



Dose–response relations between preschool teachers' exposure to components of professional development and increases in quality of their interactions with children[☆]



Robert C. Pianta^{a,*}, Jamie DeCoster^a, Sonia Cabell^a, Margaret Burchinal^{b,c},
Bridget K. Hamre^a, Jason Downer^a, Jennifer LoCasale-Crouch^a,
Amanda Williford^a, Carollee Howes^d

^a University of Virginia, United States

^b University of North Carolina, Chapel Hill, United States

^c University of California, Irvine, United States

^d University of California, Los Angeles, United States

ARTICLE INFO

Article history:

Received 7 May 2013

Received in revised form 21 May 2014

Accepted 2 June 2014

Available online 14 June 2014

Keywords:

Dose–response

Preschool

Professional development

Interactions

Classroom observation

Coaching

ABSTRACT

The present study examined the pattern of associations over time between the quality of observed interactions and exposure to features of an effective coaching model for 170 preschool teachers enrolled in a study investigating professional development impacts. Using a treatment-on-the-treated approach, teachers exposed to a greater number of cycles of coaching showed more improvement in classroom interactions over the year. More specifically, of the two components of treatment examined, video exemplars and individual coaching prompts, exposure to prompts was associated with growth from baseline in instructionally supportive interactions while watching video exemplars was associated with growth in emotionally supportive behaviors in analysis of linear effects. Watching emotional support video exemplars was negatively associated with growth in classroom organization behaviors. The non-linear pattern of these associations suggested that the initial dosage of prompts created observable effects on instructional support, but after a certain point additional dosage was not effective. Conversely, initial dosage did not create observable effects on emotional support, but improvement was observed after exposure to a certain minimum dosage of time watching video exemplars. The results have implications for the design, delivery, and focus of professional development for early childhood educators.

© 2014 Elsevier Inc. All rights reserved.

Introduction

Children's readiness skills when they start school are important enough for later success that educationally effective preschool programs are viewed as key leverage points for the well-being of

children and communities (Heckman, 2006; Magnuson, Ruhm, & Waldfogel, 2007). Consequently, efforts to improve the quality and impacts of preschool programs are very high on the lists of policymakers and program staff (e.g., Federal Race to the Top Early Learning Challenge, state Quality Rating and Improvement Systems (QRIS); Hustedt & Barnett, 2011; Tout et al., 2010). Accumulating evidence points to the success of certain professional development (PD) approaches for notably improving features of early education quality and impacts on child outcomes (Domitrovich et al., 2009; Hsieh, Hemmeter, McCollum, & Ostrosky, 2009; Landry, Anthony, Swank, & Monseque-Bailey, 2009; Pianta, Mashburn, Downer, Hamre, & Justice, 2008; Powell, Diamond, Burchinal, & Koehler, 2010; Raver et al., 2008). Thus important scientific questions arise concerning the mechanisms through which these approaches produce the detected effects and the aspects of implementation or design that could be made more efficient or cost-effective to better ensure scalability. For example, given the estimated public

[☆] The authors wish to thank the generous programs and teachers who participated in this study. We are grateful to Marcia Kraft-Sayre, Amanda Williford, Sam Fields, John Sideris, Kevin Grimm, Sarah Hadden, Allison Leach, Anne Henry, Wanda Weaver, Tammy Mintz, Jill Haak, Tess Krovetz, Catherine Worrell, Elise Rubinstein, and Heather Ortiz for their contributions to our work. The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305A060021 to the University of Virginia – funding the National Center for Research on Early Childhood Education (NCRECE). The opinions expressed are those of the authors and do not represent views of the U.S. Department of Education.

* Corresponding author. Tel.: +1 4342435481.

E-mail address: rcp4p@virginia.edu (R.C. Pianta).

investment of \$2.7–3.4 billion to meet the Head Start degree requirement by 2013 (Hart & Schumacher, 2005), or the roughly \$160 million investment in PD for quality improvement through California's Cares Plus efforts, the *efficient delivery of effective PD opportunities* is an important consideration.

Unfortunately, although many states' Quality Rating and Improvement Systems (QRIS) devote a significant amount of their total resources to improvement (Jung, Tsao, & Vu, 2011), there is little evidence regarding the extent to which these investments lead to improvements either in quality of care provided to children or child outcomes (Bridges, Justice, Hogan, & Gray, 2012; Sabol & Pianta, 2012). Consequently, program or agency staff making selections or designing PD implementations have limited empirically-supported guidance. In the present study, we examine just one of the questions at the nexus of evaluating effective professional development models – understanding the mechanisms through which these models operate to produce improvements. More specifically, we focus on preschool teachers' exposure to two specific components of a coaching model (MyTeachingPartner (MTP); Pianta, La Paro, & Hamre, 2008; Pianta, Mashburn, et al., 2008) evaluated in a randomized trial and shown to cause improvements in the quality of these teachers' interactions with children, with effect sizes in the moderate to large range (Downer et al., 2014). Analyses reported in the present study examine the extent to which variations in teachers' accumulating dosage of these two components of coaching are related to the magnitude of increases in the effectiveness of their interactions over the course of an academic year. Although the design of the study is correlational in nature and therefore we cannot infer causal effects related to this aim, the intent is to identify promising areas for research, evaluation, and professional development design.

The present study follows from a series of published reports from the National Center for Research on Early Childhood Education (NCRECE), in which intent-to-treat analyses involving nearly 500 teachers found two forms of PD effective for improving teacher–child interactions for preschool teachers (Downer et al., 2014; Hamre, Pianta, et al., 2012). The present study is a follow-up of the NCRECE intent-to-treat report and sample (Downer et al., 2014). We use a treatment-on-the-treated framework to more closely examine relations between teachers' interactions and MTP coaching. In MTP coaching teachers receive regular and focused feedback based on observation and analysis of their own teaching practice and access to video exemplars of others' interactions (Downer et al., 2014; Pianta, Mashburn, et al., 2008). More specifically, we test linear and curvilinear relations between teachers' accumulating dosage of exposure to feedback and video exemplars; both of which are components of the coaching treatment we hypothesized to be responsible in part for improvements in the quality of their interactions with children. Furthermore, we examine the extent to which the pattern of associations between dose and outcomes are specific to any of the three CLASS domains of teacher–child interactions that were the focus of MTP coaching inputs and observed as an outcome.

Need for professional development targeting effective teacher–child interactions

The quality of teachers' interactions with children is a prime target for PD interventions for several reasons. First, the nature and quality of teachers' interactions with children are consistently linked with children's development within early childhood programs (Brophy-Herb, Lee, Nievar, & Stollak, 2007; Curby et al., 2009; Dickinson & Brady, 2005; Guo, Pianta, Justice, & Kaderavek, 2010; Jackson et al., 2006; McCartney, Dearing, Taylor, & Bub, 2007). Second, data collected from across the nation suggest that pre-k children are likely to experience teacher–child interactions of

mediocre to low quality (Justice, Mashburn, Hamre, & Pianta, 2008; Phillips, Gormley, & Lowenstein, 2009; Pianta et al., 2005). The limited use and intensity of instructionally supportive practices, such as offering stimulating conversational language, encouraging conceptual understanding, and providing rich feedback, is particularly concerning given evidence that these features of interaction are consistently linked with children's development of early academic and language skills (Howes et al., 2008; Mashburn et al., 2008). Third, observational measures of teacher–child interactions, such as the Classroom Assessment Scoring System (CLASS; Pianta, La Paro, et al., 2008) or other measures of teacher–child interaction, are often a component of states' QRIS and other accountability frameworks (Hamre et al., 2009; Maxwell & Tout, 2012). Therefore, PD aligned to these measures could be of importance to workforce development and quality improvement. Understanding the specific nature of PD effects could be helpful in designing more potent and efficient approaches.

Perhaps as a result of the lackluster impacts of standard-fare professional development (Early et al., 2007), an emerging trend for PD is to focus on teachers' actual classroom practices and behaviors, using a variety of behavior change techniques such as coaching, modeling, and rehearsal-practice. In support of this shift, meta-analytic findings of effects related to general forms of PD suggests that training focused on teacher skills improves both the competency of child-care providers ($d = 0.45$, $SE = 0.10$) and children's outcomes ($d = 0.55$, $SE = 0.30$), and that skills training is most effective when there is a specific behavioral focus (Fukkink, 2007). Other research demonstrates that PD targeting teacher–child interactions can be effective in producing improvements in implementation of instructional activities and socio-emotional interventions (Domitrovich et al., 2009; Hsieh et al., 2009; Landry et al., 2009; Powell et al., 2010; Raver et al., 2008). Although the results of both primary studies and meta-analyses point out the value of PD focused on teachers' skills in the classroom, the field is only beginning to explore specific features of PD responsible for impacts of effective PD and the manipulable features of each treatment (e.g., dosage) that might inform designing uses at scale.

To the extent that skills-focused coaching appears to have some empirical basis as effective, studies that have evaluated effects of coaching on teachers typically have examined dosage as a feature of fidelity, with results demonstrating the importance of dosage but providing little in terms of effective levels or thresholds. In one example, Landry et al. (2009) varied dosage of a coaching intervention to reveal that greater dosage was important for elevating skills of less-well-trained teachers. In another, Ramey et al., 2009 reported that dosage was a key moderator of treatment effects in large-scale professional development efforts. An unanswered question in the PD coaching literature is the minimal dosage of specific components of coaching needed to effect change in teacher practice, as well as the upper thresholds for dosage after which more training has diminishing returns. The present study more fully examines dosage in terms of overall exposure and with regard to hypothesized active ingredients of MTP coaching.

Coaching and improvement of teacher–child interactions

Sheridan, Edwards, Marvin, and Knoche (2009) have suggested that PD studies be designed to better understand the dynamic processes underlying effects. Desimone (2009) has similarly suggested that studies should attempt to identify the mechanism responsible for any detected effects. Such a focus requires a theory of why a certain PD input to teachers would produce certain intended outcomes for teachers and children. In formulating the MTP coaching model of professional development, we hypothesized that change in teachers' interactive behaviors could be improved by building *skills in detecting effective teacher–child interactions through video analysis*

Download English Version:

<https://daneshyari.com/en/article/353799>

Download Persian Version:

<https://daneshyari.com/article/353799>

[Daneshyari.com](https://daneshyari.com)