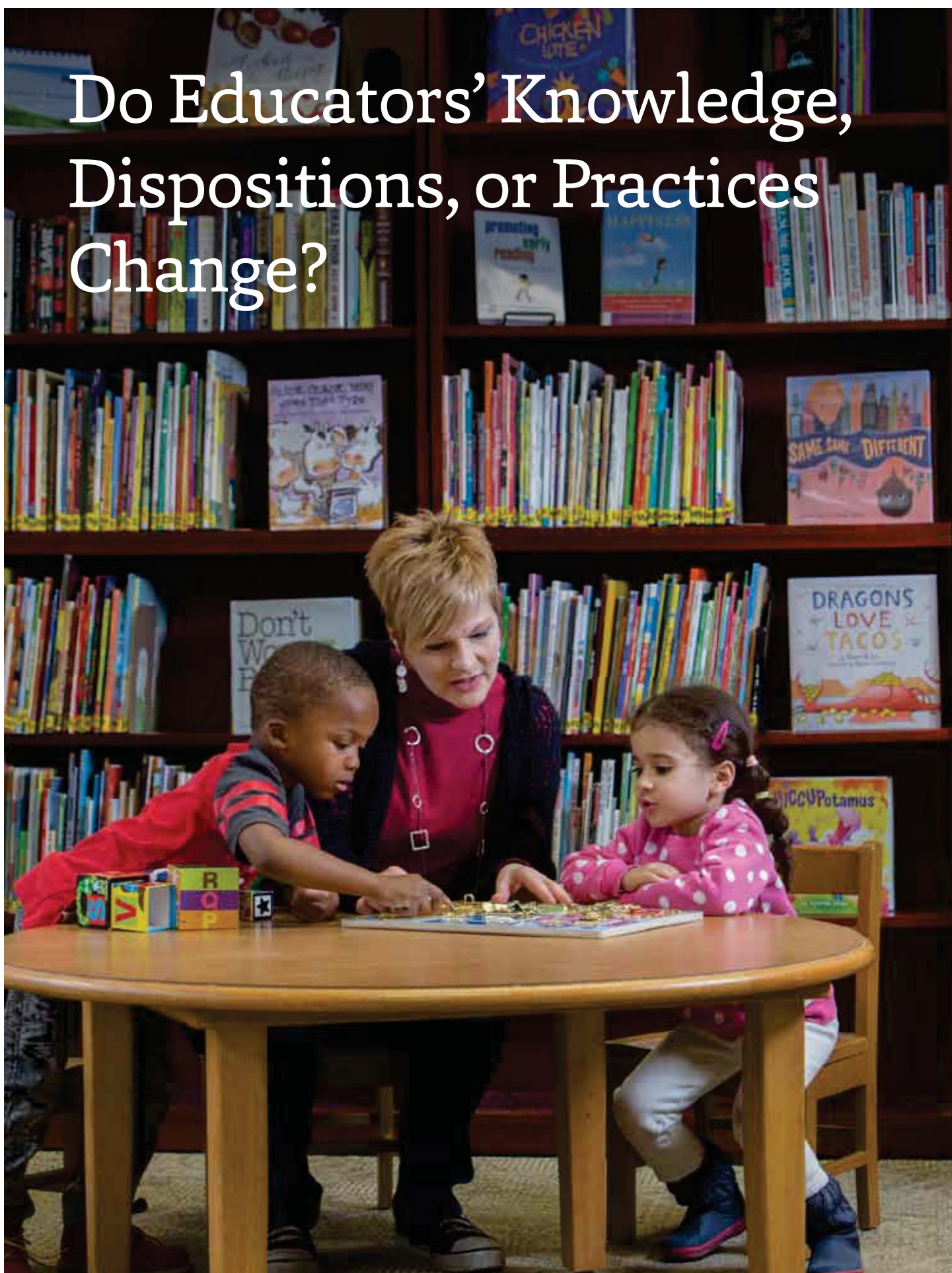
Ohio's state-sponsored professional development was intended to impact educators' language- and literacy-related knowledge, dispositions, and classroom practices. We measured educators' knowledge of content directly taught during the professional development (proximal knowledge), oral and written language structure (disciplinary knowledge), and children's language and literacy development and associated pedagogical practices (knowledge for practice). Educators did not show change in these knowledge outcomes over time; on average, educators exhibited the same levels of knowledge at all four time points and regardless of whether they were assigned to the PD, PD+, or comparison condition (Piasta et al., in press).

Educators did change their dispositions and general classroom practices over time but this was not affected by the professional development experienced (Piasta et al., in press). Regardless of condition (PD, PD+, or comparison), all educators tended to have more positive beliefs about language and literacy instruction and increase their feelings of efficacy in teaching from fall to spring, although both beliefs and efficacy decreased by fall follow-up (see Figure 3). This same pattern, with no differences among conditions, also held when measuring the quality of the classroom literacy environment (e.g., presence and use of print and literacy-related materials in the classroom). The general instructional quality provided in educators' classrooms decreased from fall to spring and slightly increased by fall follow-up. Again, educators assigned to PD, PD+, or comparison did not differ from one another in instructional quality. Thus, the state-sponsored professional development did not impact any of these educator outcomes.

The research team also coded the quantity and quality of language and literacy instruction that educators provided in their classrooms. Preliminary results suggest that the state-sponsored language and literacy professional development may have improved instruction in a few specific areas: (a) the overall quantity of language and literacy instruction provided in classrooms of educators who participated in PD+, (b) the quantity of phonological awareness instruction provided in classrooms of educators who participated in PD or PD+, and (c) the quality of instruction during shared book reading provided in classrooms of educators who participated in PD. The professional development did not appear to impact the quantity or quality of classroom practices related to oral language, print and letter knowledge, or writing, nor did it increase the quality of phonological awareness instruction, the quantity of shared book reading, or the overall quality of language and literacy instruction.
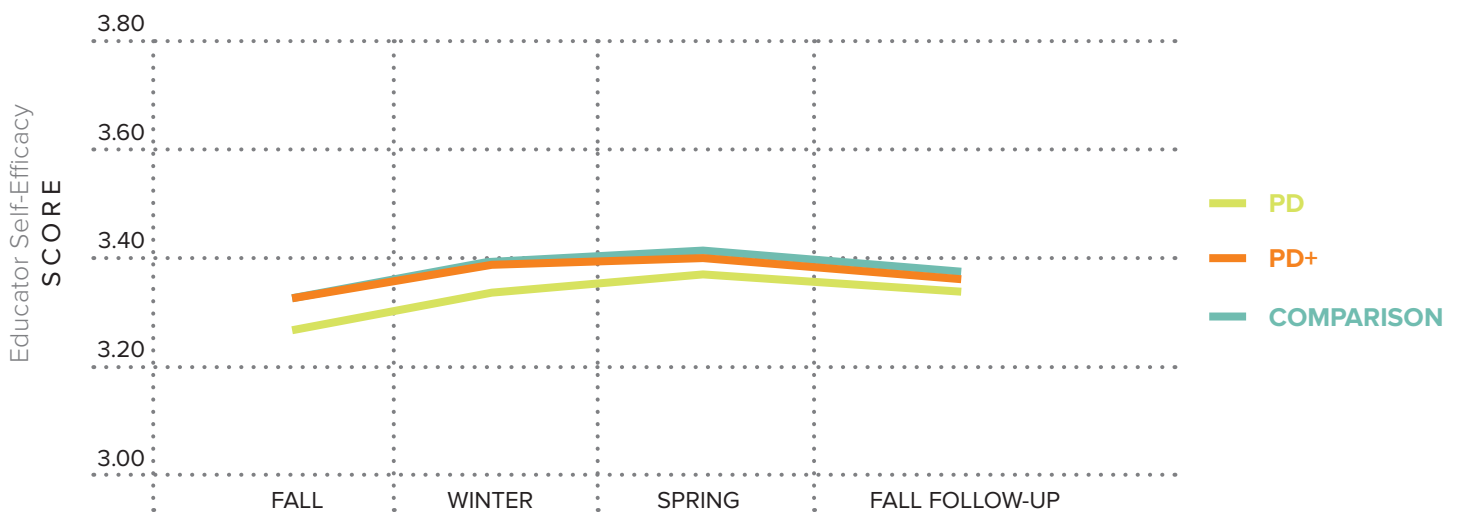

∧ Figure 3
General pattern in educators' change in self-efficacy across PD, PD+, and comparison conditions (fitted growth curve). The same pattern also held for educators' literacy beliefs and the quality of the literacy environment. No significant differences across conditions.
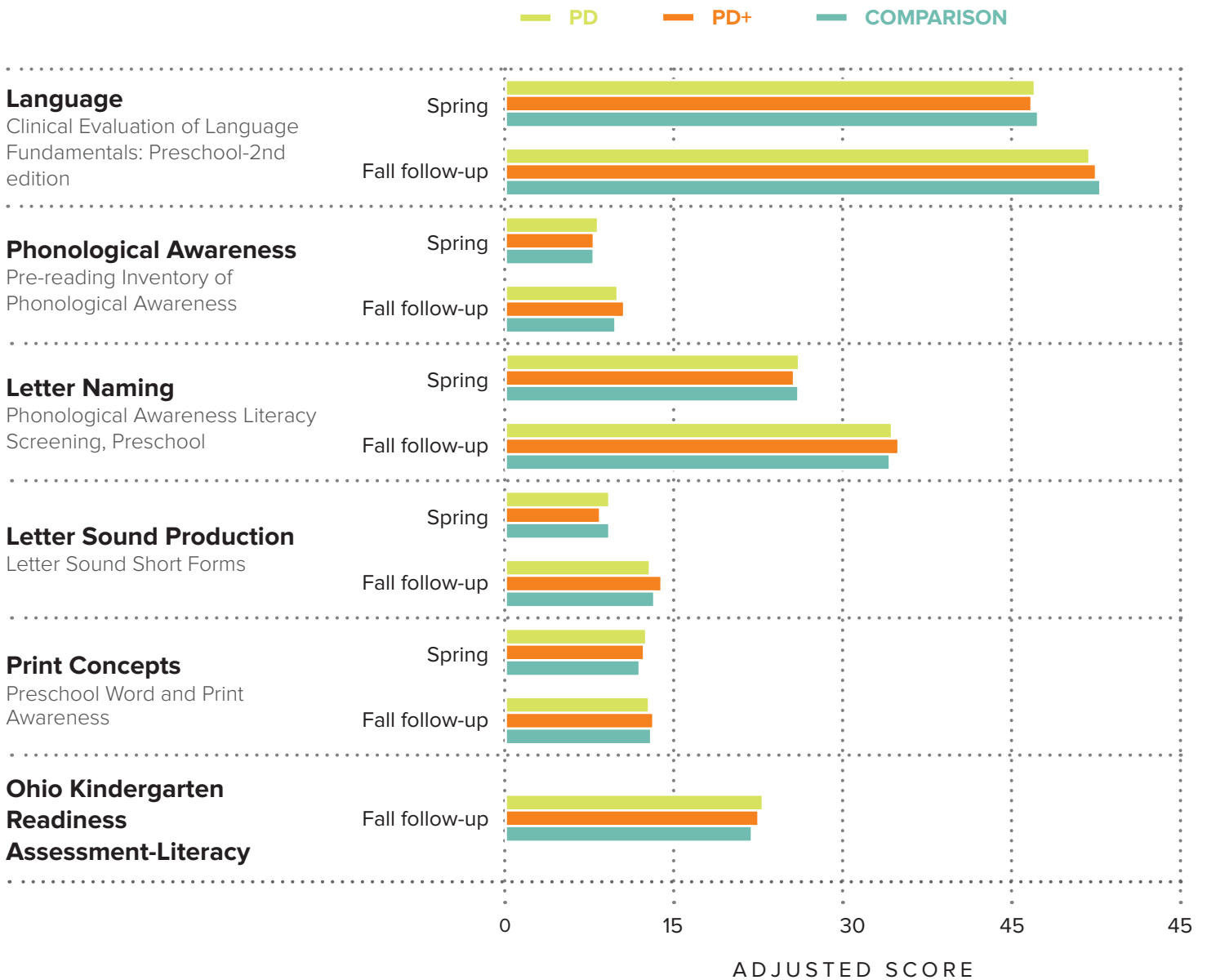
Do Children's Outcomes Improve?

Ohio's state-sponsored professional development was intended to improve children's language and emergent literacy outcomes. Figure 4 shows the average spring and fall follow-up scores for children whose educators participated in PD, PD+, or comparison condition. These scores control for children's initial scores in the fall of preschool as well as age, maternal education level, and general classroom quality. Children's outcomes were similar regardless of condition. The only detectable difference was a slight advantage for children whose educators experienced PD (but not those experiencing PD+) on word and print awareness in the spring; this difference did not hold after accounting for the large number of statistical comparisons made and disappeared by fall follow-up. Across all outcomes and data collection points, scores for children whose educators were in the PD or PD+ condition differed by less than 0.13 of a standard deviation from those in the comparison condition. This is unsurprising, given that the impacts of professional development on educator outcomes were minimal.

Figure 4

Children's spring and fall follow-up language and literacy outcomes across PD, PD+, and comparison conditions, controlling for fall scores, age, maternal education level, and classroom quality. No significant differences among conditions.

PD   **PD+**   **COMPARISON**

Language
Clinical Evaluation of Language Fundamentals: Preschool-2nd edition

Spring

Fall follow-up

Phonological Awareness
Pre-reading Inventory of Phonological Awareness

Spring

Fall follow-up

Letter Naming
Phonological Awareness Literacy Screening, Preschool

Spring

Fall follow-up

Letter Sound Production
Letter Sound Short Forms

Spring

Fall follow-up

Print Concepts
Preschool Word and Print Awareness

Spring

Fall follow-up

Ohio Kindergarten Readiness Assessment-Literacy

Fall follow-up

0   15   30   45   45

ADJUSTED SCORE

9

How was the Professional Development Implemented?

PD facilitators and participating educators were asked to complete surveys and logs to evaluate multiple aspects of PD course implementation. Facilitators were asked to track aspects of implementation at each session, including educators' participation and completion of key PD activities; however, less than 50% of these forms were returned to ecQ-net and many were incomplete. Educators were asked to rate the quality of the PD course and the PD facilitator; less than 25% of educators provided responses. In general, the limited data received indicated positive findings concerning implementation; however, we are unable to ascertain whether these findings are generalizable to the full sample or only reflect the experiences of the facilitators or educators who chose to respond. Educators also were asked to complete a checklist of facilitators' adherence to key course components (less than 25% responded); the same checklists were also completed by ecQ-net staff for a small selection of courses. Based on the checklists, on average, facilitators appeared to implement the professional development as intended, averaging 95% and 85% adherence as reported by educators and ecQ-net staff, respectively. However, these scores ranged from 61% to 100%, showing variation across PD offerings in whether all key components were implemented.

For the coaching component of PD+, coaches tracked their interactions with participants via electronic logs. On average, participants experienced 28.62 hours of coaching, with this ranging from one to 78 hours. Most did not experience coaching as it was intended to be implemented (i.e., one 90-min session per week across the academic year; Weber-Mayrer, Piasta, Ottley, Justice, & O'Connell, 2016). The majority of coaching sessions focused on the intended early language and literacy content (with greater attention to the physical literacy environment and less to oral language and emergent writing) and used many of the intended coaching strategies. Coaches also spent a fair amount of time on administrative tasks and supporting teachers on topics not directly related to the professional development, such as behavior management and unrelated assessments (Schachter, Weber-Mayrer, Piasta, & O'Connell, 2016).

Conclusion

A large number of early childhood educators across Ohio have taken advantage of the state-sponsored language and literacy professional development. Participating educators reflected the great diversity of this workforce, and, based on survey responses, most had positive professional development experiences. However, although the language and literacy professional development was carefully designed to change educators' knowledge, dispositions, and classroom practices and thereby improve children's language and literacy skills, this evaluation showed very few benefits on measured outcomes.

It appears that some of the professional development may not have been implemented as intended, in terms of adherence to key components and achieving the desired amount of coaching; additional conclusions regarding implementation would require additional data. Moreover, it may be that the diversity of the population served requires tailoring professional development content or delivery in different ways. These types of issues are typical challenges when programs or practices are scaled up (Gottfredson et al., 2015).

Unfortunately, the extent to which this language and literacy professional development achieved intended impacts on educators and children was not studied prior to statewide implementation. Therefore, we cannot conclusively determine whether the professional development itself was effective but unable to achieve effects when scaled up. The results underscore the need to evaluate state professional development efforts in order to make determinations about impacts and resources.

The current results caution against investing in large-scale professional development without initial evidence indicating that it can be implemented effectively and achieve desired outcomes. Results also underscore the necessity of continued evaluation as professional development is implemented statewide. More research is necessary to develop and provide professional development that leads to desired outcomes and provides all children with high-quality language and literacy learning opportunities during early childhood.

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Author Note

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