

“At First I Wouldn’t Talk so Much...”: Coaching and Associated Changes in Language-Supportive Self-Efficacy among Infant/Toddler Educators

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ABSTRACT

Developing strong language and communication skills in the first years of life provides young children with a foundation for a number of positive outcomes, including school readiness, early literacy skills, and self-regulation. High quality language supports in early childhood education programs are key to this development. Part of providing these high-quality language supports involves educators perceiving themselves as efficacious in their capability to support young children’s language development. Using mixed methods, this study examines the extent to which there are changes in educators’ language-focused self-efficacy after participating in professional development program focused on promoting infant/toddler language development. We examine the changes across two groups: (1) educators who participated in a workshop focused on infant/toddler language development and (2) educators who participated in the same workshop plus one-on-one practice-based coaching. Results suggest that participation in the workshop plus coaching compared to the workshop alone was related to greater growth in self-efficacy in language modeling and instructional practices. In follow-up interviews, coached educators reported on their perceptions of impact of the program on their practices and interactions with children. Implications for future research and practice are discussed.

Developing strong language and communication skills in the first years of life provides young children with a foundation for a number of positive outcomes, including school readiness (e.g., Forget-Dubois et al., 2009), early literacy skills (e.g., Duff et al., 2015), and self-regulation (e.g., Vallotton & Ayoub, 2011). Infant/toddler educators (the term “educators” is used throughout to include caregivers, providers, and teachers in the early childhood workforce) play a pivotal role in supporting children’s development of these foundational language skills. For instance, toddlers whose educators provide rich-language stimulation are more likely to experience greater language growth (e.g., Girolametto & Weitzman, 2002).

Many infants and toddlers in group care, however, commonly receive low-quality language supports from educators (e.g., Degotardi et al., 2016; Norris, 2017; Thomason & La Paro, 2009). The lack of high-quality language supports may stem from many educators finding it challenging to engage in conversations with very young children or provide children with opportunities to practice using language (Vogel et al., 2015). Part of providing these high-quality language supports involves

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educators perceiving themselves as efficacious in their capability to support young children's language development.

Self-efficacy can play an influential role in educator effectiveness (Bray-Clark & Bates, 2003). Bandura (1997) described self-efficacy as an individual's perceptions of himself or herself as competent in a given task or domain. Self-efficacy develops from an individual's history of success, social comparisons, verbal feedback from others, and emotional state (Bandura, 1982) and has been linked to daily performance variables including persistence, effort, goal setting, and strategy usage (Berry & West, 1993; Wells-Parker et al., 1990). Thus, understanding the perceptions of self-efficacy that educators have of their own capability to support infant/toddler language and communication development are important constructs to examine, particularly during efforts to improve educators' competence through professional development.

Participating in professional development activities may promote higher levels of self-efficacy among educators (e.g., Bray-Clark & Bates, 2003; Hoy & Spero, 2005). For example, educators report greater self-efficacy after participating in professional development (e.g., Kosko & Wilkins, 2009; Zhang & Burry-Stock, 2003). Much of the work on the effects of professional development on self-efficacy, however, has focused on educators working with older children (e.g., Kosko & Wilkins, 2009; Voss & Bufkin, 2011; Wilcox-Herzog & Ward, 2004) or children with disabilities (e.g., Baker-Ericzén et al., 2009), leaving questions about the self-efficacy of educators working with typically developing infants and toddlers. Furthermore, these studies have primarily examined self-efficacy related to general classroom practices (Wilcox-Herzog & Ward, 2004), behavior management (e.g., Gray, 2015), or classroom inclusion of children with disabilities (e.g., Baker-Ericzén et al., 2009; Voss & Bufkin, 2011). As self-efficacy can differ depending on domain, it is important to understand how professional development may be associated with self-efficacy in supporting the language and communication development of infants and toddlers.

The current study addresses these gaps in our understanding of language-focused professional development on the self-efficacy of educators to support infant/toddler language development. Using mixed methods, the current study examines the extent to which educators report changes in their self-efficacy after participating in professional development focused on promoting infant/toddler language development. We examine the changes in educators' language-focused self-efficacy across two groups: (1) educators who participated in a workshop focused on infant/toddler language development and (2) educators who participated in the same workshop and who also received coaching support to promote utilization of language-promoting practices in the classroom.

In this way, we test the added value of coaching on educator self-efficacy related to practices that promote language development among infants and toddlers. For educators that experienced coaching, we also examine their perceptions of the impact that participating in the program had on their self-efficacy to support children's language/communication development and the impact they perceived on the children in their classrooms. The current study contributes to the literature by identifying the extent to which coaching adds value over a workshop format for the language-focused perceptions of efficacy of infant/toddler educators. The study further contributes to the literature by adding the voices of infant/toddler educators to better understand the role of coaching on how self-efficacy develops through professional development.

Conceptual Framework

The first 3 years of life represent a critical period for young children's language development. Language development during this time is highly dependent on the quality of interactions that children have with the adults in their lives (McGillion et al., 2017; Mermelshtine & Barnes, 2016). According to the bioecological model of development, children's development occurs through proximal processes between the child and the people and/or objects in the environment (Bronfenbrenner & Morris, 2006). As educators interact with infants and toddlers during their daily routines and activities, educators provide them with interactions that either foster or limit their language

development. For educators to implement practices that foster language development, they must see themselves as capable of supporting children in acquiring language.

Self-efficacy arises from having developed knowledge and skills in a particular area and the certainty that one can put the knowledge and skills to use when needed. Educators' perceptions of efficacy are a critical indicator of readiness for change and set the stage for skill utilization (Sheridan et al., 2009). Educators benefit from professional development as a means of learning domain-specific knowledge and practice, associated skills that serve as a foundation for self-efficacy. For example, educators may benefit from engaging in high-quality training regarding how to promote rich language interactions associated with children's optimal language development.

Adult learning theories provide a framework for understanding how professional development may advance early childhood educators' competencies to foster children's language and communication development. Optimal conditions for adult learning involve a readiness to learn, self-direction, active participation, and a focus on practical solutions to everyday challenges (e.g., Cox, 2015; Dunst et al., 2015; Dunst & Trivette, 2012; Trivette et al., 2009; Trotter, 2006). Professional development experiences that foster these conditions are those that promote effective adult learning: (1) introduction and demonstration of new knowledge or practices; (2) opportunities for learners to apply new knowledge or practices and evaluate their application; and (3) opportunities for self-reflection and self-assessment (e.g., Donovan et al., 1999; Dunst et al., 2015; Trivette et al., 2009). The extent to which professional development opportunities include these characteristics reflects the extent to which professional development can impact learners' competencies (e.g., Dunst et al., 2015; Trivette et al., 2009) and self-efficacy (Tschannen-Moran & McMaster, 2009).

Professional development focused on children's language development aims to improve educators' competencies and the potential impact educators can have on children's language development through the experiences they provide for children (Markussen-Brown et al., 2017). As professional development improves educators' knowledge about child development and their beliefs about their capability in supporting young children's development, scholars suggest there is a corresponding improvement in educators' skills in supporting children's development, which in turn improves the quality of educators' classroom practices (e.g., Althaus, 2015; Fukkink & Lont, 2007; Yoo, 2016). As these practices improve, the quality of interactions between educators and children should also improve, which should benefit children's development (e.g., Althaus, 2015; Fukkink & Lont, 2007; Hamre et al., 2012; Tschannen-Moran & McMaster, 2009). Throughout this process, educators develop greater perceptions of their own competence as they learn how to apply their new knowledge and skills in the classroom.

Language-Focused Professional Development

Language-focused professional development aims to improve educators' competencies (i.e., knowledge, beliefs, skills) to provide children with the high-quality interactions needed to support language development (e.g., Markussen-Brown et al., 2017). These competencies are amenable to change through professional development (e.g., Fukkink & Lont, 2007; Markussen-Brown et al., 2017; Zaslow et al., 2010). While structural and process quality indicators have most commonly been assessed as indicators of educators' competence (e.g., Markussen-Brown et al., 2017), educators' perceptions of their own competency has less often been assessed in determining the effectiveness of language-focused professional development programs. This gap in the literature persists despite the importance of self-perceptions for behavior and decision-making (e.g., Bandura, 1997; Dellinger et al., 2008; Radecki & Jaccard, 1995). Below we review the literature on two of the common early childhood professional development activities – workshops and coaching – and the evidence on the impact on educators' self-perceptions focused on language-supportive competency. As the majority of studies have focused on educators working with preschool-aged children (e.g., Neuman & Wright, 2010), there are gaps in understanding the effects of professional development of educators working with infants and toddlers.

Workshops

Training workshops are group-based professional development activities occurring outside of formal education. Workshops may vary in the number and length of sessions, but generally have the goal of building participants' knowledge and/or skill in a particular domain (Sheridan et al., 2009). There have been few studies that have examined the association between participation in a language-focused workshop and changes in participants' self-efficacy. For example, Scarinci and colleagues (2015) examined the effects of in-service professional development consisting of two half-day workshops delivered a week apart to educators working with children under the age of five. Compared to their perceptions before completing the workshop, educators showed gains in their perceptions of their ability to support children's language development as measured at the end of the second workshop (Scarinci et al., 2015). This professional development was focused on the language development of young children in general, without a specific focus on the language development of infants and toddlers. To support very young children who are in the earliest stages of language acquisition requires a distinct set of knowledge and skills than what is needed to support language development among typically developing preschool children who have more developed oral language skills. Yet supporting the language development of infants and toddlers is rarely an explicit focus of workshops. This rarity highlights the need to investigate workshops targeted to improving educators' perceived competency in infant/toddler language development.

Coaching

Coaching is a form of professional development that is particularly well suited to promoting higher-quality language interactions between educators and children. As a capacity-building interaction style between the educator and the coach, coaching aims to promote an increased ability in the educator to recognize existing strengths, develop new knowledge/skills, and form self-perceptions about one's ability to implement a desired course of action (Rush & Shelden, 2020; Wilson et al., 2006). Coaching has been shown to provide a hands-on, individualized level of professional development needed for educators to learn how to communicate with children in ways that foster children's language development. Coaching is used in the early childhood field to build the capacity of parents and educators to promote the use of language and communication strategies in young children (e.g., Brown & Woods, 2016; Friedman & Woods, 2015). Coaching has also been an effective means for providing educators with ongoing, embedded professional development for implementing language and literacy strategies (Amendum, 2014; Diamond & Powell, 2011). Devine et al. (2013) noted that there is increasing evidence that professional development for educators is effective with promoting new practices when intensive support such as instructional coaching is provided. Furthermore, Diamond and Powell (2011) have found that coaching as a workplace learning strategy was especially positive with promoting Head Start educators' use of evidence-based practices.

Similar to the literature on workshops, the association between coaching and educator self-efficacy as it relates to language support for infants and toddlers has rarely been examined. Of the few studies focused on language-focused coaching for educators of infants and toddlers, the emphasis has typically been on educators' use of infant/toddler language-supportive strategies (e.g., Lorio & Woods, 2020; Ottley et al., 2019). For example, a recent study by Lorio and Woods (2020) of four Early Head Start educators suggested that coaching in the use of explicit vocabulary instruction with toddlers was effective in increasing educators' use of these strategies during shared book reading. Increased use of language-supportive strategies may have implications for educators' perceptions of their language-supportive self-efficacy. It is unclear, however, the extent to which coaching may impact educators' perceptions regarding their competence to support children's language development. Coaching, as a capacity-building practice promotes positive self-perceptions to the extent that it enables educators to recognize their own strengths and abilities in achieving desired outcomes (Rush & Shelden, 2020). There are few studies, however, that have investigated this possibility. Thus, the question remains as to the role that coaching plays in promoting changes in educators' self-efficacy about their ability to support the language development of infants and toddlers.

The More Than Baby Talk Program

The *More Than Baby Talk* program examined in the current study aims to address the gap in language-focused professional development for educators of infants and toddlers. This program, led by a developmental psychologist, taught educators to incorporate language-supportive practices into everyday routines and activities with the infants and toddlers in their care. Using adult learning theories, the program aimed to build knowledge of infant/toddler language and communication development and strengthen self-beliefs about educators' competence to support young children's language and communication development. Through a workshop, educators were taught the latest research on infant/toddler language development, the importance of early language development for later academic and social-emotional development, and 10 research-based practices to provide infants and toddlers with rich language input. During the workshop, educators watched video exemplars of other educators modeling language-use and practicing communication with children through verbal and non-verbal means.

Educators, who received coaching, were paired with a coach who worked with them one-on-one to support their classroom implementation of the practices on a bi-weekly basis over the course of 9 months (i.e., 18 sessions total). The coaching sessions were structured to incorporate five coaching characteristics that support effective adult learning: (1) joint planning; (2) action/practice; (3) observation; (4) feedback; and (5) reflection (Gupta & Daniels, 2012; Kemp & Turnbull, 2014; Rush & Shelden, 2020). Coaches were trained and supported to (1) help the educator discover what he or she already knows and does (reflection); (2) share evidence-based information, ideas, and strategies (feedback); (3) support the educator to engage in practice opportunities where she or he refines the use of information and ideas (action/practice and observation); and (4) engage the educator in planning for the continued use of the strategies in real-life contexts (joint planning). Research suggests that together these characteristics provide an effective way to build the knowledge, skills, and abilities of the individual being coached to implement target practices without continuous ongoing support of the coach (Rush & Shelden, 2020).

The Current Study

This current study examines the extent to which language-focused professional development is associated with gains in educators' self-efficacy to support the language development of infants and toddlers. The study used a mixed-methods approach to investigate the role of program participation on participants' self-efficacy. Through surveys and semi-structured interviews, the study addressed two research questions.

First, to what extent does receiving language-focused coaching predict gains in educators' self-efficacy in supporting infant/toddler language development? By comparing a model of workshop/coaching to a workshop-only model, the study seeks to identify the added value of coaching associated with gains in educators' language-supportive self-efficacy. As many studies on the effects of language-focused professional development have included multiple components, it has not been possible to identify the features responsible for producing program effects (Zaslow et al., 2010). The current study aims to address this gap in the literature by comparing the self-efficacy beliefs of participants of a language-focused workshop to those of participants in a more comprehensive program of language-focused training and individualized practice-based coaching. Based on previous work that has found that participating in coaching benefits the perceptions educators have of their own self-efficacy (e.g., Tschannen-Moran & McMaster, 2009), we hypothesize that participating in coaching will be associated with gains in educators' self-efficacy beliefs with regard to supporting young children's language development.

Second, how do educators who receive coaching describe the impact of the program on their capability to support children's early language and communication development? Given the dearth of research on educators' perceptions of the impact on language-focused coaching experiences, we are precluded from making specific hypotheses. We expect, however, that educators will identify ways in

Table 1. Background demographic characteristics.

Characteristic	Overall (N = 121)	Coached (N = 25)	Workshop Only (N = 96)	χ^2/t	p
	N (%) or Mean (SD)	N (%) or Mean (SD)	N (%) or Mean (SD)		
Race/Ethnicity				3.89	.14
Black/African American	73 (60.3%)	19 (76%)	54 (56.3%)		
Latinx	6 (5.0%)	0	6 (6.3%)		
White/European American	42 (34.7%)	6 (24%)	36 (37.5%)		
Age (years)	40.7 (SD = 13.6)	36.4 (SD = 12.9)	41.9 (SD = 13.7)	1.80	.07
Education				4.82	.31
High School/GED	12 (9.9%)	1 (4%)	11 (11.5%)		
Some College/No degree	52 (43.0%)	9 (36%)	43 (44.8%)		
Associate's Degree	32 (26.8%)	7 (28%)	25 (26.0%)		
Bachelor's Degree	23 (19.0%)	8 (32%)	15 (15.6%)		
Master's Degree or Higher	2 (1.7%)	0	2 (2.1%)		
Age Group of Children Served				5.32	.38
Infants	45 (37.8%)	7 (28%)	38 (40.4%)		
Twos	42 (35.3%)	13 (52%)	29 (30.9%)		
Threes	20 (16.8%)	3 (12%)	17 (18.1%)		
Fours	2 (1.7%)	0	2 (2.1%)		
Fives	3 (2.5%)	0	3 (3.2%)		
Multiple ages	7 (5.9%)	2 (8%)	5 (5.3%)		
Role				.26	.61
Assistant Educator	44 (36.4%)	8 (32%)	36 (37.5%)		
Lead Educator	77 (63.6%)	17 (68%)	60 (62.5%)		
Years of ECE Experience	12.8 (SD = 10.2)	8.6 (SD = 6.7)	14.0 (SD = 10.7)	2.41*	0.02

Note. To test the differences across categorical variables between the coached and workshop-only groups, a Pearson Chi-square test was used. For tests of group differences in continuous variables, t-tests were used; * $p < .05$; ECE = early childhood education.

which coaching has impacted their perceptions of their own efficacy to provide young children with language supports in the classroom.

Method

Participants

Participants were 121 early childcare and education (ECE) educators in a southeastern community. They were recruited through a community-based organization that provides professional development opportunities for the ECE field. Table 1 contains background characteristics of the participants. All participants were female. The majority of participants were Black/African American. They averaged 40.7 years of age (SD = 13.6). Nearly half of participants had at least an associate's degree or higher education (47.5%). Average years of experience working in the ECE field was 12.8 (SD = 10.2). Participants were either lead educators (63.6%) or assistant educators (36.4%), working in 49 different childcare centers in the local area. Of these 49 centers, 92% had fewer than four educators from the same center who attended a *More Than Baby Talk* workshop. Nested sources of variability could not be tested given that at least 10 participants per unit is recommended for multilevel modeling (Snijders & Bosker, 1993). Educators varied in the primary age group of children served, with 37.8% serving infants and 52.1% serving toddlers. Participants received a verbal and written description of the study and informed consent was obtained. The study was approved by the appropriate institutional review board.

Procedure

All participants attended a *More Than Baby Talk* training workshop focused on delivering specialized content on infant/toddler language development (Time 1). At the beginning of the workshop participants completed a survey that assessed their background characteristics (e.g., age, race,

education level) and perceptions of self-efficacy. The workshop incorporated the characteristics of effective adult learning with the goal of improving the competence of early childhood educators to support language and communication development among infants and toddlers. This program included two versions: (1) specialized training workshop only and (2) specialized training workshop and one-on-one practice-based coaching.

Training Workshop

The content of the training workshop was based on the *More Than Baby Talk* guide (Gardner-Neblett & Gallagher, 2013). The workshop was delivered by the first author, a doctoral-level developmental psychologist with extensive experience in presenting to ECE audiences. The workshop was a one-time, three-hour session focused on a set of 10 teaching practices identified in the research literature as supportive of infant/toddler language and communication development. The specialized training workshop presented research-based content related to infant/toddler language development, including the importance of early language skills for later development and how early childhood professionals can support children's language development. During the workshop, the facilitator provided a review of the research on the importance of early adult-child language interactions and explained each of the 10 teaching practices with video exemplars and opportunities for role play. The workshop concluded with opportunities for participants to practice identifying effective and less effective practice from video clips of educator-child interactions and brainstorm effective strategies with feedback from the presenter. There were also opportunities for participants to self-reflect and assess their competence to support infant/toddler language and communication development. Three months after the workshop, a research assistant contacted workshop-only participants by e-mail and/or postal mail to complete a follow-up survey on the same measures (Time 2).

Coaching

At the end of the workshop, participants were invited to participate in the coaching program. The research team followed up with each individual who expressed initial interest to assess eligibility. Participants were eligible to receive coaching if they worked in a center-based setting with infants and/or toddlers as either a lead educator or an assistant educator and had approval from their center directors to enroll. Twenty-five educators enrolled in the coaching program.

Coaches were technical assistance specialists who held at least a bachelor's degree and had experience in early childhood education. Coaches received a half-day training provided by the first author on the *More Than Baby Talk* practices and the latest research on promoting language and communication skills in infants and toddlers. Coaches also received a one-day training on effective coaching interactions provided by the third author. The day-long training focused on using research-based effective coaching interactions to promote the use of the *More Than Baby Talk* practices by educators during everyday classroom activities and routines. After the training and throughout the course of the program, coaches received bi-monthly follow-up support to discuss the implementation of the *More Than Baby Talk* practices with their assigned educators and the alignment of their interactions with evidence-based coaching characteristics. Each meeting included discussions of detailed interactions between educators and coaches based on written coaching logs (from transcripts of audio-recordings of coach-educator conversations) and analysis of the interactions for consistency with the coaching characteristics and the *More Than Baby Talk* practices. The written coaching logs were also used to monitor the coaches' fidelity to the evidence-based coaching characteristics. The authors reviewed the bi-weekly logs and coded them to analyze their alignment with evidence-based coaching characteristics. Each early childhood coach reached fidelity with her use of a coaching interaction style during the course of the project.

Each educator was randomly paired with one of four coaches. Educators and coaches met on average every 2 weeks over the course of 9 months. Each month featured one of the ten *More Than Baby Talk* practices, with the last month focused on two of the practices. Coaching sessions included reflective sessions conducted outside of the classroom setting (e.g., educators' lounge) and/or in-

classroom observation/practice sessions with children present. Each session lasted about an hour on average. At the end of the coaching program (Time 2), educators completed an online survey of perceptions of their competence and were interviewed about their experiences (described in the qualitative analysis section below).

Measures

Language-focused self-efficacy was assessed at Time 1 and Time 2 through participants' self-report of their perceived knowledge of infant/toddler language development and perceived skill in supporting infant/toddler language development. Measures were developed for the current study as there were no known standardized measures of self-efficacy in relation to supporting infant/toddler language development. The items developed were based on a review of the current literature on infant/toddler language development and designed to tap into the major content areas covered during the professional development program.

Participants were asked to report on their level of knowledge of how to support infant/toddler language and communication development across a set of 10 items, using a Likert scale from 1 "I know almost nothing about this topic" to 5 "I know almost everything about this topic." Participants were then asked to report on their level of skill in supporting infant/toddler language and communication development across the same set of 10 items used for the perceived knowledge items. To assess perceived skill, a Likert scale similar to the perceived knowledge items was also used from 1 "I have very low skill on this topic" to 5 "I have very high skill on this topic."

To identify the factors underlying participants' perceived self-efficacy, we conducted exploratory factor analysis using the 20 items asked to assess participants' perceived knowledge and skill. We conducted principal component analysis with promax rotation, an oblique rotation that allows the factors to be correlated (Matsunaga, 2010). We used .60 as the factor loading threshold and retained items that had a second highest factor loading of less than .30. The resulting solution showed that the items loaded onto two factors that explained 69.2% of the variance. The scree plot confirmed that a two-factor solution was preferable given the decline in eigenvalues after the two-factor solution. We retained 13 items that loaded highly on one of two factors. Table 2 displays the factor pattern matrix with the factor loadings. Factors range from less than -1 to more than 1 due to the use of an oblique rotation, which provides regression coefficients. Examination of the structure matrix of the correlations between the factors and the items were consistent with the pattern matrix, such that items had higher correlations with the primary factor and lower correlations with the secondary factor.

Instructional Practices

We labeled the first factor as instructional practices as it included items that were related to perceptions of self-efficacy in classroom practices and activities that are supportive of language/

Table 2. Principal component analysis factor pattern matrix.

Items	Factor 1	Factor 2
Perceived skill in how to read books to children multiple times	1.053	-.255
Perceived skill in how to engage in musical activities with children	.938	-.076
Perceived skill in how to use gestures or simple signs with words to communicate with children	.813	.003
Perceived skill in how to use books to engage children's participation	.776	.089
Perceived knowledge of how to read books to children multiple times	.757	.068
Perceived knowledge of how to engage in musical activities with children	.725	.132
Perceived knowledge in how to engage in conversations with children	-.289	1.065
Perceived knowledge of how to give children descriptions of objects or actions	-.074	.909
Perceived knowledge of how to use different types of words and grammar when talking to children	.009	.776
Perceived knowledge of how to provide children with names of objects or actions	.105	.756
Perceived skill in how to give children descriptions of objects or actions	.140	.729
Perceived skill in how to engage in conversations with children	.196	.684
Perceived knowledge of how to introduce objects to start conversations with children	.225	.651

communication development. Items included skill and knowledge in book reading strategies, musical activities, and nonverbal means of communication. The six items that loaded onto this factor were averaged to create a summary score (Time 1 Cronbach's alpha = .94; Time 2 Cronbach's alpha = .90).

Language Modeling

The second factor was labeled as Language Modeling as it included perceptions around self-efficacy in engaging in conversations or providing children with advanced language input. Items included knowledge and skill in using strategies to involve children in conversations, providing descriptions of objects or actions, and using a variety of vocabulary and/or grammatical structures. Seven items loaded onto this factor and were averaged to create a summary score (Time 1 Cronbach's alpha = .94; Time 2 Cronbach's alpha = .90).

Analytic Approach

Quantitative Analyses

To address the first research question on the role of coaching in predicting gains in self-efficacy, self-efficacy of the workshop-only group was compared to the workshop/coaching group at Time 1 and Time 2 using repeated measures analyses of covariance (ANCOVA). To control for the influence of educational background, participants' highest level of education was used as a covariate in the analyses. These analyses allowed for testing of the mean differences in self-efficacy between groups and determination of whether there was an interaction between group and time. Effect size was assessed using the partial eta-squared (η^2).

Qualitative Analyses

To address the second research question on how educators describe the impact of the workshop/coaching program on their self-efficacy to support children's early language and communication development, semi-structured interviews were conducted at the end of the coaching portion of the program. Interviews (N = 16) were conducted by phone and lasted about 30 minutes in duration. Questions included how the program compared to expectations, coaching facilitators and challenges, which language-supportive strategies were the most helpful and which were the most challenging, and a series of questions about perceived program impact. Educators were asked: 1) What do you do differently in your interactions with children after having gone through coaching?; 2) How have you noticed that the children have benefited from you being in the program?; and 3) How do you think you are different now as a result of being in the coaching program? Interviews were audio-recorded and transcribed verbatim. Analyses of qualitative data involved an inductive process based on Thomas's (2006) general inductive framework. This approach provides researchers with a straightforward method to 1) condense raw text into a brief, summary format; 2) establish clear links between the research objectives/questions and the summary findings derived from the raw data; and 3) develop a framework of the underlying structure of experiences or processes that emerge from the raw data. We began by reviewing interview transcripts for emerging themes focused on making links to our

Table 3. Correlations and descriptives for key study variables.

Variable	1	2	3	4
1. Self-Efficacy, Instructional Practices, Time 1	1			
2. Self-Efficacy, Language Modeling, Time 1	.76***	1		
3. Self-Efficacy, Instructional Practices, Time 2	.30***	.47**	1	
4. Self-Efficacy, Language Modeling, Time 2	.41***	.35***	.84***	1
Mean	3.51	3.63	4.31	4.26
SD	.74	.78	.62	.62
Minimum	1	1	2.67	2.43
Maximum	5	5	5	5

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

research questions. Based on these initial reviews and the identified themes, each transcript was then coded for broad themes. Themes were reviewed across transcripts and condensed to develop overarching themes, and illustrative quotes for each were extracted. To determine coding reliability, two coders independently coded 25% ($n = 4$) of the interview transcripts. The four transcripts were randomly selected using a random number generator. They were then compared for agreement with an average of 83%.

Results

Preliminary Analyses

Examination of bivariate correlations indicated associations between the perceptions of self-efficacy (Table 3). Perceived self-efficacy in instructional practices correlated with perceived self-efficacy in language modeling at Time 1 and Time 2. The more efficacious participants saw themselves as being able to engage in instructional practices that supported children’s language development, the more likely they were to see themselves as being efficacious in modeling language for children.

We compared self-efficacy at Time 1 and Time 2 for the overall sample (Table 3 contains means and standard deviations). Results show that participants reported greater self-efficacy in language-supportive instructional practices at Time 2 compared to Time 1 [$t(80) = 7.79, p = .000$; Cohen’s $d = .90$]. Participants also perceived greater self-efficacy in language modeling at Time 2 compared to Time 1 [$t(80) = 9.02, p = .000$; Cohen’s $d = 1.11$].

We also compared perceptions of self-efficacy for workshop-only participants to the perceptions held by the workshop/coaching participants (Table 4). There was no statistical difference between the groups in their perceptions of their self-efficacy in instructional practices at Time 1 or Time 2. While there was no statistical difference in perceptions of self-efficacy in language modeling at Time 1 between the groups, there was a difference at Time 2. At Time 2, workshop/coaching participants reported greater self-efficacy in language modeling than workshop-only participants. The Cohen’s d of .58 suggests a moderate effect size in the group difference in perceived efficacy for language modeling at Time 2.

Effects of Coaching on Gains in Self-Efficacy

To address the research question of the extent to which language-focused coaching predicts gains in educators’ self-efficacy, we conducted a two-way repeated measures analysis of covariance (ANCOVA), using participants’ highest level of education and the educator’s role (i.e., lead educator versus assistant educator) as covariates. The analyses were performed on self-efficacy for the main effects of group (workshop-only vs. workshop/coaching), time (Time 1 vs. Time 2), and interactions.

Table 4. Means and standard deviations for self-efficacy at time 1 and 2.

Self-Efficacy	Workshop only	Workshop/Coaching	<i>t</i>	Cohen’s <i>d</i>
	M (SD)	M (SD)		
Instructional Practices				
Time 1	3.56 (.72)	3.34 (.80)	1.28	.29
Time 2	4.24 (.59)	4.47 (.67)	1.39	.36
Language Modeling				
Time 1	3.67 (.76)	3.50 (.86)	.97	.21
Time 2	4.15 (.55)	4.52 (.71)	2.31*	.58

Note. + $p < .10$, * $p < .05$.

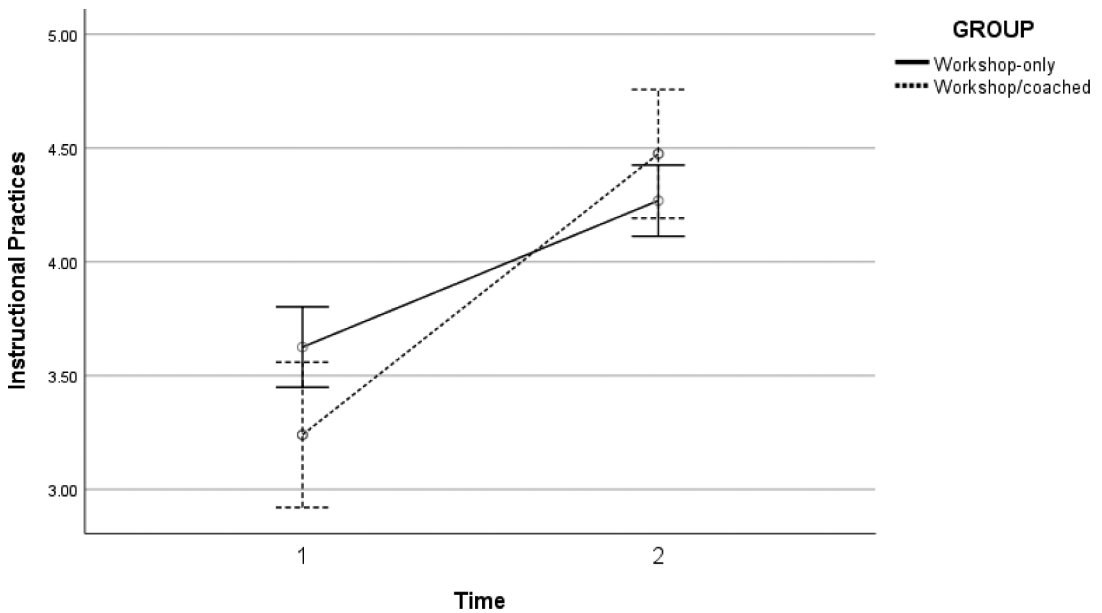


Figure 1. Plot of estimated marginal means for instructional practices self-efficacy over time by group. Note. Model controls for highest level of education and educator role (i.e., lead educator vs. assistant educator); error bars are 95% confidence interval.

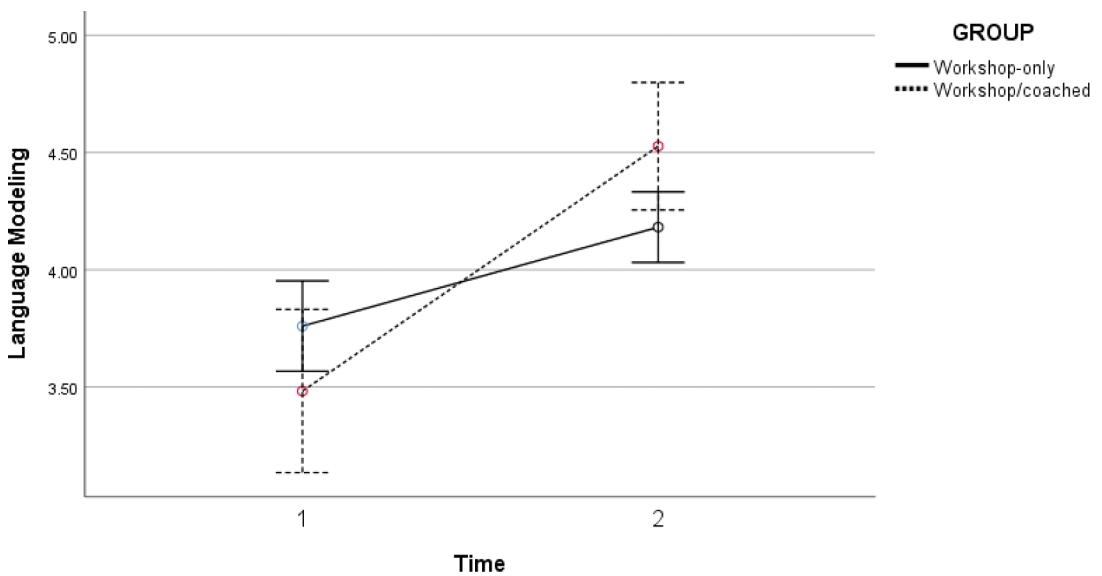


Figure 2. Plot of estimated marginal means for language modeling self-efficacy over time by group. Note. Model controls for highest level of education and educator role (i.e., lead educator vs. assistant educator); error bars are 95% confidence interval.

Self-Efficacy in Instructional Practices

Results showed a significant main effect for time [$F(1,64) = 15.51, p = .000, \eta^2 = .20$], indicating that across both groups, perceptions of self-efficacy in instructional practices increased over time. The main effect for group was not significant [$F(1, 64) = .13, p = .72$], however, the interaction time X group was significant [$F(1,64) = 7.38, p = .008, \eta^2 = .10$], indicating that there were significant differences in the change in self-efficacy over time between the workshop-only group and the

workshop/coaching group. **Figure 1** shows the interaction. While the workshop/coaching group had lower self-efficacy in instructional practices than the workshop-only group at Time 1, by Time 2 the workshop/coaching group reported greater self-efficacy.

Self-Efficacy in Language Modeling

Results for self-efficacy in language modeling were similar to the results for instructional practices. There was a significant main effect for time [$F(1,64) = 5.74, p = .02, \eta^2 = .08$], indicating that participants' perceptions of their self-efficacy in language modeling increased from Time 1 to Time 2. The main effect for group was not significant [$F(1,64) = .16, p = .69$]. There was a significant interaction between time and group [$F(1,64) = 8.41, p = .005, \eta^2 = .12$], indicating that significant differences between the two groups in the change in self-efficacy in language modeling over time. **Figure 2** shows the interaction. As with perceptions of self-efficacy in instructional practices, the workshop/coaching group had lower self-efficacy in language modeling at Time 1 than the workshop-only group, but by Time 2, higher levels of self-efficacy were reported by the workshop/coaching group compared to the workshop-only group.

Perceptions of the Impact of the Coaching Program on Self-Efficacy

We conducted interviews to understand how educators perceived the impact of the coaching program on their effectiveness to support children's language development and on the children they served. We present themes related to changes in the perceptions that educators had of their efficacy and changes in their perceptions of their interactions with the children (personal self-efficacy appraisal). We also identify themes in the educators' perceptions of how children benefitted from their participation in the coaching program (outcome efficacy). We used our codes to identify key quotes that best illustrated each theme.

Changes in Self-Efficacy

Two primary themes emerged from the transcripts of educators' responses when asked to reflect on how they perceive their sense of self-efficacy is different as a result of the coaching experience: 1) providing more language input to children and 2) attitudinal changes. These themes reflect increases in language input with educators talking with children more often and using more words as their self-efficacy for instructional practices increased. Based on our understanding of self-efficacy in these contexts (Bandura, 1982), coaches working to provide verbal feedback on educators' practices can bolster perceptions of competence and thus promote a willingness among educators to put forth additional effort with the new practice. For theme one, an educator who works with infants discussed overcoming her natural introversion:

I am a whole lot different. Educators look at me different. Used to hardly say anything but now, with the kids I talk more now. The educators are asking how do I do this? I say join *More Than Baby Talk*. I've seen myself as a leader now and talking with the kids and everything.

This quote also demonstrates how a history of success, in this case based on verbal and nonverbal cues from fellow educators, leads to increased efficacy. This was a similar experience for another infant educator who reflected, "And at first I wouldn't talk so much, but I would just be there to watch them. I wouldn't be like talking to them much. [Now] I feel like when I talk to them they're engaging and they're able to repeat words after me. It's pretty amazing." This educator is receiving positive feedback from children in her classroom that bolsters her confidence.

Several participants reported a number of different attitudinal changes based on their coaching experience (theme 2). These included being more intentional in their classroom practices, more confident in the use of language, and being more open-minded. These responses reflect the increasing level of self-confidence gained through their coaching relationships that allows educators to follow the lead of the child. This quote demonstrates an educator expressing a new level of confidence and comfort:

Um, I think I'm more confident. I still get kind of nervous, but it's like I know but it's like knowing even more helps you feel a little more confident But, uh, usually I just have to stop and think and try to remember everything. But I do feel more confident, like I know. And I feel like I'm more confident to help them work through conflicts and I just feel like I'm a better teacher because they're not just learning their colors, they're learning words to express their feelings and just all these different words to help them communicate so they can do better in the future.

Another interview participant, who works with younger toddlers and has been in the field for a year, described her attitude change and intentionality this way: "I would say the biggest thing is I'm more intentional about pretty much everything that I do throughout the day." This reflects how self-efficacy is linked to goal-setting, which requires intentionality and effort (Berry & West, 1993; Wells-Parker et al., 1990). In addition, a more veteran educator used rich language as she discussed how she has become more open-minded, flowing from her increased perceptions of competency to support infant and toddler language development:

I think that now that I've gone through the program, I'm a lot more open-minded than I was before I started. Before it was just it was going to be my way or no way. Now it's just whatever, let the chips fall where they may, and we go with the flow. Yep. Letting them make their own choices rather than me trying to tell them what they are going to do.

Perceived Self-Efficacy in Interactions with Children

Perhaps due to their increased feelings of competency to support language development through the *More Than Baby Talk* practices, educators reported increased self-efficacy, in this case personal self-efficacy appraisal, in their overall interactions with children. The themes that emerged from the qualitative analysis of the question about perceived changes in interactions with children in the educators' classrooms included: 1) overall more language in the classroom; 2) being more attuned to the children; 3) more variety in interactions; and 4) gaining skills. Educators' comments about their overall increase in language used in the classroom were the most prevalent. These reflections included reporting that they are asking more open-ended questions, using more words, using non-verbal language like gestures or baby sign language more often, and providing more opportunities for children to talk. This last theme suggests that with their growing feelings of competence, educators are more able to make space for children to respond or to initiate language. One lead educator of toddlers reported "I just make it a point to make sure that I'm using a lot of language and communicating when I'm explaining things. Just being very descriptive." This statement reflects both the educator's increased comfort with providing language support as well as internalizing specific *More Than Baby Talk* practices. Another participant who has been in the ECE field for about a decade noted the change in her practice this way:

There was times of the day that I didn't even realize were good times [to use language]. Getting chatty and talking to them . . . especially when they're eating, you know. I have a lot more chatty now, you know? I do a lot more talking when they're eating. Basically, just more talking and interacting. I guess a lot more with words.

As the educator builds her perceptions of herself as competent in this domain she is able to extend her practice across the day. Another toddler lead educator described how her interactions had changed in this way, specifically referencing feedback from her coach: "Um, I was doing less talking before. And now I'm doing more talking. Talk, talk, talk, talk. I hear [my coach] say, don't ever stop talking. I always talk, talk, talk. It's not only helping me, it's helping our kids, too. So, that's what I learned from the *More Than Baby Talk* program.,,"

Several participants reported that they are more attuned to the children in their care since their work on *More Than Baby Talk* (theme 2). This again is reflective of how their increased competence allows them freedom to really engage with their children. This included being better able to engage the children in talk and focusing on what the children were interested in, in order to incorporate more

language in the day. A lead educator who has been in the field for a couple years reported, noting the non-verbal cues from the children that reinforce her feelings of efficacy:

So I think that that's great because I think before I would just talk to the kids instead of allowing them the opportunity to, you know, process and then what they respond, like they don't actually respond verbally but physically you know that they understand what you're saying because they either do what is asked or they look at you to give you the impression they understand.

A lead educator who works with two- and three-year-olds responded: "I am paying more attention, actually doing that with each child individually."

The third theme that emerged was using a wider variety of language and communication, both verbal and non-verbal, in the classroom. This was reflected in incorporating baby sign language and singing, in addition to talking. A participant new to the field reflected that: "Before I felt like I was talking to them. I could see the difference in not talking to them as much. Like, I guess, you know, I would talk to them I felt like it was more appropriate. You know? Now we sing, we talk, some of us dance."

Gaining in skill was also mentioned by a few educators (theme 4). This theme supports the increases seen in self-efficacy in the quantitative analysis – over time this coached group showed increases in both their instructional practices and their ability to model language. One assistant educator acknowledged how much her ability to read aloud has improved, which related directly to one of the *More Than Baby Talk* practices:

I am interacting through reading with the kids and put their names in the songs and the books and stuff more. Once you read a book to a child in the classroom and you add their name to the story so that is more exciting. If you get more involved, sing a song and add their name they get excited.

A lead educator reported becoming more skilled at positive interactions, noting "I just think that I'm even more positive and just learning for instance, how to not say no or not say don't do this, but just communicate in more positive ways than before."

Outcome Efficacy Beliefs

Educators were also able to reflect on their outcome efficacy as they described their perceptions of how the children have benefitted from the program. The two primary ways that coaching participants perceived that the children have benefitted were 1) children use more language and 2) children elicit more language. Other themes that were mentioned but endorsed less often were the children's excitement and that children comprehend more. In terms of the first theme, interview participants acknowledged that while some of the increase may be because of children's maturation, they noticed more language use among the children, again providing them evidence of their success in developing new skills. A educator of younger toddlers who has been in the ECE field for 20 years reported: "[They are] not just repeating now, it's like they're saying words that they remember because we've been using it all throughout the day and stuff." A educator of infants with similar years of experience noted that, "Some of them are [pre] verbal, they're signing to me, letting me know, ok, this is what I want . . . they love the language. So this program has really helped a lot." A educator new to the field reported how the children were helping to build her efficacy through their responsiveness:

I'm not saying that they didn't understand or comprehend what I was saying to them before but actually having them respond back just lets me know they understand the constant talking and communicating with them is working.

Participants also noted that the children are seeking language and engagement more often (theme 2). For example, one coaching recipient, who had recently entered the field, reported that the children in her class benefitted because, "they show me a lot of stuff in their room . . . and they want me to get chatty with them." A second educator, this one a veteran with almost two decades in the ECE field, had a similar experience, reporting, "They have [benefitted] a whole lot. They have because they know in the morning when I come in they want me to say A-B-C and we'll sing the ABCs. So yeah, they have."

Discussion

Taking a mixed-methods approach, the current study aimed to investigate the added value of coaching for building the self-efficacy beliefs of educators with regard to supporting early language and communication among infants and toddlers. Two factors underlying participants' self-efficacy were identified: language modeling and instructional practices. For the quantitative research question, results indicate that, overall, there was growth for both groups, workshop only and workshop plus coaching, from Time 1 to Time 2. At Time 2, participants in the workshop plus coaching group had higher scores on perceptions of self-efficacy in language modeling relative to participating in a language-focused workshop only. Moreover, interaction analysis provided further evidence for the benefits of adding coaching to the professional development model. There were significant differences in the change in ratings of self-efficacy for both instructional practices and language modeling overtime in the coached group compared to the group that only participated in the workshop.

The qualitative results from the follow-up interviews with the coached group further support and provide rich explanation of the quantitative findings. Through interviews, educators described how participating in the program had an impact on themselves, their interactions with children, and the children's language/communication development. Compared to before the program, the educators reported that they were providing more language input for the children in their care as well as attitudinal changes in their practice, such as being more intentional in their language modeling and instructional practices. They also reported that there is more language overall in their classrooms, that language has more variety, they are more attuned to the children, and that children's language skills have improved. Improved educator skills that were mentioned included reading aloud and being more positive in interactions – moving away from just monitoring children and telling them “no” or not to do something. Last, when educators were asked how the program had indirectly benefited the children, they reported children's greater expressive language as well as greater engagement in eliciting language from educators.

These results show that educators who did participate in coaching showed greater gains at the end of the program than participants who did not receive coaching, differing from prior research showing little impact on educator knowledge (e.g., Koh & Neuman, 2009; Neuman & Wright, 2010). One potential explanation for the discrepancy may be a function of selection bias. Participants in the current study were not randomly assigned to receive coaching, and instead, volunteered to be in the coaching group. Thus, these participants may represent educators who were highly motivated to learn how to support the language development of infants and toddlers and subsequently showed gains at the end of the program based on their eagerness and openness to learning rather than the coaching. That previous studies using random assignment of educators to language-focused professional development programs find little impact on educator knowledge (e.g., Piasta et al., 2017) supports the possibility that selection bias may play a role in findings. The complexity of this issue is compounded by the literature that suggests coaching relationships should be mutually agreed upon (Rush & Shelden, 2020) and should be non-directive and nonhierarchical (Berg & Karlsen, 2007). While randomly assigning participants to receive coaching would address selection bias, randomly assigning participants may undermine the personal autonomy and control that serve as a foundation for a capacity-building coaching relationship.

These results, however, are consistent with other studies that find that educators experience greater self-efficacy after receiving coaching (Brant, 2015; Ottley et al., 2015; Piasta et al., 2017; Tschannen-Moran & McMaster, 2009). Having the dedicated time and personalized support from a coach to implement the content learned in the workshop within the classroom setting may provide educators with the professional development resources they need to build their knowledge base about infant/toddler language development and their confidence in implementing that knowledge. These results are consistent with adult learning theory that suggests that when adults have opportunities to actively participate in their own learning and focus on practical solutions to everyday challenges (Trivette et al., 2009; Trotter, 2006), they experience optimal conditions for learning. The reports from educators on

the impact of the program suggest that having coaching support helps them to apply new knowledge of infant/toddler language development and identify ways in which they can be more intentional in incorporating more language into their daily routines and activities with infants and toddlers. In addition, the coaching support appears to provide opportunities for educators to practice and receive feedback that may translate into increased frequency of language supports in the classroom.

These results suggest that coaching may add value to the professional development experiences of early childhood educators when it comes to promoting their self-efficacy with regards to the use of language-supportive strategies in the childcare classroom setting. Decades of literature on educator self-efficacy links high levels of self-efficacy to positive educator behaviors and student outcomes and supports that educators with higher levels of efficacy have been found to exhibit greater enthusiasm for their work (Allinder, 1994; Burley et al., 1991; Guskey, 1988), greater commitment to teaching (Coladarci, 1992), and are more likely to stay in teaching (Burley et al., 1991). Self-efficacy beliefs of educators have been related to practitioner-driven outcomes such as achievement, motivation and the learner's own sense of efficacy (Anderson et al., 1988; Tschannen-Moran & McMaster, 2009). In addition, self-efficacy beliefs, and especially beliefs about one's ability to affect change, predict how knowledge and skills are used to improve one's own performance as well as affect child behavior and outcomes (Delfin & Roberts, 1980; Doolittle et al., 1993; Fleet & Patterson, 2001). The results of this study considered in light of existing literature indicate that further investigation may be needed to explicate the benefits coaching may have on educator self-efficacy, as well as on child development outcomes.

This study also adds to the literature by allowing two unique perspectives afforded by the mixed-method focus. The study has allowed us to separate impact of coaching from the specialized training that was used to transfer knowledge, a gap acknowledged by Zaslow et al. (2010). The qualitative data collected allowed us to understand through the educators' own words the benefits that were derived from this particular form of professional development in early childhood education. Studies on early childhood educator professional development are largely quantitative and rarely focus on the voices and perspectives of participants. This study addresses that gap by including the voices of participants to allow us to better understand the positive impacts of their experiences participating in professional development characterized by a skill-building workshop and intensive follow-up coaching.

Limitations and Future Directions

While the study adds to the literature on the links between coaching and educators' self-efficacy beliefs with regard to supporting infant/toddler language development, the study has its limitations. First, while we gathered self-report data from participants, budgetary constraints precluded examination of behavioral outcomes. Without these direct assessments of educator practice or child language outcomes, we are limited in the inferences we can make of the potential impact of the *More Than Baby Talk* program on behavioral outcomes. As there are mixed findings as to the impact of coaching on educator practice and child outcomes (e.g., Markussen-Brown et al., 2017), including direct assessments of educator practice and child outcomes in future studies of language-focused coaching for infant/toddler educators would be an important area for future research.

A second limitation is the lack of random assignment of participants to either receive coaching or to a control group. This limitation raises the possibility of selection bias playing a role in the findings. As participants volunteered to participate in the workshops and/or coaching, the sample may have been biased toward early childhood professionals who were most motivated to learn about young children's language and communication development. To reduce the likelihood of selection bias, the use of a randomized control trial would be necessary for future studies.

A third limitation is the focus exclusively on educators in center-based childcare settings. This focus limits the generalizability of the results to educators working in other settings (e.g., family childcare). A prior study found that coaching in home-based programs was particularly impactful: "Home providers who received coaching, in fact, demonstrated changes in practice so dramatic as to be

essentially on par with quality practices in center-based care” (Neuman & Cunningham, 2009, p. 557). Extending these types of professional development efforts to other settings is essential given the fact that care outside of child care centers is most prevalent in the United States (Tonyan et al., 2017). As providing coaching support outside of a center-based setting may present different challenges, such as providing language supports to infants and toddlers in mixed age-group settings, the content and delivery of coaching supports in non-center-based settings may have to be adapted to meet the needs of educators in these settings. Testing the implementation of language-focused coaching within different settings may provide valuable information on how coaching may need to be adapted for different populations of educators.

Implications

Despite these limitations, the study begins to fill a substantial void in the literature. By focusing on how professional development is linked to the self-efficacy of educators to support the language development of infants and toddlers, the study bridges the gap from research to practice. Although the sample size was modest, the findings suggest that in-service workshops when paired with follow-up coaching to provide educators with opportunities to practice, reflect on, and receive feedback on target practices may result in increased practitioner self-efficacy beliefs. This study paves the way for additional studies that might capitalize on these findings and further explicate how increased self-efficacy beliefs impact utilization and mastery of target practices and enhance infant and toddler outcomes.

This study also has the potential to impact the field of professional development by providing a framework for instituting multi-tiered infrastructure for professional development within the early childhood workplace. This study employed a network of early childhood coaches who were charged with building the capacity of early childhood educators. The coaches were monitored and supported by administrators who had expertise in the content the coaches were teaching and the coaching interaction style the coaches were using to deliver the content in a capacity-building manner. This study demonstrates how modest organizational resources can be used to scaffold adult learning and proficiency of early childhood educators on a topic with far-reaching developmental benefits to young children. The approach used in this study is a promising approach for providing effective and individualized professional development throughout the tiers of an organization.

Taken together, the results of this mixed-methods study provide support for the value of including a coaching component along with specialized training in professional development efforts around language and communication development for infant and toddler educators, an area that has seen little focus in the research literature. The use of follow-up coaching when paired with professional development initiatives can help set our youngest children on a trajectory that will facilitate smooth transitions to school and support success.

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