



The effects of language- and literacy-focused professional development on early educators and children: A best-evidence meta-analysis ☆,☆☆



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ARTICLE INFO

Article history:

Received 17 July 2015

Received in revised form 20 July 2016

Accepted 27 July 2016

Keywords:

Professional development
Preschool quality
Educator-child interactions
Process quality
Emergent literacy

ABSTRACT

Professional development (PD) is increasingly used to improve early childhood educators' skills and knowledge in providing quality language and emergent literacy environments for children. However, the literature does not clearly indicate the extent to which such efforts reach their goals, or whether improvements in educator outcomes translate to learning gains for children. In the current synthesis, we conducted meta-analyses to evaluate the effects of language- and literacy-focused PD on process quality, structural quality, and educator knowledge as primary outcomes. Furthermore, we estimated effects for three child outcomes: receptive vocabulary, phonological awareness, and alphabet knowledge. PD produced a medium effect for process quality and a large effect for structural quality but no effect for educator knowledge. PD also produced a small to medium effect for phonological awareness and a small effect for alphabet knowledge, but these were not predicted by gains in educator outcomes. Although course and coaching intensity and duration were related to effect sizes, the total number of PD components was the strongest predictor of process quality. The results suggested that PD is a viable method of improving language and literacy processes and structures in preschools, but effects may need to be substantial if they are to translate into higher child outcomes.

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1. Introduction

Considerable public investments are made in the ongoing professional growth and development of early childhood educators (henceforth educators). Referred to as professional development (PD), educators, like their colleagues in the primary and secondary sectors, have access to extensive opportunities to participate in PD as a way to continue to develop their skills and knowledge. PD areas of import include using assessment to guide instruction (Sato, Wei, & Darling-Hammond, 2008), adopting new curricula and pedagogies (Powell, Diamond, Burchinal, & Koehler, 2010),

and using novel materials in the classroom (e.g., emerging technologies; Lawless & Pellegrino, 2007). PD has been a particularly important avenue for bringing research findings regarding early language and literacy development and pedagogy to the early education workforce over the last two decades, stimulated by a 1998 report regarding the importance of preventing, rather than remediating, reading difficulties in children (Griffin, Burns, & Snow, 1998). The subsequent Early Reading First legislation, implemented as part of the No Child Left Behind Act of 2001, provided millions of dollars to early education organizations to provide PD to their educators on how to prevent reading difficulties in young children through use of screening tools, research-based curricula, and creation of literacy-rich learning environments (Jackson et al., 2007). In parallel, numerous studies have sought to assess the effects of PD investments on early educators' knowledge and practices as well as child outcomes when children's educators participate in

☆ This research was supported by the Danish National Board of Social Services and the Danish Council for Strategic Research.

☆☆ It was accepted under the previous editor Winsler not Justice.

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language- and literacy-focused PD (Cabell et al., 2011; Piasta et al., 2012; Powell et al., 2010; Wasik & Hindman, 2011).

Considered in aggregate, what does the literature involving provision of language- and literacy-focused PD to educators tell us about the effects of PD on educators and children? The present study was conducted to examine this accumulated literature quantitatively to help us address this unresolved question. The motivation for the review stems to a large degree from the results of this PD literature, which often appear equivocal, and are therefore difficult to interpret. For instance, some research has found that language- and literacy-focused PD that utilizes coaching (Pianta, Mashburn, Downer, Hamre, & Justice, 2008) or formal courses (Hamre et al., 2012) is an important means to improve educators' instructional quality, whereas other studies have not find this to be the case (Lonigan, Farver, Phillips, & Clancy-Menchetti, 2011; Neuman & Cunningham, 2009). Furthermore, it is not entirely clear that the effects of PD extend beyond the educators who participate in it. Some studies found that PD resulted in outcome gains for the children served by the educators who participated in PD (Wasik & Hindman, 2011), whereas other studies did not (Buysse, Castro, & Peisner-Feinberg, 2010).

Schachter (2015) recently reviewed the designs of PD interventions in the early childhood education field and identified 35 unique models of delivering intervention, with the included studies varying on a number of variables including formats, intensities, and durations. Given such variability within these offerings, Schachter called for future researchers to develop better means of assessing PD in order to facilitate our understanding and interpretations of results. To this end, review and synthesis of the existing literature can be a useful tool that draws new information out of existing literature, by estimating overall effects and revealing variables that potentially account for patterns of variability in results (Cooper & Hedges, 2009).

The purpose of the present work was therefore to conduct a systematic review of the literature concerning the outcomes attributable to language- and literacy-focused PD, with an interest in assessing effects on both educators and the children they serve. We also attend to the characteristics of each PD (e.g., format, intensity, duration), as well as other variables that could help explain differences in effects (e.g., study population, study quality). In so doing, this systematic review not only highlights what has been learned from this accumulated literature, but also identifies areas warranting further exploration.

1.1. Interpreting the PD literature to date

Language- and literacy-focused PD provided to educators is designed to improve educator-specific outcomes related to quality and knowledge and, in turn, children's language and literacy skills. Such efforts reflect an increasing understanding of the importance of young children's language and literacy skills to their future reading and academic outcomes, and the potential for early educational experiences to improve these skills in the years prior to formal schooling. However, previous studies on the effect of PD have reported mixed results. Some PD studies have demonstrated positive effects of PD for both educators and children, as illustrated in a study conducted by Wasik and Hindman (2011). These researchers implemented the Exceptional Coaching for Early Language and Literacy (ExCELL) PD, provided to 19 educators in the form of a summer course and monthly coaching sessions for a one-year period. As compared to a control group of 11 educators, the ExCELL educators demonstrated increases in educator practice as measured by the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, & Hamre, 2008), and the Early Language & Literacy Classroom Observation (ELLCO; Smith & Dickinson, 2002). Furthermore, children demonstrated significant improvements in

receptive vocabulary and phonological awareness compared to controls. These results differ from those Buysse et al. (2010), who studied the Nuestrros Niños PD program in which 26 educators participated for one year in extensive coursework and coaching, similar to the ExCELL PD. However, in this study, educators' participation in PD had negligible effects on children's outcomes, with only one of five child outcome measures showing a positive effect of the educators' PD. It is unclear why the results differed across the two studies, although one possibility is that the children in the Nuestrros Niños PD study were primarily dual language learners, whereas those in the ExCELL PD study were monolingual speakers. Nonetheless, mixed results such as these present challenges in determining whether language- and literacy-focused PD warrants ongoing investment as a means to improve child outcomes in key areas.

An additional challenge in interpreting the results of the PD research to date concerns the high level of variability across studies in the intensity, or dosage, of PD as well as the format. In a study involving school teachers, Garet, Porter, Desimone, Birman, and Yoon (2001) refer to these as 'structural features' of PD. In their effort to identify characteristics that make PD effective for improving teachers' knowledge, skills, and practices, Garet et al. showed that two features of PD related to intensity and duration (namely, time span, and overall number of contact hours) have a positive and significant influence on participants' opportunities for active learning and for exposure to content knowledge; in turn, these two aspects of PD are positively associated with changes in educators' knowledge, skills, and practices. Thus, variability in these characteristics among language- and literacy-focused PD offerings for educators may contribute to mixed results concerning effectiveness. Some PD offerings, such as the ExCELL PD study, continue for a protracted period of time (i.e., one year), whereas other PD offerings, such as the *HeadsUp! Reading* PD (Jackson et al., 2006), extend for a shorter duration (15 weeks). The extended duration of the former PD relative to the latter may help to explain differences in child outcomes seen across the two offerings, with children whose educators participated in ExCELL experiencing significant, positive gains in their vocabulary, whereas children whose educators participated in *HeadsUp! Reading* experienced no such gains.

The variability across PD offerings as to the format, or approach, used to provide the PD to educators, can be observed in how some studies utilize formal courses, others use coaches, and some use a combination of courses and coaching. Garet et al. (2001), in their review of the characteristics of effective PD for school teachers, categorized PD as traditional versus reform formats, with traditional PD being course-based and reform PD using such alternatives as study groups and coaching. Their work showed that reform-based PD tends to be of longer duration and offer greater contact time, with more opportunities for active learning opportunities and a greater focus on content knowledge. Within the language- and literacy-focused PD literature, it is unclear whether reform-based PD yields positive effects for educators and children relative to traditional approaches, although some researchers have attempted to isolate the effects of individual PD formats. Specifically, Neuman and Wright (2010) compared the effect of PD courses against coaching on process and structural quality as well as educator knowledge of language and literacy ($n = 58$ in each group). Those in the course group received 30 h of coursework at a community college, whereas the coaching group received 30 h of in-class coaching. Neither group benefited significantly with regard to process quality or knowledge outcomes, although those in the coaching group showed benefits with regard to structural quality. Thus the results of the study indicated that coaching – when dosage is equal – may be a preferable form of PD than courses for one educator-specific outcome, but not others. However, only a careful examination of the entire literature on language- and literacy-focused PD offer-

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