LANGUAGE AND PLAY EVERYDAY: ENHANCING EARLY INTERVENTION

PROVIDER KNOWLEDGE AND USE OF NATURALISTIC

COMMUNICATION INTERVENTIONS

by

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THESIS ABSTRACT

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Title: Language and Play Everyday: Enhancing Early Intervention Provider Knowledge and Use of Naturalistic Communication Interventions

The current study used a quasi-experimental comparison group pre/post-test design to examine the effectiveness of the Language and Play Everyday (LAPE) program for improving EI/ECSE practitioners' knowledge, use of, and confidence in using Caregiver Implemented-Naturalistic Communication Interventions (CI-NCIs). Participants included 20 EI/ECSE practitioners across IDEA-related disciplines, eight with prior LAPE experience. 10 practitioners took part in a new, more intensive LAPE program, and 10 did not. Analysis of pre/post-questionnaires revealed that practitioners with prior LAPE experience reported significantly higher use of CI-NCI skills and mean self-efficacy ratings than those without LAPE experience. Practitioners who participated in the new, more intensive program used significantly more skills and scored significantly better on a knowledge test than those who did not participate, even when controlling for prior LAPE experience. These findings indicate that the LAPE program is a promising model to train EI/ECSE practitioners across disciplines in CI-NCIs.

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INTRODUCTION AND LITERATURE REVIEW

Early language deficits can lead to long-lasting impacts on social and emotional development and academic performance (Warren & Rogers-Warren, 1983). Although some young children with language delay eventually "catch up" to same-age peers naturally, many require evidence-based communication interventions provided by skilled professionals in order to progress (Rescorla, 2013). This is especially true for young children whose communication deficits are associated with developmental delays and disabilities (e.g., Harlaar, Hayiou-Thomas, Dale, & Plomin, 2008; Snowling, Bishop, & Stothard, 2000). Language impairment affects 5-8% of typically developing preschool children and 70% of preschool children with disabilities (Nelson, Nygren, Walker, & Panoscha, 2006). This high prevalence and variety of long-term impacts warrant the widespread call for early, evidence-based intervention to be provided to all young children with communication needs.

Early Intervention/Early Childhood Special Education (EI/ECSE) professionals serving young children with communication deficits need to be able to skillfully and empathetically implement evidence-based communication interventions within a family-centered framework. Competency in these skills is critical and should be considered a prerequisite for providing high-quality services to young children with disabilities (e.g., American Speech-Language Hearing Association [ASHA], 2008; Individuals with Disability Education Improvement Act [IDEA], 2004). Caregiver-Implemented-Naturalistic Communication Intervention (CI-NCI) is an evidenced based intervention that meets policy and professional standards for being family-centered, easy to

implement, and highly effective for children with communication impairments across a variety of diagnoses (e.g., Cable & Domsch, 2011; Kong & Carta, 2011; Mancil, 2009; Lane, Lieberman-Betz, & Gast, 2016). Parents and caregivers participating in CI-NCI programs are trained by EI/ECSE practitioners to use specific strategies during everyday routines and activities in order to improve their children's communication skills (Rakap & Rakap, 2014). Knowledge about and practice in coaching parents to use CI-NCIs should be a core component of professional development for EI/ECSE practitioners who work with young children with communication impairment, at both the pre-service (i.e., graduate school) and in-service (i.e., "on-the-job") training levels.

Evidence-Based Communication Interventions for Young Children

Naturalistic Communication Interventions. Naturalistic Communication Interventions (NCIs) are a broad evidence-based class of intervention approaches for improving communication skills in young children. NCI strategies were developed after research demonstrated that skills acquired through clinician-directed, highly structured approaches are often not generalizable to natural contexts or maintained over time (e.g., Delprato, 2001; Hart & Risley, 1968). In contrast to traditional clinician-directed approaches, NCIs are designed to systematically provide children with consistent opportunities to learn foundational communication skills by arranging everyday routines and activities to necessitate communication (Paul & Norbury, 2011).

A variety of NCI strategies and programs have been developed and investigated in the past five decades, including incidental teaching (e.g., Hart & Risley, 1975), pivotal response training (Koegel, Koegel, Harrower, & Carter, 1999), focused stimulation (Girolametto, Pearce, & Weitzman, 1996), and milieu teaching and its variants, such as

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enhanced milieu teaching (EMT), prelinguistic milieu teaching (PMT) and responsive education-prelinguistic milieu teaching (RE-PMT) (e.g., Hemmeter & Kaiser, 1994; Warren, et al., 2006; Warren & Kaiser, 1986; Warren, Yoder, Gazdag, Kim, & Jones, 1993). Across these various techniques and programs, several fundamental elements of NCIs have emerged, including:

> (1) daily routines and activities within natural environments (e.g., home, daycare, and community) serve as the primary intervention context; (2) the adult providing intervention follows the child's lead and interests; (3) the communication skills addressed are necessary for the child's participation in developmentally appropriate activities (e.g., sharing a meal); (4) the adult implementing intervention is highly sensitive and responsive to the child's communicative behaviors; and (5) the adult interacts regularly and is highly familiar with the child (Rakap & Rakap, 2014).

Research has repeatedly demonstrated the effectiveness of numerous NCI programs for improving young children's skills across several language domains. For example, milieu teaching has been shown to increase children's mean length of utterance (MLU) (e.g., Alpert & Kaiser, 1992), focused stimulation has been shown to increase children's use of targeted vocabulary and syntactic structures (e.g., Camarata & Nelson, 2006; Wolfe & Heilmann, 2010), and pivotal response training has been shown to increase children's use of functional utterances (e.g., Coolican, Smith, & Bryson, 2010). A number of recent experimental studies and randomized control trials (RCTs) have demonstrated that the benefits of NCIs extend across young children with a variety of diagnoses, including Down syndrome, Autism Spectrum Disorder, and other

developmental disabilities (e.g., Kasari, et al., 2014; Wright, Kaiser, Reikowsky, & Roberts, 2013). Furthermore, multiple summative reviews have synthesized and analyzed this large literature base, underscoring the effectiveness of NCI strategies and programs (e.g., Cable & Domsch, 2011; Kong & Carta, 2011; Lane, Lieberman-Betz, & Gast, 2016; Mancil, 2009).

Caregiver-Implemented-Naturalistic Communication Interventions (CI-NCI). Within the NCI literature, there is a well-established evidence base supporting the unique CI-NCI treatment model, wherein parents and caregivers are trained to be the primary agents of intervention by regularly using NCI strategies with their children. The CI-NCI model integrates the evidence supporting NCIs with additional evidence supporting parents and caregivers as their children's best teachers (e.g., Brofenbrenner, 1994; Kaiser, 1993). Rakap & Rakap (2014) highlighted several factors underpinning the fundamental role played by primary caregivers in their children's language development, including:

(1) their intrinsic motivation to encourage their children's communication skills; (2) the frequency and regularity with which they interact with their children; (3) their familiarity with their children's needs and preferences; and (4) the research demonstrating that everyday interactions with a dedicated caregiver are critical to language development (Rakap & Rakap, 2014).

Indeed, recent experimental findings indicate that parents and caregivers are able to effectively implement NCIs with their toddlers, and that these interventions create positive changes in the children's language skills (e.g., Brown & Woods, 2015; Roberts, Kaiser, Wolfe, Bryant, & Spidalieri, 2014; Wright & Kaiser, 2017). In addition, several

systematic reviews and meta-analyses have consolidated this literature base,

strengthening the evidence for CI-NCIs as an optimal method of treating young children

with communication delays. For example, Roberts and Kaiser (2011) found that parent-

provided interventions can be just as effective—and sometimes even more so—than

clinician-provided interventions.

In-service and Pre-service Preparation for EI/ECSE Practitioners Across

Disciplines

Communication is the most common area of concern addressed on Individualized

Family Service Plans (IFSPs), surpassing goals written for all other developmental

domains (Brown & Woods, 2013). Practitioners hailing from a wide variety of

disciplines provide EI/ECSE services to young children and their families, including but

not limited to speech-language pathologists (SLPs), occupational therapists (OTs),

physical therapists (PTs), and EI/ECSE developmental specialists (Bruder, Mogro-

Wilson, Stayton, & Dietrich, 2009; Edwards & Gallagher, 2016). Traditionally, the

groups most likely to provide communication services have been SLPs (practitioners

trained specifically to serve individuals with communication impairment) and EI/ECSE

developmental specialists (practitioners trained to serve children with disabilities across

developmental domains). However, as transdisciplinary care rises, practitioners in related

fields (e.g., PT and OT) are increasingly being called upon to address communication

needs (e.g., King, et al., 2009; Berman, Miller, Rosen, & Bicchieri, 2000). Therefore,

knowledge and competence in evidence-based communication interventions is pertinent

for all professionals working in EI/ECSE (Brown & Woods, 2013).

Knowledge and competence in providing CI-NCIs is particularly warranted when considered alongside the current call for "family-centered" EI/ECSE service delivery. Beyond the federal mandates instituted by Part C and Section 619, Part B of IDEA (2004), a "family-centered" delivery model is advocated for by multiple national organizations. For example, the Council for Exceptional Children Division of Early Childhood (DEC, 2014) recommends that EI/ECSE practitioners work directly with families to increase caregiver ability to support children's communication skills by using communication-enhancing strategies delivered within children's natural environments. Practice guidelines established by the American Speech-Language Hearing Association (ASHA, 2008) echo this call for caregiver capacity-building when serving young children with communication impairments, and the National Association for the Education of Young Children (NAEYC, 2012) EI/ECSE developmental specialist preparation standards include building family and community relationships.

However, the Center to Inform Personnel Preparation Policy and Practice in Early Intervention and Preschool Education (Center to Inform Personnel Preparation, 2008) published national survey data revealing that ECSE practitioners across disciplines and geographic regions are unprepared to provide family-centered services and supports. For example, only 22% of states' EI/ECSE certification requirements aligned with national guidelines from organizations including the NAEYC, DEC, and Council for Exceptional Children (CEC). Furthermore, states were found to frequently apply standards inconsistently, word certification requirements vaguely or confusingly, and make access to certification requirements difficult and time-consuming (Center to Inform Personnel Preparation, 2008).

Numerous research studies have likewise documented the difficulty EI/ECSE practitioners experience in putting national mandates and programmatic expectations for family collaboration into action in their everyday practice, particularly in the context of home visits (e.g., Salisbury, Woods, & Copeland, 2010; Campbell & Sawyer, 2007; Peterson, Luze, Eshbaugh, Jeon, & Kantz, 2007). For example, Campbell and Sawyer (2007) examined fifty EI home visits, and described the majority of providers as using traditional, clinician-directed practices such as direct treatment of young children. Indeed, it appears that many EI/ECSE practitioners continue to strongly favor one-on-one interactions with children, as opposed to building triadic relationships with children and their caregivers (e.g., Wilcox, Guimmond, and Kim, 2010; Campbell & Sawyer, 2009). A systematic review conducted by Sewell (2012) proposed that professionals who work with young children experience difficulty with family capacity-building activities like caregiver education and coaching, due to a dearth of training opportunities and lack of preparation.

Similarly, in focus groups conducted by the Harvard Family Research Project (2006), Early Childhood Education (ECE) practitioners revealed that they feel underprepared to engage and work with families. A lack of collaboration between providers and the families they serve makes the adoption of CI-NCIs – or any other caregiver-implemented intervention – virtually impossible, despite the overwhelming evidence in favor of such interventions. These findings suggest that professionals across disciplines who work with young children may require additional training regarding both the "how" and the "why" of partnering with families to improve young children's communication skills.

CI-NCI pre-service preparation and current practices. Professionals across IDEA-related disciplines undergo distinct pre-service programs of study, resulting in variable amounts and types of training on evidence-based communication interventions for young children. Most pre-service SLPs are given only minimal opportunity to observe or practice the implementation of CI-NCIs during graduate school (Francois, Coufal, & Subramanian, 2015). This substantial limitation in SLP preparation at the graduate level implies that EI/ECSE practitioners from other disciplines are provided even lighter pre-service CI-NCI training, as these disciplines inherently place less emphasis on communication. Indeed, most developmental specialists have a knowledge base rooted in general child development, as opposed to specialized expertise within any specific developmental domain (Brown & Woods, 2013). Additionally, there is no evidence to suggest that OTs and PTs nationwide receive any substantive pre-service training in CI-NCIs specifically. A modest pool of literature indicates that OT and PT graduate programs provide only limited education and training in communication development and disorders more broadly (e.g., Myers & O'Brien, 2015; Sylvester, Ogletree, & Lunnen, 2017), despite increasing emphasis on interprofessional education and transdisciplinary practice by national professional organizations such as the American Occupational Therapy Association (AOTA) (e.g., Fisher, 2013) and the American Physical Therapy Association (APTA) (e.g., American Physical Therapy Association, 2009; Wise, Frost, Resnik, Davis, & Iglarsh, 2015).

CI-NCI in-service training programs. Because EI/ECSE practitioners may not be adequately prepared at the pre-service level, it is critical for in-service professional development experiences to "fill in the gaps" with essential knowledge and opportunities

for practical application of skills related to evidence-based, family-centered communication interventions. Unfortunately, it appears that concerted attempts to provide such meaningful learning experiences are just as scarce at the in-service level. The Center to Inform Personnel Preparation (2007a; 2007b) reported that only 20 states have established in-service training systems for Part C EI providers, and only 23 states have similar systems for Part B Section 619 ECSE providers. Moreover, no national data reflecting CI-NCI-specific in-service training efforts is available. A comprehensive search of the literature published over the past two decades yielded only one research study evaluating a specific in-service program for improving EI/ECSE practitioners' use of CI-NCIs (Brown & Woods, 2013).

Brown and Woods (2013) described Communication Coach, a multi-componential online program for improving home-visiting EI/ECSE practitioners' ability to coach primary caregivers in NCI strategies. The program's instructional methods were based on empirically supported principles of adult learning (Knowles, Holton, & Swanson, 2005; Bransford, Brown, & Cocking, 2000), and included:

> (1) encouraging participant self-direction and autonomy; (2) situating learning activities within the context of EI service delivery to augment contextual relevance; and (3) providing authentic examples of targeted behaviors and sustained opportunities for active practice of targeted behaviors (Brown & Woods, 2013, p. 224).

The program's curricular content included communication development, NCIs (with an emphasis on EMT), and coaching caregivers to implement intervention with their

children using targeted techniques, including conversation and information sharing, direct teaching, demonstration, caregiver practice, and feedback (Brown & Woods, 2013).

EI/ECSE practitioners participating in Communication Coach (Brown & Woods, 2013) progressed through five asynchronous, six-hour online content units, including: Setting the Stage for Communication Development, Early Communication, Expanding Communication, Communication for Conversations, and Caregiver Coaching. Participants followed the Read, Observe, Practice, Exhibit (R.O.P.E.) (Brown & Woods, 2010) method, developed to support adult learning from the establishment of foundational knowledge through active application of skills. After completing assigned readings, participants observed video examples of caregiver coaching and answered questions about the targeted techniques demonstrated in these videos. Participants then completed applied assignments, including developing educational materials for caregivers and home visit agendas incorporating targeted coaching techniques. Upon completion of these online training modules and applied assignments, participants documented their use of targeted skills by video-recording a 10- to 15-minute interaction with a caregiver and child.

The Brown and Woods (2013) program evaluation found that, following participation in Communication Coach, home-visiting EI/ECSE practitioners increased their knowledge of communication development and intervention for young children, and their ability to apply this knowledge during home visits with children and primary caregivers. Participants demonstrated specific competencies in identifying children's communicative acts, developing appropriate communication goals, and collaborating with caregivers to create individualized plans for the use of NCI strategies during daily

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routines and activities. These results suggest that multi-componential training programs incorporating evidence-based adult learning principles, and specifically providing opportunities for active practice of target skills, may lead to increased EI/ECSE practitioner use of CI-NCIs.

Multiple additional studies have described specific CI-NCI programs and discussed in detail their implementation with parents and caregivers by expert professionals (e.g., Brown & Woods, 2016; Wright & Kaiser, 2017), but have failed to describe the training mechanisms by which these professionals were initially taught the CI-NCI model. For example, studies by Wright and Kaiser (2017) and Roberts, Kaiser, Wolfe, Bryant, and Spidalieri (2014) described EI/ECSE practitioner use of the Teach-Model-Coach-Review (TMCR) model (Kaiser & Roberts, 2013) to train parents of young children with Down syndrome the EMT Words and Signs intervention. TMCR is a manualized protocol for coaching parents to use NCI strategies that incorporates six essential adult learning methods, as described by Trivette, Dunst, Hamby, and O'Herin (2009). Results from Wright & Kaiser (2017) and Roberts, et al. (2014) demonstrated the effectiveness of this model for teaching parents to implement EMT Words and Signs. Unfortunately, however, neither study reported with any considerable detail the processes by which EI/ECSE professionals were trained to implement the caregiver coaching program.

Beyond the limited experimental research on EI/ECSE in-service training programs specific to CI-NCIs, an article written by Woods, Wilcox, Friedman, and Murch (2011) provided a review of "recommended and promising" practices for SLPs working in EI/ECSE. These strategies for enhancing SLPs' ability to train caregivers in

CI-NCIs were informed by principles of adult learning (e.g., Trivette, et al., 2009; Trivette & Dunst, 2007) and may prove useful in the development of future CI-NCI training programs. Woods, et al. (2011) recommended facilitating caregiver engagement, confidence, and competence with the Participatory Adult Learning Strategy (PALS) (Dunst & Trivette, 2009), an adult learning model comprising four major components: (1) introduction, including the trainer introducing and illustrating targeted knowledge and skills; (2) application, including the practitioner applying knowledge and skills and evaluating this experience; (3) informed understanding, including guided self-reflection of their own understanding and mastery of targeted knowledge and skills; and (4) repetition, involving practitioners identification of the next step in their learning process.

Woods, et al. (2001) additionally recommended use of scaffolding techniques, including reflective suggestions, linking information sharing to family priorities, and hypothesizing and experimenting, to individualize the caregiver coaching process. Although the recommendations made by Woods, et al. (2011) were designed with SLPs in mind, the role of all EI/ECSE practitioners in supporting communication development suggests that the recommendations may logically extend to providers across disciplines. Unfortunately, many of the recommended practices have not been operationalized for use as part of CI-NCI in-service training programs or examined in experimental studies specific to the use of CI-NCIs by EI/ECSE practitioners.

Family-centered in-service training programs. Outside of the research specific to CI-NCI training programs, a considerable amount of research has documented the myriad shortcomings of in-service EI/ECSE training systems with respect to family-centered practices more broadly. In electronic surveys and phone interviews conducted

by Bruder et al. (2009), only 11 of 51 (21.5%) coordinators of Part C EI programs and 0 of 49 (0%) coordinators of Section 619 ECSE programs reported providing training content regarding partnering with families. Similarly, the Center to Inform Personnel Preparation (2007a; 2007b) reported that only 11 of 20 (55%) surveyed states provided training content focused on family collaboration to EI providers, and only 4 of 23 (17%) surveyed states provided family-centered training content to ECSE providers.

Not only do these stark numbers reflect limited training systems, but the systems that do exist are often flawed. A literature review conducted by Campbell, Chiarello, Wilcox, and Milbourne (2009) highlighted common weaknesses of the EI/ECSE in-service training systems currently in place across the nation. Key shortcomings included the often voluntary nature of trainings, and the financial burden many training programs place on individual EI/ECSE providers, either through direct costs or through loss of revenue while engaged in training commitments.

To date, the most well-documented model of EI/ECSE in-service training for increasing family-centered practices is based on the Family-Guided Routines-Based Intervention (FGRBI) approach to early intervention service delivery (Woods, Kashinath, & Goldstien, 2004). The FGRBI Research Endeavor aspires to support young children's skills across developmental domains by offering evidence-based procedures for caregiver coaching and capacity building, as well as collaborating with community-based Part C programs to provide professionals with effective training in family-centered service delivery ("FGRBI Approach," n.d.). Over the past decade, researchers associated with FGRBI have developed and refined definitions of targeted strategies for use by EI/ECSE providers in promoting parent and caregiver education and coaching (e.g., Basu,

Salisbury, & Thorkildsen, 2010; Friedman, Woods, & Salisbury, 2012; Salisbury, et al., 2010; Woods, et al., 2004). Most recently, the following FGRBI caregiver coaching strategies have been targeted:

> (1) direct teaching, (2) demonstration, (3) caregiver practice with feedback, (4) observing or data collection, (5) guided practice with feedback, (6) problem solving, and (7) video feedback with reflection (Krick-Oborn & Johnson, 2015, p. 160).

In the past five years, FGRBI strategy use has been a targeted participant outcome of multiple experimental studies evaluating EI/ECSE training programs. For example, articles by Krick-Oborn and Johnson (2015) and Marturana and Woods (2012) examined the effectiveness of two distinct in-service programs for improving home-visiting EI/ECSE providers' ability to coach caregivers in embedding intervention into daily routines and activities. Krick-Oborn and Johnson (2015) utilized a multiple-baseline research design to examine a family-centered training program comprising a four-hour workshop followed by six weeks of performance feedback based on video review of home visits. Marturana and Woods (2012) examined the Distance Mentoring Model (DMM) ("Distance Mentoring Model," n.d.), a multi-componential, family-centered training program involving face-to-face workshops, peer and expert mentoring, and performance feedback based on video review. Although each training package was unique, both programs targeted a number of FGRBI coaching strategies.

Kick-Oborn and Johnson (2015) found that workshops alone led to minimal changes in EI/ECSE practitioners' use of targeted caregiver coaching strategies, whereas all participants increased their use of strategies after also receiving six weeks of

performance feedback. Similarly, Marturana and Woods (2012) found a significant

increase in the use of targeted coaching strategies following participation in a training

workshop and a single feedback session. These results suggest that "sit and get" forms of

professional development, such as standalone workshops and seminars, are insufficient to

bring about significant change for EI/ECSE practitioners. Instead, multi-componential

programs involving active application of newly-learned skills and specific performance

feedback increase provider use of family-centered, capacity-building strategies.

  A comprehensive search of the family-centered in-service training literature

generated only one additional article beyond the two recent FGRBI-based studies.

Campbell and Sawyer (2009) described a training program to promote EI/ECSE provider

adoption of a participation-based service delivery approach. A participation-based

approach emphasizes the importance of building triadic relationships amongst the

provider, caregiver and child, considering the child and/or caregiver to be the leader of all

activities, and providing intervention during daily routines within natural environments.

The training package in this study shared many similarities with the FGRBI-based

programs, combining group workshops and active practice via assigned activities

completed during home visits.

  Campbell and Sawyer (2009) found that 60% of EI/ECSE providers used

participation-based practices at program completion, while the remaining 40% continued

to provide traditional services. Notably, the authors found that provider beliefs and

perceptions regarding EI/ECSE service delivery closely aligned with the category of

practices in which they more frequently engaged. Participants whose initial beliefs more

closely reflected traditional practices were less likely to engage in targeted participation-

based behaviors, and those who believed in the importance of providing family-centered services prior to training demonstrated greater adherence to such practices following training. This finding is a valuable addition to the professional development literature. The authors suggest that family-centered EI/ECSE training programs prioritize providing participants with straightforward explanations of the principles underlying the skills they are expected to adopt, in order to promote the alignment of these principles with participants' personal beliefs (Campbell & Sawyer, 2009).

While FGRBI-based programs are the most well-researched and only one other study evaluating a family-centered in-service training program for EI/ECSE practitioners has been published, additional recommendations have been proposed to guide the design and implementation of future training programs with a family-centered focus. Recently, for example, Dunst (2015) presented key features of evidence-based professional development and provided suggestions for applying these principles within family-centered EI/ECSE training efforts. Recommendations for training included:

(1) giving explicit explanation and illustration of targeted content knowledge and coaching behaviors; (2) creating opportunities for participants to engage in active and authentic job-embedded practice; (3) creating opportunities for participants to reflect on their understanding and mastery of targeted knowledge and behaviors; (4) providing coaching, mentoring, and/or performance feedback developed and delivered by a professional development specialist; (5) providing ongoing follow-up supports by professional development specialists, coaches, and peers to reinforce newly-learned knowledge and behaviors; (6) making programs of sufficient duration and intensity to provide multiple opportunities for practice; and

(7) developing and implementing programs which include as many of the previously described features (1-6) as possible, in order to maximize supports for participant learning (Dunst, 2015).

Multiple additional models of in-service training for promoting family-centered EI/ECSE delivery have been developed (e.g., Childress, Raver, Michalik, & Wilson, 2013; Dunst, Trivette, & Deal, 2011). Few of these proposed guidelines have been operationalized for application within real-world programs. However, most reflect principles derived from the vast adult learning literature as well as national mandates and practice guidelines. Thus, while there is a dearth of experimental research examining both CI-NCI-specific and family-centered training programs for EI/ECSE professionals, there does appear to be consensus amongst researchers on two effective components of such programs. First, evidence-based adult learning principles should inform the model of in-service EI/ECSE training programs and the targeted caregiver coaching strategies taught by these programs. Second, training packages should be multi-componential and require active participant involvement via applied assignments, expert and peer coaching, self-reflection, and similar practices.

Summary and Purpose of Current Study

CI-NCIs are supported by a substantial evidence base as an effective intervention for improving communication skills in young children with a variety of diagnoses (e.g., Rakap & Rapap, 2014). This treatment model aligns closely with federal mandates (IDEA, 2004) and current practice guidelines (e.g., DEC, 2014; ASHA, 2008) for EI/ECSE service delivery, which stress the importance of individualizing intervention to meet family needs and building family capacity to enact change. Moreover, because 70%

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of preschool-aged children with disabilities have communication needs (Nelson, Nygren, Walker, & Panoscha, 2006) and communication is the developmental domain most frequently addressed on IFSPs (Brown & Woods, 2013), EI/ECSE practitioners should be equipped to use CI-NCIs with families on their caseloads. Unfortunately, there is no evidence to suggest that practitioners across disciplines are being adequately trained in CI-NCIs or family-centered service delivery at either the pre-service or in-service level. As a result, it appears that some practitioners struggle to put national mandates and practice guidelines into action, and instead implement more traditional, clinician-directed interventions despite the evidence in favor of CI-NCIs and other family-centered interventions.

Few concerted efforts to provide EI/ECSE practitioners with substantive in-service training in CI-NCIs have been documented. While a number of training systems designed to improve providers' delivery of family-centered services more generally are in place, these programs are not always comprehensive and often come at a price to participants. Despite these limitations, the research suggests that effective CI-NCI in-service training programs for EI/ECSE practitioners should be multi-componential and incorporate a variety of evidence-based techniques to support adult learning, including explicit explanation of targeted content, multiple opportunities for active application of skills in authentic situations, feedback coaching, and guided self-reflection.

The current study was designed to evaluate the effectiveness of an intensive CI-NCI in-service professional development program incorporating adult learning principles and applied practice of targeted skills for improving EI/ECSE practitioners' CI-NCI-

related task performance, self-efficacy, and knowledge. Specifically, the study addressed the following research questions:

1. As compared to EI/ECSE practitioners who have never participated in the Language and Play Everyday (LAPE) program, do practitioners who have participated in LAPE programs in prior years:
    a. report performing more Caregiver-Implemented- Naturalistic Communication Intervention (CI-NCI) related tasks?
    b. report higher confidence in performing CI-NCI related tasks?
    c. score higher on a CI-NCI knowledge test?
2. As compared to EI/ECSE practitioners who have never participated in LAPE and practitioners who have participated in LAPE in the past, do practitioners who participate in a new, more intensive LAPE training program:
    a. report performing more CI-NCI related tasks?
    b. report higher confidence in performing CI-NCI related tasks?
    c. score higher on a CI-NCI knowledge test?
3. Do EI/ECSE practitioners believe that the new, more intensive LAPE in-service training program is socially relevant and valid for EI/ECSE practice?

CHAPTER II

METHODS AND PROCEDURES

Language and Play Everyday: A Community-based CI-NCI Program

Language and Play Everyday (LAPE) is a parent/caregiver CI-NCI education and coaching program developed in 2010 at the University of Oregon (UO). In collaboration with a local EI/ECSE agency, LAPE provides CI-NCI education and coaching to families of young children (aged 18-35 months) with communication delays living in Lane County, Oregon. Participating in LAPE has been shown to increase caregiver responsivity and use of other targeted CI-NCI strategies, as well as improving child outcomes, including emergent vocabulary and MLU (Moore, Barton, & Chironis, 2014).

Programmatic goals. While the primary goal of LAPE is increasing parents' and caregivers' ability to support their children's communication, the LAPE program also provides pre-service and in-service professional development for EI/ECSE practitioners across disciplines. At the pre-service level, LAPE serves as a practicum site for the UO's Communication Disorders and Sciences (CDS) and Early Intervention (EIP) graduate students, providing specified training in NCI strategies and the principles of interdisciplinary, family-centered service delivery. At the in-service level, LAPE supports Lane County's community-based in-service EI/ECSE practitioners by training them in communication development, assessment, and intervention, with a particular emphasis on CI-NCI proficiency.

LAPE's primary in-service training mechanism is its ongoing partnership with Lane County's early intervention agency, which is affiliated with the UO's College of Education (COE). All families enrolled in LAPE are referred by their early intervention

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service coordinators, EI/ECSE practitioners who hail from various IDEA-related disciplines and are responsible for facilitating the provision of services appropriate to each unique family. In the past, service coordinators have been encouraged to participate in LAPE alongside their referred families and have received limited direct CI-NCI training. During its Fall 2017-Winter 2018 session, LAPE expanded this support by instating a new, more intensive training program. The current study examined EI/ECSE practitioner outcomes associated with previous iterations of the LAPE program as well as the new, more intensive program, as compared to the outcomes of practitioners who did not participate in LAPE.

       Critical skills framework. In preparation for the new, more intensive program, the principle investigator and LAPE program director collaboratively developed a framework of essential caregiver coaching competencies for EI/ECSE professionals targeting improved communication in young children. This framework, entitled "Critical EI/ECSE Skills for Promoting Caregiver-Implemented Naturalistic Communication Interventions (CI-NCIs)" and abbreviated to "Critical Skills," is adapted from the FGRBI caregiver coaching model, an evidence-based, family-centered approach to EI service delivery (Woods, et al., 2004). The Critical Skills framework informed the development, implementation, and evaluation of the new, more intensive LAPE training program at several levels, including target content and outcome measurement. Refer to Table 1 for the complete framework.

Table 1

Critical EI/ECSE Skills for Promoting CI-NCIs.

Critical Skill	Definition

1. Direct teaching	Providing focused information to the parent/caregiver, via conversation, handout/visual, or video illustration about:
	  a. Language development and skills
	  b. Choosing a routine
	  c. Setting up a successful routine
	  d. Creating a communication opportunity
	  e. Waiting for the child to initiate communication
	  f. Responding to the child's communication attempts in order to teach something new

2. Planning	Working with the parent/caregiver to:
	  a. Decide on everyday routines for practicing communication-enhancing strategies.
	  b. Set goals for frequency of practice and frequency of child communication within routines.
	  c. Brainstorm ideas for preparing the environment specific to the child and chosen routine.
	  d. Brainstorm ideas for communication-enhancing strategies specific to the child and chosen routine.
	  e. Discuss ways the child is likely to communicate based on his or her current language skills (e.g., gestures, sounds, eye gaze, words, etc.) and the chosen routine.
	  f. Brainstorm ideas for responding to teach something new specific to the child's current language skills and chosen routine.

3. Demonstration and/or guided practice	Modeling targeted strategies with the child while the parent/caregiver observes, or working as a partner beside the parent to practice strategies together.
4. Observation of parent/caregiver practice	Observing a parent/caregiver-child interaction during a chosen routine and collecting data on parent/caregiver and child behaviors.

5. Guided reflection	Collaboratively reflecting on successes and areas for improvement with the parent/caregiver following parent practice and/or guided practice, using guided reflection questions such as:
	  a. What went well?
	  b. What would you like to think about for next time?

6. Feedback	Providing specific, data-based feedback during or following observation of parent practice and/or guided practice, such as:
	  a. Describing instance/s of the parent's use of specific target strategy and positively reinforcing
	  b. Describing instance/s when the parent could have used specific target strategy and suggesting they try next time.

	c. Providing feedback based on child behavior, e.g., "When you used x strategy, I saw your child communicate [in this specific way]."
7. Problem-solving	Providing structured time for the parent/caregiver to share concerns about chosen routines, child outcomes, etc. and collaboratively brainstorming and evaluating ideas for improving areas of concern.

Participants

The participants in this study included 20 EI/ECSE practitioners from a variety of disciplines, all of whom were employed by Lane County's EI/ECSE agency between September, 2017 and February, 2018. Through self-selection, 10 participants were assigned to the experimental group and 10 participants were assigned to the control group. All experimental participants voluntarily committed to taking part in the new, more intensive 20-week LAPE in-service training program and completing outcome measures, including pre/post-questionnaires and social validity surveys. Control participants did not take part in the training program, but voluntarily committed to completing pre/post-questionnaires over a similar timeframe (i.e., 15-20 weeks). Participants were not compensated in any way.

Recruitment and informed consent. Through the recruitment process, the experimental and control groups were matched to be as similar as possible in terms of the following pre-intervention variables: (1) discipline, (2) years of overall professional experience and EI/ECSE-specific experience, and (3) previous LAPE participation. No SLPs were recruited to the experimental group, and this population was subsequently excluded from the control group in order to maintain intergroup matching. Both groups included OTs, PTs, and developmental specialists with varying levels of professional experience and prior LAPE experience.

Experimental group. Nine experimental group participants were recruited from the group of EI/ECSE practitioners who referred families to the Fall 2017-Winter 2018 LAPE program. All practitioners who referred families were eligible to take part in the study, regardless of whether they had previously participated in LAPE. There were no additional inclusion or exclusion criteria. Because only OTs, PTs, and developmental specialists referred families to LAPE, these were the only disciplines included in the experimental group. One additional participant was recruited through email communication with the program director. This participant was an OT with prior LAPE experience who was unable to refer families to the Fall 2017-Winter 2018 program. All experimental participants signed written informed consent for the study at the beginning of a group training workshop.

Control group. Control group participants were recruited through fliers sent via email by the principal investigator. Control group recruitment commenced just after establishment of the experimental group. Recruitment fliers for the control group were sent to all developmental specialists, OTs, and PTs employed by the early intervention agency, regardless of whether they had LAPE experience. No SLPs were sent recruitment fliers. There were no additional inclusion or exclusion criteria. All control group participants signed written informed consent during individual or small group in-person meetings with the principal investigator.

Demographic characteristics. Both the experimental and control groups demonstrated intragroup variance with respect to discipline, previous LAPE experience, professional experience, highest level of education, and previous language development coursework (see Table 2). Overall, the demographic characteristics taken into

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consideration during the recruitment process were largely equivalent across the two conditions. The experimental group included eight developmental specialists, one OT, and one PT, and the control group included seven developmental specialists, two OTs, and one PT. While the control group had more years of average total professional experience (*M*= 18.78) than the experimental group (*M*= 11.20), the two groups were equivalent in average years of EI/ECSE-specific experience (experimental *M*= 10.80; control *M*= 11.00). Both groups included four participants who had referred at least one family to prior iterations of the LAPE program and attended at least one LAPE session, together designated as the Prior LAPE (PL) group (n=8). Both groups included six participants who had never referred a family or attended a session, together designated as the No Prior LAPE (NPL) group (n= 12).

Most participants in both groups had obtained Master's degrees (experimental n= 9; control n= 8), and had taken at least one college-level course incorporating child language development (experimental n= 10; control n= 8). Notably, two control group participants had obtained only Bachelor's degrees, while all other study participants had obtained Master's degrees or higher. These same two participants reported that they had not taken any language development courses.

Table 2

Experimental and Control Groups: Demographic Characteristics.

Practitioner characteristics	Experimental group (n=10)		Control group (n=10)	
	n	%	n	%
Discipline				
Early Childhood Special Education	8	80	7	70
Occupational Therapy	1	10	2	20
Physical Therapy	1	10	1	10
Education				

Bachelor's degree	0	0	2	20
Master's degree	9	90	8	80
PhD	1	10	0	0
Previous LAPE Experience				
No experience	6	60	6	60
1-2 sessions	2	20	1	10
3-5 sessions	0	0	1	10
6-10 sessions	1	10	0	0
More than 10	1	10	2	20
Previous Coursework[a]				
None	0	0	2	20
Only CD	5	50	2	20
Only LD	1	10	0	0
Both CD and LD	4	40	6	60
	M	*SD*	*M*	*SD*
Professional Experience				
Years in discipline	11.20	11.65	18.78	12.81
Years in EI/ECSE	10.80	11.02	11.00	9.49

Notes. Because one control group participant did not provide information on either "Professional Experience" item, the control group *M* and *SD* for these items are based on n= 9; [a]CD= college-level general child development course that include language development, LD= college-level course dedicated solely to child language development

CI-NCI-related practices. All participants across the experimental and control groups reported serving young children with communication needs to some extent in their daily practice (see Table 3). Twelve of 20 participants (experimental n= 6; control n= 6) reported that at least 75% of their caseload had communication goals, and another seven participants (experimental n= 3; control n= 4) reported that at least 50% of their caseload had communication goals. Additionally, 16 of 20 participants (experimental n= 10; control n= 6) reported that they wrote the communication goals for the children on their caseloads, either independently or in concert with another professional or professionals.

Table 3

Experimental and Control Groups: CI-NCI Related Practices.

CI-NCI-related practices	Experimental group (n=10)		Control group (n=10)	
	n	%	n	%
Percentage of Caseload with Communication Goals				
0-24%	0	0	0	0
25-49%	1	10	0	0
50-74%	3	30	4	40
75-100%	6	60	6	60
Write Communication Goals?				
Yes (independently)	5	50	1	10
Yes (with other professionals)	5	50	5	50
No	0	0	4	40

Experimental Intervention

The new, more intensive LAPE training program included: (1) referring at least one family to the Fall 2017-2018 LAPE parent/caregiver education and coaching program; (2) participating in a 4-hour upfront group training workshop; (3) independently reviewing the "LAPE EI/ECSE Provider Manual"; (4) attending at least one LAPE parent/caregiver group session and one LAPE individual session alongside their referred family or families; and (5) completing five CI-NCI practice activities (i.e., "Critical Skills activities") with at least one family or child-caregiver dyad not participating in LAPE. The participant without any referred families committed to a modified program, including attending the training workshop, reviewing the provider manual, and completing the Critical Skills activities. The program also included multiple auxiliary and/or voluntary components, including: (1) email reminders about Critical Skills activities and LAPE sessions; (2) practicing and/or sharing CI-NCI-related skills during LAPE toddler playgroups or in other preschool/daycare settings; and (3) one-on-one coaching sessions via email, phone, or in-person.

Following the intervention, two experimental subgroups were delineated according to practitioners' varying levels of participation in the LAPE training program. A scoring system developed by the principal investigator and LAPE program director (see Table 4) was used to assign each practitioner an overall participation score based on their reported completion of required and voluntary program components on the post-questionnaire. Practitioners with overall participation scores below 7 were designated as the LAPE-low participation (LAPE-LP) subgroup (n=2; M= 5.75 points). The remaining eight practitioners achieved overall participation scores of 7 or more, and were designated as the LAPE-full participation (LAPE-FP) subgroup (n=8; M= 10.13 points).

Table 4

Experimental Group: Total Participation Scoring System.

Program Component	Scoring Guidelines	Total Possible Score
Critical Skills activities	1 point per activity	5.0
Group LAPE sessions	1 point per 2 sessions	3.5
Individual LAPE sessions	1 point per session	6.0
Provider manual	1 point	1.0
Coaching	.5 point for coaching with LAPE program director; .5 point for coaching with principal investigator	1.0
Modeling/sharing LAPE strategies	1 point	1.0

Note. Total possible group sessions= 7; total possible individual sessions= 3-6 (dependent on number of families the participant referred to the LAPE parent/caregiver program)

Table 5 provides an overview of the LAPE-FP and LAPE-LP subgroups' participation in each intervention component, and the following sections describe each component in detail. Because the LAPE-LP subgroup did not participate fully in the

intervention, their CI-NCI training corresponded more closely with the control group than

the LAPE-FP subgroup. Additionally, both LAPE-LP participants' task performance

outcomes were identified as extreme values using the interquartile range (IQR) method of

outlier detection, meaning that both values fell at least 1.5xIQR below the first quartile

(25th percentile) of the experimental group dataset.

Table 5

LAPE-FP and LAPE-LP Subgroups: Overview of Participation.

Intervention components	LAPE-FP subgroup (n=8)		LAPE-LP subgroup (n=2)	
	n	%	n	%
Families Referred to LAPE				
None	0	0.00	1	50.00
1	5	62.50	1	50.00
2	3	37.50	0	0.00
Attended Training Workshop				
Yes	8	100.00	2	100.00
No	0	0.00	0	0.00
Read Provider Manual				
Yes	8	100.00	2	100.00
No	0	0.00	0	0.00
Group Sessions Attended				
None	0	0.00	1	50.00
1-2	3	37.50	0	0.00
3-5	3	37.50	1	50.00
6-7	2	25.00	0	0.00
Individual Sessions Attended				
None	0	0.00	1	50.00
1-2	7	87.50	1	50.00
3-4	1	12.50	0	0.00
5-6	0	0.00	0	0.00
Number of Critical Skills Activities Completed				
1	0	0.00	1	50.00
2	1	12.50	1	50.00
3	1	12.50	0	0.00
4	3	37.50	0	0.00
5	3	3750	0	0.00
Individualized Coaching				
Yes	6	75.00	0	0.00
No	2	100.00	2	100.00

Modeled/Shared LAPE Strategies				
Yes	4	50.00	1	50.00
No	4	50.00	1	50.00

Note. Total possible group sessions= 7; total possible individual sessions= 3-6 (dependent on number of families the participant referred to the LAPE parent/caregiver program)

Group training workshop. The 4-hour group training workshop was held at the start of the new, more intensive LAPE program and was attended by all experimental group participants (see Table 5). The workshop incorporated interactive lectures, large group discussions, and applied practice of CI-NCI-related assessment and intervention skills. Planned workshop content aligned closely with the Critical Skills framework, as well as EI/ECSE knowledge and practice standards set forth by ASHA (2008), DEC (2014), and NAEYC (2012). Content covered in detail during the workshop included: (1) an overview of CI-NCIs, including definitions, guiding principles, supporting literature, and various techniques and programs under the CI-NCI umbrella; and (2) fundamental principles of and tools for assessing communication and writing communication goals. Due to time constraints, the following content was overviewed only briefly during the workshop: (1) the LAPE program, including LAPE-specific CI-NCI strategies; (2) the fundamental principles and techniques of caregiver coaching in EI/ECSE, in accordance with the Critical Skills framework; and (3) descriptions of the five applied practice Critical Skills activities (refer to "Critical skills activities" and Table 6, p. 31, for detailed information on these activities).

Workshop attendees had multiple opportunities for active practice of specific CI-NCI related skills, including: (1) calculating children's rate of communication and types of communicative functions (e.g., behavior regulation, social interaction, and joint

attention) based on video examples; and (2) writing meaningful communication goals in the areas of spoken and/or signed vocabulary, gesture use, rate of communication, communicative functions, sentence length, and speech sounds, based on the results of mock communication assessments. Participants were provided with specific feedback and collaborative problem-solving during and/or after these applied practice activities.

LAPE provider manual. All experimental group participants received and committed to independently reviewing the "LAPE EI/ECSE Provider Manual," which contained detailed descriptions of the Critical Skills activities (i.e., step-by-step processes and required materials), as well as several materials necessary for completing the activities, including: (1) a customized speech sound inventory; (2) administration instructions for the MacArthur-Bates Communicative Development Inventories (CDI)-2nd Edition (Words and Gestures form; Fenson, et al., 2007); (3) a caregiver-child communication sample analysis worksheet; (4) a family-friendly assessment report and goal-writing template; and (5) several LAPE educational handouts and interactive worksheets that are regularly provided to the families enrolled LAPE. All experimental participants reported having read the provider manual (see Table 6). Refer to Appendices A, B, and C for examples of manual content.

LAPE program sessions. The LAPE parent/caregiver education and coaching program was delivered over 20 weeks. All families enrolled in LAPE received a total of 17.5 hours of services, including seven 2-hour parent/caregiver group support and coaching sessions and simultaneous toddler playgroups (14 hours total), and three 1- or 1.5-hour individual family sessions (3.5 hours total). Pre- and post-assessment activities were incorporated into both group and individual sessions. Curriculum included

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foundational knowledge about communication development and CI-NCI principles and strategies. An expert CI-NCI coach was present at all sessions.

All experimental group participants (except the participant who didn't refer any families) were asked to attend a minimum of one LAPE parent/caregiver group session and one LAPE individual session alongside their referred family or families. LAPE-FP participants attended between 1-7 group sessions and 1-3 individual sessions, while LAPE-LP participants attended between 0-3 group sessions and 0-1 individual sessions (see Table 6). Session attendance was intended to enhance participants' learning of CI-NCI principles, strategies, and caregiver coaching techniques through observation of and active engagement in the assessment and goal-setting processes, large group discussions and educational presentations, group-based coaching and peer support, and individualized caregiver coaching. Target LAPE content and caregiver coaching practices aligned closely with the Critical Skills activities being concurrently completed by experimental group participants.

Parent/caregiver group content included common communication terminology, facts about communication development, and NCI strategies. Groups also allowed parents/caregivers the opportunity to collaborate with one another in a supportive environment. Individual sessions included individualized assessment and caregiver coaching regarding each unique child's communication development and skills, routines and activities serving as the family's context of intervention, and use of LAPE strategies to target specific communication goals. Attending individual sessions gave experimental participants particularly salient models of and/or applied practice with the targeted caregiver coaching skills addressed in the Critical Skills framework.

Critical skills activities. All experimental group participants were asked to complete five Critical Skills activities. LAPE-FP participants completed between 2-5 activities, and LAPE-LP participants completed between 1-2 activities (see Table 5). Each activity was a CI-NCI-related task collaboratively defined and outlined by the principal investigator and program director. The activities were developed with multiple foundational principles and frameworks in mind, including: (1) the Critical Skills framework.; (2) the existing structure of the LAPE program (e.g., assessment and intervention schedule, curriculum); and (3) ASHA's (2008) standards for core EI/ECSE knowledge and skills. During the workshop and all communication with participants, Critical Skills activities were referred to as "LAPE practice activities." See Table 6 for a description of each activity, as well as the percentage of the LAPE-HP and LAPE-LP subgroups that completed each activity.

Table 6

Critical Skills Activities.

Activity Title	Description	Completion %
Activity 1: Assessing Communication Skills	1. The provider helps a parent/caregiver complete two communication inventories and choose a daily routine or activity to record for a caregiver-child communication sample. 2. Using this sample, the provider calculates the child's rate of communication and types of communicative functions and takes data on communication-enhancing caregiver behaviors.	*LAPE-FP:* 100% (n=8) *LAPE-LP:* 100% (n=2)
Activity 2: Discussing Assessment Results	1. The provider interprets results of the assessment and creates a simple assessment report. 2. Then, the provider shares this information with the parent/caregiver and discusses their child's language development and potential communication goals.	*LAPE-FP:* 87.5% (n=7) *LAPE-LP:* 50% (n=1)

Activity 3: Creating Communication Opportunities	1. The provider teaches a parent/caregiver how to create communication opportunities for their child during a daily routine or activity. 2. The provider and parent/caregiver watch a previously recorded routine, and develop a plan to create more communication opportunities.	*LAPE-FP:* 87.5% (n=7) *LAPE-LP:* 0% (n=0)
Activity 4: Waiting and +1 Strategies	1. The provider teaches a parent/caregiver two new strategies (waiting and responding to teach something new, i.e., +1). 2. The provider then practices these strategies alongside the parent/caregiver and their child.	*LAPE-FP:* 75% (n=6) *LAPE-LP:* 0% (n=0)
Activity 5: Reflection and Feedback	1. The provider watches a parent/caregiver use communication-enhancing strategies in a routine. 2. The provider helps the parent/caregiver reflect on their strategy use, and then provides feedback.	*LAPE-FP:* 62.5% (n=5) *LAPE-LP:* 0% (n=0)

Participants were asked to independently complete the five activities with at least one child-caregiver dyad on their caseload who were not already participating in the LAPE program. Criteria for selecting an appropriate child and caregiver included: (1) a child with a vocabulary of less than approximately 100 spoken/signed words; and (2) a child and caregiver who willingly engaged in daily routines and activities together. Because the activities were additive and contingent upon one another (e.g., Activity 2 could not be effectively completed with a family that had not already completed Activity 1), participants were highly encouraged to undertake all five activities in the prescribed order with a single family or other caregiver-child dyad, as opposed to completing any activity in isolation.

To enhance participant learning and streamline the intervention, the sequence of Critical Skills activities aligned closely with the general schedule of the LAPE program.

For example, participants were encouraged to complete Activity 1 following the LAPE sessions incorporating pre-assessment, and Activities 3 and 4 following the LAPE sessions focused on specific LAPE strategies (i.e., creating communication opportunities, waiting, and +1). Moreover, because participants were required to attend multiple LAPE sessions, they were exposed to education, demonstration, and/or supported practice before independently applying targeted knowledge and skills while completing Critical Skills activities.

Auxiliary and voluntary participation. The principal investigator sent five group emails to all experimental group participants throughout the program. The primary purpose of email communication was to provide reminders about completing Critical Skills activities and attending LAPE sessions. Emails were sent at intervals aligning with the LAPE curriculum (e.g., a reminder to complete Activity 1 was sent after LAPE sessions focusing on pre-assessment).

Multiple participants engaged in the LAPE training program in ways that went "above and beyond" the requirements. Six LAPE-FP participants requested and received individualized coaching from the principal investigator and/or program director, either in-person or via phone or email. To qualify as "coaching," these interactions had to: (1) take place one-on-one between the participant and principal investigator or program director; and (2) be conducted with the purpose of supporting the participant in completing Critical Skills activities and/or enhancing their learning about core LAPE content (e.g., assessing communication, NCI strategies, and caregiver coaching). Additionally, one LAPE-FP participant joined an LAPE toddler playgroup session to model communication-enhancing strategies for first-year CDS graduate student clinicians, and three LAPE-FP

participants and one LAPE-LP participant reported that they shared and/or modeled

strategies in other toddler or preschool classrooms. These experiences provided an added

opportunity to practice skills from the Critical Skills framework, particularly direct

teaching and demonstration/guided practice.

Research Design, Outcome Measures and Data Analysis

This study used a quasi-experimental comparison group pre-test/post-test design

to examine the effectiveness of the LAPE program as a model of CI-NCI in-service

professional development for EI/ECSE practitioners across disciplines. Specifically, the

study examined CI-NCI-related task performance, self-efficacy, and knowledge outcomes

associated with prior iterations of the LAPE program as well as the new, more intensive

LAPE program (research questions #1 and #2). The study also examined experimental

group participants' beliefs about the relevance of targeted LAPE knowledge and skills to

their daily practice (research question #3). Outcome measures included pre/post-

questionnaires and social validity surveys.

Pre/post-questionnaires. Standardized self-report questionnaires have been

acknowledged as a valuable, time- and cost-effective tool for collecting both qualitative

and quantitative data in survey research spanning diverse disciplines (e.g., Bryman, 2015;

Presser, 1984; Saris & Gallhofer, 2014). In a review of prestigious, peer-reviewed

journals within a variety of scientific disciplines (e.g., economics, political science, and

psychology), Saris and Gallhofer (2014) found that the percentage of research articles

incorporating survey data ranged from 20.0-49.9%, suggesting that questionnaires are a

common method of data collection.

Several recent studies specifically examining the effectiveness of in-service training programs for EI/ECSE and ECE practitioners have utilized questionnaires as the sole method of data collection or in conjunction with additional tools (e.g., Campbell & Sawyer, 2009; Campbell, et al., 2009; Childress, et al., 2013). Childress, et al. (2013) used pre-, post-, and follow-up questionnaires to examine changes in 39 EI service coordinators' knowledge and use of targeted practices following a 2-day training workshop. Questionnaires have also been used to examine practitioners' beliefs about EI/ECSE practices and self-efficacy in performing specific tasks. For example, Salisbury, et al. (2010) obtained survey data on EI/ECSE practitioners' experiences with the FGRBI service delivery model, and Scarinci, Rose, Pee, and Web (2015) examined 42 ECE practitioners' confidence in using language-enhancing strategies following an in-service training program. In accordance with this research, pre/post-questionnaires were the primary outcome measure of this study; questionnaire data were used to answer research questions #1 and #2.

Content and format. All experimental and control participants completed two questionnaires: one pre-questionnaire and one post-questionnaire. Pre-questionnaires collected information from participants in both conditions about: (1) demographic characteristics, including discipline, professional EI/ECSE experience, and prior LAPE experience; (2) use of 12 discrete CI-NCI tasks (i.e., "task performance"); (3) confidence in implementing 12 discrete CI-NCI tasks (i.e., "self-efficacy"); and (4) knowledge relevant to evidence-based, family centered communication intervention in EI/ECSE, including communication terminology, facts about communication development in young children, and CI-NCI principles and strategies (i.e., "knowledge").

Experimental and control participants completed slightly different post-questionnaires. Post-questionnaires for both conditions included the same task performance, self-efficacy, and knowledge questions as pre-questionnaires, but did not include demographic questions. Experimental group post-questionnaires also gathered data in three additional areas: (1) completion of Critical Skills activities; (2) auxiliary participation, including individualized coaching and modeling NCI strategies in LAPE toddler playgroups or other classrooms; and (3) participants' self-rating of their overall participation in the LAPE program. For the complete experimental group post-questionnaire, refer to Appendix D.

As previously mentioned, pre- and post-questionnaires gathered information on participants' reported use of (i.e., "task performance") and confidence in performing (i.e., "self-efficacy") 12 specific CI-NCI tasks (see Table 7). Because Critical Skills activities encompassed multiple distinct skills (e.g., Activity 1 involved coaching caregivers to choose a daily routine, as well as collecting and interpreting assessment information), the activities were broken down into discrete components in order to most accurately and precisely gauge participants' use of and confidence in these specific skills. As such, the pre-questionnaires featured a "CI-NCI Tasks Table" that gathered information on: (1) whether the participant had used each task, the context in which each task had been used (i.e., in graduate school, an in-service training, and/or daily practice), and the approximate number of times each task had been used (i.e., "task performance"); and (2) the participant's confidence in implementing each task, regardless of whether they had used it (i.e., "self-efficacy"), using a 10-point Visual Analog Scale (VAS) format (1= "If I did this task right now, I would really struggle"; 10= "If I did this task right now, I

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would do it perfectly"). The post-questionnaires featured a similar table, except that it did

not gather information on the context in which tasks had been used.

Table 7

12 CI-NCI Tasks and Associated Critical Skills Activities.

Questionnaire Item	Associated Critical Skills Activities (see Table 6)
1. Assessing a young child's vocabulary by interpreting information reported by the child's parents/caregivers.	*1*
2. Using a child's assessment results to discuss language development with parents/caregivers.	*2*
3. Writing goals with a child's parents/caregivers that target moving the child to the next stage of vocabulary development.	*2*
4. Helping a parent/caregiver choose a daily routine for practicing communication-enhancing strategies.	*1*
5. Observing a caregiver-child interaction and taking data on the child's communication skills.	*1, 5*
6. Observing a caregiver-child interaction and taking data on the parent/caregiver's use of communication-enhancing strategies.	*1, 5*
7. Teaching a parent/caregiver a new communication-enhancing strategy.	*3, 4*
8. Helping a parent/caregiver write a plan for practicing communication-enhancing strategies.	*3*
9. Practicing a communication-enhancing strategy with a parent/caregiver in order to model the strategy.	*4*
10. Watching a caregiver-child interaction and then asking the parent/caregiver to reflect on their use of communication-enhancing strategies.	*5*
11. Video-recording a caregiver-child interaction and reviewing it with the parent/caregiver.	*1, 3*
12. Watching a caregiver-child interaction and providing specific feedback to the parent/caregiver about their use of communication-enhancing strategies.	*5*

The knowledge test comprised 17 items, all based on short case studies. Items

were worth a total of 31 points. Knowledge questions spanned a variety of response

formats, including open-ended, multiple choice, and yes/no questions. Target content of

the knowledge test reflected topics addressed in the group training workshop, LAPE provider manual, LAPE group and individual sessions, Critical Skills Activities, and/or individual coaching conversations with the principal investigator or LAPE program director.

Development and administration. The principal investigator and LAPE program director developed the questionnaires for this study. The pre-questionnaire was piloted with 14 second-year CDS graduate students, of which seven had previously participated in the LAPE practicum. All students had taken a graduate-level course on evidence-based communication assessment and intervention for children aged 0-5. Pilot feedback was used to refine the questionnaire, most notably by helping establish criteria for open-ended knowledge questions (see "Analysis and reliability," below, for detailed information pertaining to knowledge test scoring and analysis).

All experimental and control participants completed pre-questionnaires in the presence of the principal investigator, the experimental group just prior to the group training workshop and the control group in individual meetings with the principal investigator. Post-questionnaires were left in all participants' work mailboxes at the end of the training program, and participants were sent emails with detailed completion instructions, including an instruction to answer all knowledge questions independently without any resources.

Analysis and reliability. Data obtained from pre- and post-questionnaires were analyzed by the principal investigator using the SPSS Statistics software package (IBM Corporation, Armonk, NY). A p-value of $< .05$ was considered statistically significant for all analyses. All responses were input as numeric data, and thus non-numerical responses

(e.g., to certain demographic questions and all knowledge questions) were assigned numerical values. To maintain consistency in scoring open-ended knowledge questions, specific criteria were developed prior to reviewing pre-questionnaires, and all responses were assigned the appropriate numerical value in accordance with this predetermined system (see Appendix E). Criteria were based on evidence-based CI-NCI related principles and facts, knowledge competencies specific to LAPE (i.e., strategies and principles strongly emphasized by the program), and pilot participants' responses. Multiple choice and yes/no responses also corresponded to numerical scores, and all responses were combined to produce total pre- and post-knowledge scores for each participant.

To establish and measure the reliability of this scoring system, knowledge tests from all questionnaires (40 total) were scored by the principal investigator and an unpaid undergraduate research assistant. Before independently scoring questionnaires, the principal investigator and research assistant reviewed all scoring criteria together, separately scored three knowledge tests, and reconvened to discuss disagreements and attain a minimum of 90% inter-observer agreement (IOA) on all three questionnaires. IOA was calculated using the following formula: number of agreements / number of agreements + number of disagreements x 100 (Girolametto, Weitzman, & Greenberg, 2003; Kaiser & Hester, 1994). The principal investigator and research assistant met several times to review all scores, discuss disagreements, and reach consensus. Refer to Table 8 for average IOA percentages across conditions, time points, and pre/post-consensus.

Table 8

Pre- and Post-Questionnaire Knowledge Tests: Inter-observer Agreement.

Condition and time point	Initial IOA	Consensus IOA
Experimental group		
Pre-questionnaire	92.8%	100.0%
Post-questionnaire	92.4%	100.0%
Control group		
Pre-questionnaire	87.2%	100.0%
Post-questionnaire	86.5%	100.0%

Social validity surveys. In addition to pre- and post-questionnaires, all experimental group participants were asked to complete a social validity survey at the conclusion of the LAPE in-service professional development program (refer to Appendix F for the full document). These surveys collected information about the relevance of participants' experiences in LAPE to their daily EI/ECSE practice (i.e., research question #3) and were completed confidentially. The surveys were developed by the principal investigator and LAPE program director, and comprised three sections, including: (1) rating scale questions related to the ease and relevance of multiple LAPE program components and participants' overall satisfaction with the program; (2) rating scale questions related to each Critical Skills Activity, including the helpfulness of the activity and the participant's intention to continue using skills learned through implementing the activity; and (3) questions gauging participants' opinions about the most beneficial aspects of LAPE, suggestions for improving the program, and the top three LAPE skills and/or strategies most applicable to participants' daily practice. Questions pertaining to overall satisfaction and ease/relevance of the intervention components were answered on a 7-point ordinal rating scale (0= "I strongly disagree with this statement"; 6= "I strongly

agree with this statement"), while questions pertaining to strengths/areas for improvement were open-ended.

Social validity surveys were left in all experimental group participants' work mailboxes following the intervention, with instruction not to record any identifying information. Completed forms were turned in separately from the post-questionnaires, to ensure anonymity. Data obtained from social validity surveys were analyzed quantitatively and qualitatively at the group level, not in relation to individual participants. Open-ended questions were reviewed using qualitative content analysis, a group of systematic techniques for interpreting qualitative data to determine common themes (e.g., Elo, et al., 2014; Hsieh & Shannon, 2005).

CHAPTER III

RESULTS

Results will be addressed in relation to each of the three research questions guiding this study, using descriptive and inferential statistical analysis of numerical data and qualitative content analysis of open-ended social validity responses. First, data from pre-questionnaires across both conditions will be presented to compare baseline task performance, self-efficacy, and knowledge levels between participants with previous LAPE experience and those with no LAPE experience (research question #1). Second, post-questionnaire data will be presented to evaluate participants' reported task performance, self-efficacy, and knowledge levels following the new, more intensive LAPE program, as compared to the control group (research question #2). Finally, quantitative and qualitative data reflecting participants' beliefs about the social validity of the new, more intensive LAPE program will be presented (research question #3).

Research Question 1: Effects of Previous LAPE Experience on Reported CI-NCI Task Performance, Self-efficacy, and Knowledge

Independent samples t-tests were used to examine reported task performance, self-efficacy, and knowledge levels from pre-questionnaires completed by the PL group (those who had participated in prior LAPE programs) and NPL group (those who had never participated in LAPE), regardless of whether or not they participated in the new, more intensive program. The PL group reported that they had performed a significantly higher number of the 12 CI-NCI tasks ($M=$ 11.13, $SD=$ 2.31) than the NPL group ($M=$ 8.33, $SD=$ 1.73, $p=$ 0.006). The reported number of tasks were not normally distributed (5 of the 10 participants reported the highest possible number of tasks, 12), so a

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nonparametric test (independent samples median test) was conducted to compare the means and confirmed a significant difference between groups ($p= 0.005$). In addition, the PL group had a significantly higher mean self-efficacy rating ($M= 7.07$, $SD= 1.34$) than the NPL group ($M= 5.11$, $SD= 1.71$, $p= 0.01$). The PL group scored higher on the knowledge test ($M= 19.06$, $SD= 2.37$) than the NPL group ($M= 17.50$, $SD= 3.24$), although this difference was not statistically significant ($p= 0.23$). Task performance, self-efficacy, and knowledge data are summarized in Table 9.

Table 9

PL and NPL Groups: Task Performance, Self-efficacy, and Knowledge.

Variable	Prior LAPE (n= 8)		No Prior LAPE (n= 12)		*p*-value
	M	*SD*	*M*	*SD*	
Task Performance					
Total # of tasks performed	11.13	2.31	8.33	1.73	0.006
Percentage tasks performed	92.71	19.25	69.44	14.39	0.006
Self-efficacy					
Mean self-efficacy score	7.07	1.34	5.11	1.71	0.01
Knowledge					
Total knowledge score	19.06	2.37	17.50	3.24	0.23
Knowledge score percentage	61.49	7.64	56.45	10.45	0.23

Previous LAPE experience on CI-NCI-related tasks. In addition to reporting more CI-NCI tasks, PL participants were more likely to report more substantial experience with each task on the pre-questionnaire. Table 10 presents the percentage of each group that reported performing each task four or more times, considered "substantial" experience. There were seven tasks with which all PL participants (n= 8) had substantial experience, while there was only one task with which all NPL participants (n= 12) had substantial experience. Discrepancy across groups was particularly notable for the following tasks: Task 8, "helping a parent/caregiver write a home plan for

practicing communication strategies" (87.5% of PL versus 25% of NPL participants had substantial experience); Task 10, "watching a parent/caregiver-child interaction and helping the parent/caregiver reflect on their use of communication strategies" (87.5% PL, 50% NPL); Task 11, "video recording a parent/caregiver-child interaction and reviewing the recording with the parent/caregiver" (50% PL, 0% NPL); and Task 12, "watching a parent/caregiver-child interaction and giving the parent/caregiver specific feedback about their use of communication-enhancing strategies" (100% PL, 41.67% NPL).

Notably, only half of the PL group (n=4) and none of the NPL group reported substantial experience with Task 11, suggesting that participants were less likely to report implementing video reflection than any other CI-NCI activities addressed by the Critical Skills framework, even if they had previous LAPE experience. Despite this trend across groups, PL participants were still more likely than NPL participants to report video reflection.

Table 10

PL and NPL Groups: Reported "Substantial" Experience and Mean Self-Efficacy Ratings on 12 CI-NCI Tasks.

Task Number and Description	Experience (%)		Self-Efficacy (*M*)	
	PL	NPL	PL	NPL
1. Assessing a young child's vocabulary by interpreting information reported by the child's parents/caregivers.	100.00	83.33	7.38	6.00
2. Using a child's assessment results to discuss language development with parents/caregivers.	100.00	83.33	7.75	5.25
3. Writing goals with a child's parents/caregivers that target moving the child to the next stage of vocabulary development.	100.00	83.33	7.63	5.58
4. Helping a parent/caregiver choose a daily routine for practicing communication-enhancing strategies.	100.00	75.00	7.88	6.00

5. Observing a parent/caregiver-child interaction and taking data on the child's communication skills.	87.50	58.33	6.88	5.33
6. Observing a parent/caregiver-child interaction and taking data on the parent/caregiver's use of communication-enhancing strategies.	75.00	50.00	6.38	4.83
7. Teaching a parent/caregiver a new communication-enhancing strategy.	100.00	100.00	7.88	6.42
8. Helping a parent/caregiver write a plan for practicing communication-enhancing strategies.	87.50	25.00	6.35	4.00
9. Practicing a communication-enhancing strategy with a parent/caregiver in order to model the strategy.	100.00	91.67	7.75	6.42
10. Watching a parent/caregiver-child interaction and then asking the parent/caregiver to reflect on their use of communication-enhancing strategies.	87.50	50.00	6.38	4.17
11. Video-recording a parent/caregiver-child interaction and reviewing it with the parent/caregiver.	50.00	0.00	5.57	2.20
12. Watching a parent/caregiver-child interaction and providing specific feedback to the parent/caregiver about their use of communication-enhancing strategies.	100.00	41.67	7.13	4.33

Notes. PL *n*= 8; NPL *n*= 12; "Substantial" experience percentage= percentage of group that reported the task four or more times; Self-efficacy rating scale: 1= "If I did this task right now, I would really struggle"; 10= "If I did this task right now, I would do it perfectly."

Previous LAPE experience on CI-NCI-related self-efficacy. To consider self-efficacy ratings in greater detail across the PL and NPL groups, Table 10 presents mean ratings for both groups by task. In addition to a statistically significant higher overall rating, the PL group had higher ratings on every task, and was at least two points higher on six tasks, including: Task 2, "using a child's assessment results to discuss language development with parents/caregivers" (PL: 7.75, NPL: 5.25); Task 3, "writing goals with parents/caregivers that target moving their child to the next stage of vocabulary development" (PL: 7.63, NPL: 5.53); Task 8, "helping a parent/ caregiver write a plan for

practicing communication-enhancing strategies" (PL: 6.35, NPL: 4.00); Task 10,

"watching a parent/caregiver-child interaction and then asking the parent/ caregiver to

reflect on their use of communication-enhancing strategies" (PL: 6.38, NPL: 4.17), Task

11, "video-recording a parent/caregiver-child interaction and reviewing it with the

parent/caregiver" (PL: 5.57, NPL: 2.20); and Task 12, "watching a parent/caregiver-child

interaction and providing feedback to the parent/caregiver about their use of

communication-enhancing strategies" (PL: 7.13, NPL: 4.33).

Notably, both groups reported their lowest mean rating on Task 11, which

pertains to video reflection. Task 11 was also the most discrepant across groups, with a

3.37-point difference between PL and NPL ratings. These data demonstrate that, although

the PL group reported more confidence than the NPL group in their ability to implement

video reflection, neither group reported being substantially confident. These findings

align with task performance data demonstrating that, although PL participants were more

likely to report Task 11 than NPL participants, it was nonetheless the least-reported task

across both groups.

Mean NPL group ratings on Tasks 2 and 3 were also notable. The NPL group

reported not feeling confident with tasks related to interpreting and discussing assessment

results (i.e., Task 2) and writing meaningful communication goals (i.e., Task 3), despite

reporting substantial experience with such tasks. In contrast, PL ratings aligned closely

with the group's reported tasks. On those tasks reported at a "substantial level" by 100%

of the PL group, mean self-efficacy ratings ranged from 7.13-7.88; on tasks reported at a

"substantial level" by 75-87.5% of the PL group, ratings ranged from 6.25-6.88; and on

Task 11, reported at a "substantial level" by 50% of the PL group, the rating was 5.57. In

other words, the PL group reported feeling more confident performing all 12 tasks, and their self-efficacy and reported task levels were connected, whereas the NPL group reported less confidence even given substantial experience, particularly with respect to assessment and goal-writing.

Previous LAPE experience on CI-NCI-related knowledge. In addition to there being no statistically significant difference between PL and NPL mean knowledge scores, both groups' scores were low overall. The PL group's average score was 61.48% and the NPL group's average scores was 56.45%. The highest score earned by a PL group member was 24/31 (77.42%), while two members of the NPL group earned scores of 22.5/31 (72.58%). There were no major discrepancies between groups on specific knowledge questions. These data demonstrate that, while PL group participants reported performing more tasks and feeling more confident implementing these tasks than NPL group participants, neither group exhibited considerable CI-NCI knowledge, according to the research measure, prior to the new more intensive LAPE program.

Research Question 2: Effects of Experimental Condition on CI-NCI Task Performance, Self-efficacy, and Knowledge

One-way ANOVAs were employed to examine differences in reported task performance, self-efficacy, and knowledge levels between the group that received the new, more intensive LAPE intervention (LAPE) and the control group (Control). Additional one-way ANOVAs examined these same variables, but included only the LAPE-FP subgroup, comprising all participants that received overall participation scores of 7 or more. On the pre-questionnaire there were no statistically significant differences in reported task performance, self-efficacy, or knowledge between experimental

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conditions, regardless of whether the analysis included or excluded the LAPE-LP subgroup.

On the post-questionnaire, there were no significant differences between the LAPE and control groups' reported CI-NCI tasks (LAPE *M*= 9.80*;* Control *M*= 9.70; *p*= 0.95) or self-efficacy (LAPE *M*= 5.91*;* Control *M*= 5.81; *p*= 0.86), but the LAPE group scored significantly higher (*M*= 26.05, *SD*= 2.10) than the control group (*M*= 21.15, *SD*= 3.31, *p*= 0.001) on the knowledge test. In contrast, on the post-questionnaire the LAPE-FP group reported a significantly higher number of CI-NCI tasks (*M*= 11.63, *SD*= 0.52) than the control group (*M*= 9.70, *SD*= 2.31, *p*= 0.03) and scored significantly higher (*M*= 25.88*; SD*= 2.01*)* than the control group (*M*= 21.15; *SD*= 3.31*; p*= 0.002*)* on the knowledge test. However, there were still no significant differences between groups with respect to self-efficacy (LAPE-FP *M*= 6.72*;* Control *M*= 5.81; *p*= 0.30). To reduce the effect of previous LAPE experience on participant outcomes, ANCOVAs were also performed, controlling for the PL/NPL covariate. ANCOVA results were similar to ANOVAs across all measures, demonstrating significant post-questionnaire differences between the Control and LAPE-FP groups in reported task performance (*p*=0.04) and knowledge (*p*=0.003). These findings are summarized in Table 11.

Table 11

LAPE, LAPE-FP, and Control Groups: Task Performance, Self-efficacy, and Knowledge.

Variable & Timepoint	LAPE (n=10)		LAPE-FP (n=8)		Control (n= 10)		*p*-value (LAPE-FP)
	M	*SD*	*M*	*SD*	*M*	*SD*	
Total Tasks							
Pre-questionnaire	10.10	1.79	10.50	1.20	8.80	2.97	0.12
Post-questionnaire	9.80	2.94	11.63	0.52	9.70	2.31	0.03
Mean Self-efficacy							
Pre-questionnaire	5.77	1.34	6.12	0.96	6.03	2.28	0.91

Post-questionnaire	5.98	1.88	6.72	1.09	5.81	2.40	0.30
Total Knowledge							
Pre-questionnaire	18.10	2.53	17.75	2.73	18.15	3.48	0.79
Post-questionnaire	26.05	2.10	25.88	2.01	21.15	3.31	0.002

Figure 1 provides a graphic representation of pre- and post-questionnaire reported task performance, self-efficacy, and knowledge means across the LAPE-FP and control groups. On the pre-questionnaire, the LAPE-FP group reported a greater percentage of tasks on average than the control group (LAPE-FP $M= 87.5\%$; Control $M= 73.33\%$); however, this difference was not statistically significant ($p= 0.12$). The were no statistical differences between the LAPE-FP and control groups with respect to self-efficacy (LAPE-FP $M= 61.15\%$; Control $M= 60.25\%$) or knowledge (LAPE-FP $M= 57.26\%$; Control $M= 58.25\%$).

On the post-questionnaire, the LAPE-FP group demonstrated improvement in all areas, although self-efficacy was still relatively low (task performance $M= 96.92\%$; self-efficacy $M= 67.19\%$; knowledge $M= 83.47\%$). The control group improved on reported tasks ($M= 80.83\%$) and knowledge ($M= 68.22\%$), but not to the same degree as the LAPE-FP group. Additionally, the control group's mean self-efficacy rating ($M= 58.08\%$) decreased from the pre-questionnaire. Detailed results pertaining to all three variables are presented in the following sections.

Figure 1

Pre- and Post-questionnaire Mean Percentages by Experimental Condition and Variable.
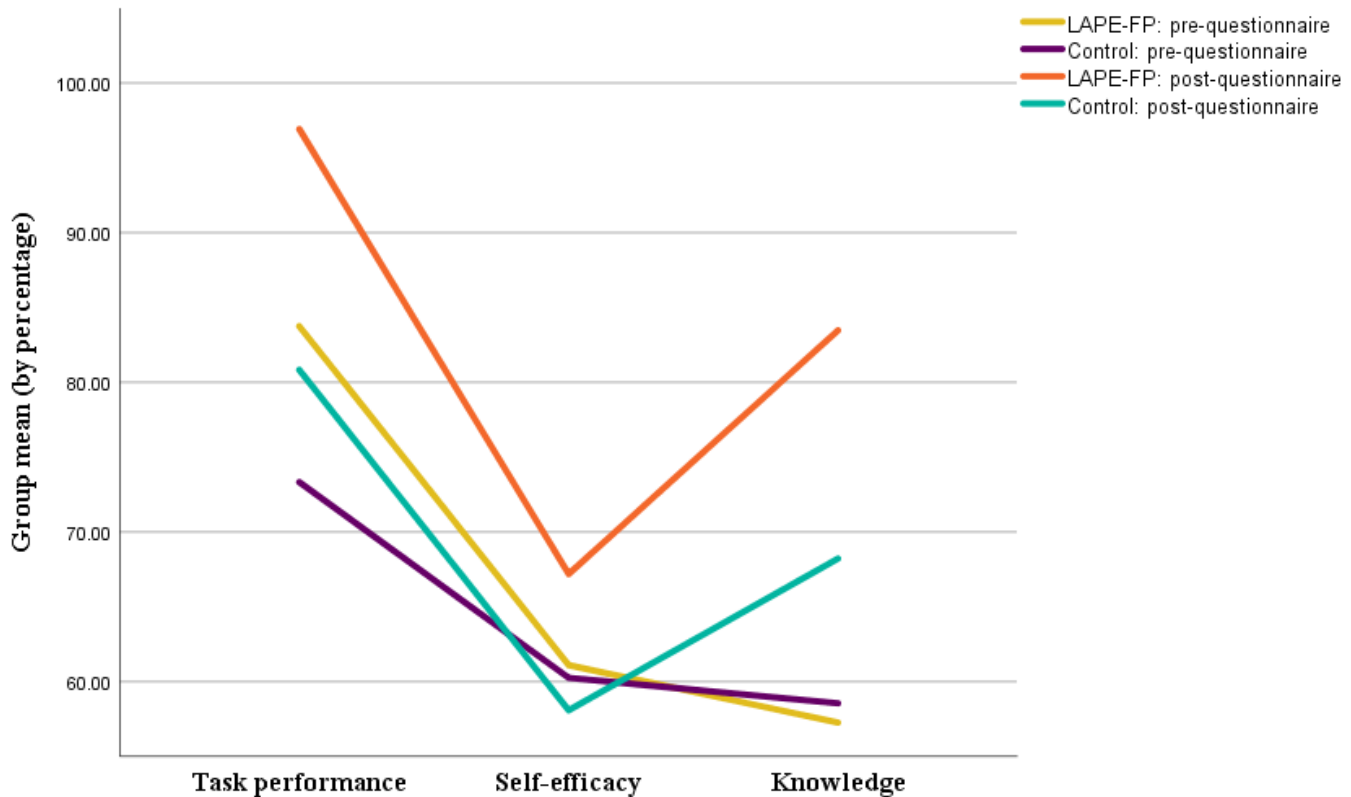
Notes. Group mean task %= group mean tasks/12 x 100; group mean self-efficacy %= group mean self-efficacy x 10; group mean knowledge %= group mean knowledge score/31 x 100.

Experimental condition on CI-NCI-related tasks. On both the pre- and post-questionnaires, more tasks were reported by the full LAPE-FP group (i.e., 100% of the group) than the full control group (see Table 12). The full LAPE-FP group reported 8 of 12 tasks on the pre-questionnaire and 10 of 12 task on the post-questionnaire, while the full control group reported 4 of 12 tasks on both the pre- and post-questionnaires. These data demonstrate that, while the LAPE-FP group reported more tasks on the pre-questionnaire, the difference between groups was more substantial on the post-

questionnaire. This corresponds to *p*-values demonstrating that the difference between groups only reached statistical significance on the post-questionnaire.

The LAPE-FP group made its greatest gain with Task 11, "video-recording a parent/caregiver-child interaction and reviewing it with the parent/caregiver" (pre: 25%, post: 100%). Task 11 was reported at a similar level across groups on the pre-questionnaire (LAPE-FP: 25%, Control: 30%), but had the largest post-questionnaire discrepancy (LAPE-FP: 100%, Control: 20%). These data demonstrate not only that LAPE-FP participants were much more likely than control participants to report video reflection on the post-questionnaire, but also that the LAPE-FP group reported substantial growth with this task from pre- to post-questionnaire, while the control group reported a slight decline.

Table 12

LAPE-FP and Control Groups: Reported Tasks.

Task Number and Description	LAPE-FP (n=8)		Control (n=10)	
	Pre %	Post %	Pre %	Post %
1. Assessing a young child's vocabulary by interpreting information reported by the child's parents/caregivers.	100.00	100.00	90.00	100.00
2. Using a child's assessment results to discuss language development with parents/caregivers.	100.00	100.00	100.00	100.00
3. Writing goals with a child's parents/caregivers that target moving the child to the next stage of vocabulary development.	100.00	87.50	80.00	80.00
4. Helping a parent/caregiver choose a daily routine for practicing communication-enhancing strategies.	100.00	100.00	100.00	90.00
5. Observing a caregiver-child interaction and taking data on the child's communication skills.	100.00	100.00	60.00	90.00
6. Observing a caregiver-child interaction and taking data on the parent/caregiver's use of communication-enhancing strategies.	100.00	100.00	60.00	70.00
7. Teaching a parent/caregiver a new communication-enhancing strategy.	100.00	100.00	100.00	100.00

8. Helping a parent/caregiver write a plan for practicing communication-enhancing strategies.	62.50	87.50	50.00	60.00
9. Practicing a communication-enhancing strategy with a parent/caregiver in order to model the strategy.	100.00	100.00	100.00	90.00
10. Watching a caregiver-child interaction and then asking the parent/caregiver to reflect on their use of communication-enhancing strategies.	75.00	100.00	60.00	60.00
11. Video-recording a caregiver-child interaction and reviewing it with the parent/caregiver.	25.00	100.00	30.00	20.00
12. Watching a caregiver-child interaction and providing specific feedback to the caregiver about their use of communication-enhancing strategies.	87.50	100.00	60.00	100.00

Note. Pre %= percentage of group that reported task on pre-questionnaire; post %= percentage of group that reported task on post-questionnaire.

Experimental condition on CI-NCI-related self-efficacy. To consider self-efficacy ratings in greater detail across the LAPE-FP and control groups, Table 13 presents mean ratings for each group by task, as reported on pre- and post-questionnaires. Although overall mean ratings were not significantly different across groups, LAPE-FP group ratings were higher than control group ratings on all discrete tasks. Additionally, the LAPE-FP group reported more substantial rating increases from pre- to post-questionnaire. LAPE-FP ratings increased on 9 of 12 tasks, whereas control ratings decreased on 9 of 12 tasks. The LAPE-FP group's greatest increases were on Task 4, "helping a parent/caregiver choose a daily routine for practicing communication-enhancing strategies" (pre *M*: 6.50, post *M*: 7.63) and Task 8, "helping a parent/caregiver write a plan for practicing communication-enhancing strategies" (pre *M:* 4.86, post *M*: 6.25). The control group's greatest increase was on Task 12, "watching a parent/caregiver-child interaction and providing specific feedback about their use of communication-enhancing strategies" (pre *M*: 5.50, post *M*: 6.30).

Also of note are the LAPE-FP group's post-questionnaire self-efficacy ratings for

Task 11, "video-recording a parent/caregiver-child interaction and reviewing it with the

parent/caregiver," and Task 10, "watching a parent/caregiver- child interaction and then

asking the parent/caregiver to reflect on their use of communication-enhancing

strategies." Task 11 ratings were the lowest across groups on the post-questionnaire

(LAPE-FP *M*: 4.86, Control *M*: 4.00), and Task 10 ratings were the second-lowest on the

post-questionnaire (LAPE-FP *M*: 5.63; Control *M*: 5.10). The LAPE-FP ratings for these

tasks are particularly notable, because all participants in this group reported both of these

tasks on the post-questionnaire. These findings demonstrate that LAPE-FP participants

reported the least confidence on the post-questionnaire with CI-NCI tasks related to video

recording and guided self-reflection, even though they reported experience with these

tasks.

Table 13

LAPE-FP and Control Groups: Mean Self-efficacy Ratings.

Task Number and Description	LAPE-FP (n=8)		Control (n=10)	
	Pre *M*	Post *M*	Pre *M*	Post *M*
1. Assessing a young child's vocabulary by interpreting information reported by the child's parents/caregivers.	7.00	6.88	6.40	6.30
2. Using a child's assessment results to discuss language development with parents/caregivers.	6.38	7.00	6.40	6.00
3. Writing goals with a child's parents/caregivers that target moving the child to the next stage of vocabulary development.	6.63	6.13	6.50	5.60
4. Helping a parent/caregiver choose a daily routine for practicing communication-enhancing strategies.	6.50	7.63	7.50	6.60
5. Observing a parent/caregiver-child interaction and taking data on the child's communication skills.	6.13	6.75	6.40	5.70

6. Observing a caregiver-child interaction and taking data on the parent/caregiver's use of communication-enhancing strategies.	6.13	6.13	5.20	5.60
7. Teaching a parent/caregiver a new communication-enhancing strategy.	7.38	7.63	7.10	6.50
8. Helping a parent/caregiver write a plan for practicing communication-enhancing strategies.	4.86	6.25	5.30	5.20
9. Practicing a communication-enhancing strategy with a parent/caregiver in order to model the strategy.	7.25	7.63	7.00	6.80
10. Watching a parent/caregiver-child interaction and then asking the parent/caregiver to reflect on their use of communication-enhancing strategies.	4.88	5.63	5.50	5.10
11. Video-recording a parent/caregiver-child interaction and reviewing it with the parent/caregiver.	3.83	4.86	3.60	4.00
12. Watching a parent/caregiver-child interaction and providing specific feedback to the parent/caregiver about their use of communication-enhancing strategies.	5.75	6.38	5.50	6.30

Note. Self-efficacy rating scale: 1= "If I did this task right now, I would really struggle";

10= "If I did this task right now, I would do it perfectly."

Experimental condition on CI-NCI-related knowledge. Table 14 presents the

LAPE-FP and control groups' mean scores on individual knowledge questions across the

pre- and post-questionnaires. On the pre-questionnaire, there were no substantial

differences between groups. On the post-questionnaire, both groups demonstrated similar

levels of knowledge related to basic communication facts and terminology (e.g., *defining*

speech LAPE-FP *M*= 0.38*;* Control *M*= 0.35; total possible= 1.00), general principles of

parent/caregiver coaching (e.g., *providing an example of specific parent/caregiver*

feedback LAPE-FP *M*= 1.00*;* Control *M*= 1.00; total possible= 1.00), and embedding

intervention within daily routines (e.g., *choosing two appropriate routines for using CI-*

NCIs LAPE-FP *M*= 0.88*;* Control *M*= 0.80; total possible= 2.00).

However, on the post-questionnaire the LAPE-FP group scored substantially higher than the control group on questions related to rate of communication (e.g., *determining whether rate or mode of communication is more important in emerging communicators* LAPE-FP *M*= 2.00; Control *M*= 1.40; total possible= 2.00; and *determining why rate of communication is integral to communication development* LAPE-FP *M*= 1.75*;* Control *M*= 1.20; total possible= 2.00) and using daily routines and activities as the context of communication intervention (e.g., *choosing two appropriate routines for implementing CI-NCIs* LAPE-FP *M*= 1.88*;* Control *M*= 0.80; total possible= 2.00), which are strongly emphasized in the LAPE program. The most highly discrepant item between conditions drew on participants' knowledge of specific strategies targeted by the LAPE program (*listing three communication-enhancing strategies* LAPE-FP *M*= 5.75*;* Control *M*= 4.00; total possible= 6.00).

Table 14

LAPE-FP and Control Groups: Mean Knowledge Scores.

Item Number and Description	Total Possible	LAPE-FP (n=8)		Control (n=10)	
		Pre *M*	Post *M*	Pre *M*	Post *M*
1. Defining "speech"	1.00	0.38	0.63	0.35	0.50
2. Defining "language"	1.00	0.44	0.50	0.30	0.55
3. Defining "communication"	1.00	0.31	0.50	0.50	0.50
4. Differentiating between speech and language	1.00	0.63	0.88	0.80	0.90
5. Listing two communicative functions beyond behavior regulation	4.00	1.38	2.50	2.00	2.10
6. Determining whether rate or mode of communication is more important in emerging communicators	2.00	1.00	2.00	1.40	1.40

7. Determining why rate of communication is integral to communication development	2.00	0.50	1.75	1.00	1.20
8. Listing one mode of communication beyond words and gestures	1.00	1.00	0.75	0.70	0.80
9. Demonstrating understanding of why child-initiated communication is best	1.00	0.75	0.50	0.60	0.60
10. Listing three communication-enhancing strategies	6.00	4.25	5.75	3.40	4.00
11. Demonstrating understanding of how to choose appropriate routines	2.00	0.88	1.63	1.40	1.30
12. Choosing two appropriate routines for using CI-NCIs	2.00	0.88	1.88	0.80	0.80
13. Demonstrating understanding of guided reflection questions	1.00	0.63	0.63	0.60	0.90
14. Demonstrating understanding of rationale for parent/caregiver-implemented intervention	1.00	0.88	1.00	0.80	0.90
15. Determining whether example of parent/caregiver feedback is appropriate	1.00	1.00	1.00	0.90	1.00
16. Providing an example of specific parent/caregiver feedback	1.00	1.00	1.00	0.80	1.00
17. Demonstrating understanding of the "+1" strategy	3.00	1.88	3.00	1.90	2.70

Research Question 3: Social Validity

Analysis of participants' beliefs regarding the social validity of the new LAPE program utilized data from anonymous surveys completed by the LAPE group after intervention. Because surveys were anonymous, analyses were conducted at the group level and based on responses from all participants (n= 10), including the LAPE-LP subgroup.

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Overall satisfaction. Table 15 outlines the six general social validity items and

presents group means for each item, as well as an overall group mean across all items.

These results demonstrate that participants perceived LAPE as beneficial to EI/ECSE

practitioners and to families enrolled in the program, but considered certain components

easier and/or more informative than others. In particular, participants identified the initial

training workshop (Item 1) as easy and useful, and Critical Skills activities (Item 2) as the

most challenging component.

Table 15

Social Validity Survey: Mean Ratings on Overall Satisfaction Items.

Item	LAPE (n= 10)
	M
Item 1: "The information provided during the 4- hour LAPE pre-training session was easy to understand and helped to prepare me for the LAPE practice activities I completed with families on my caseload."	5.00
Item 2: "It was easy to complete the LAPE practice activities with non-LAPE families on my caseload."	3.00
Item 3: "Attending LAPE parent groups and individual sessions made me a better parent/caregiver educator and coach."	4.56
Item 4: "I would recommend the LAPE program to other Early Interventionists who want to improve the effectiveness of their services for children with communication delays."	5.70
Item 5: "The parents/caregivers on my caseload who attended this session of LAPE improved their ability to help their children communicate better."	5.22
Item 6: "I hope to continue referring families on my caseload to the LAPE program."	5.50
Overall	4.84

Note. 0= "I strongly disagree with this statement"; 6= "I strongly agree with this

statement."

Helpfulness/relevance of Critical Skills activities. On the social validity survey,

participants first reported whether they had completed each Critical Skills activity, and

then used the 7-point scale described above to assess all completed activities along the

two following parameters: (1) "completing this activity provided me with skills that will make me a better parent/caregiver educator and coach"; and (2) "I will continue to use the skills I learned while completing this activity with the families on my caseload."

Table 16 depicts group means across both parameters for each activity, as well as overall group means. Means for Activities 1-4 all corresponded to average responses near "agree," while means for Activity 5 fell closer to "somewhat agree." Mean responses to the two parameters were always between 0-0.5 points of one another, demonstrating that responses to the two parameters were closely aligned. This suggests that participants' intention to continue using activities reflected their perception that the activities improved their parent/caregiver coaching skills. These results demonstrate that participants perceived all Critical Skills activities as valuable learning opportunities, but felt certain activities were more beneficial than others. In particular, participants identified Activities 3 and 4, which targeted specific CI-NCI strategies (*Creating Communication Opportunities*; *Waiting and +1 Strategies*), as the most helpful and relevant, and Activity 5 (*Reflection and Feedback*) as the least helpful and relevant.

Table 16

Social Validity Survey: Mean Ratings on Critical Skills Activities Items.

Critical Skills Activity Title and Description	LAPE (n= 10)	
	Parameter 1 *M*	Parameter 2 *M*
Activity 1: Assessing Communication Skills	5.22	4.78
Activity 2: Discussing Assessment Results	4.89	4.67
Activity 3: Creating Communication Opportunities	5.50	5.50
Activity 4: Waiting and +1 Strategies	5.57	5.43
Activity 5: Reflection and Feedback	4.14	4.29
Overall	5.06	4.93

Note. 0= "I strongly disagree with this statement"; 6= "I strongly agree with this statement"; Parameter 1: "completing this activity provided me with skills that will make

me a better parent/caregiver educator and coach"; Parameter 2: "I will continue to use the skills I learned while completing this activity with the families on my caseload."

Strengths and areas for improvement. Participants answered several open-ended questions pertaining to their experiences in the LAPE program. Primary themes, derived through qualitative content analysis, were designated when 30% or more of participant responses expressed similar sentiments. Primary themes are explored in subsequent sections.

Strengths of the LAPE program. Primary themes derived from question 1 ("name three things that you enjoyed about the LAPE program") included: (1) knowledge/concepts taught by LAPE were useful; (2) LAPE strategies and resources/tools were helpful for coaching parents/caregivers; and (3) LAPE made changes in parents/caregivers' practices and/or practitioners' interactions with parents/caregivers. See Table 17 for participant examples illustrating each theme and the percentage of participants whose responses aligned with the theme. Within Theme 1, the most frequently identified areas of CI-NCI knowledge were vocabulary development and rate of communication. Within Theme 2, participants frequently identified the CI-NCI principle of delivering intervention within daily routines. Many Theme 2 responses also referred broadly to "strategies," but few listed specific CI-NCI strategies. Notably, Theme 3 related primarily to families referred to LAPE by participants, rather than specific knowledge or skills targeted by the professional development program. This finding suggests that participants perceived LAPE as beneficial to their CI-NCI coaching skills generally, but more specifically valued the impact of the LAPE family education and coaching program on the families they referred.

Table 17

Strengths of the LAPE Program: Primary Themes.

Theme	Participant Examples	% (n=10)
Theme 1: Knowledge/concepts taught in LAPE were useful	- "I like the stages of communication with timelines of how long it takes." - "Recognizing the importance of <u>rate</u> of communication." - "Learning to appreciate the more subtle ways children communicate prior to using words." - "First 500 words in 5 stages was great information."	70% (n=7)
Theme 2: LAPE strategies and tools/resources were helpful for coaching parents/caregivers	- "Very easy and practical to implement into daily routines for families." - "Learning strategies to share." - "Simple strategies that are routine-based." - "Concrete visuals- explanations of strategies." - "Clear and well-made handouts." - "I learned some new ways to create communication opportunities."	60% (n=6)
Theme 3: LAPE made changes in parents/caregivers' practices and/or practitioners' interactions with parents/caregivers	- "My participating family felt empowered and effective making change in their child's communication." - "Made me feel more confident helping families get out of 'testing mode' when their child is in initial stages of communication." - "Watching families get more comfortable with strategies." - "Camaraderie developed with other parents."	50% (n=5)

Suggestions for improving the LAPE program. The primary themes derived

from question 2 ("name three things that you would change about the LAPE program")

included: (1) the program did not provide sufficient ongoing support for optimal

participant learning and completion of Critical Skills activities; (2) the initial 4-hour

training workshop did not sufficiently prepare participants for the program; and (3)

attending LAPE group session was sometimes difficult and/or impractical (see Table 18).

Themes 1 and 2 were highly linked, both suggesting that larger-scale education and

coaching initiatives would improve the program. Within Theme 1, most participants

suggested incorporating additional in-person support through group education/coaching

sessions and/or individualized feedback coaching. Theme 2 responses emphasized the

difficulty of applying CI-NCI-related knowledge and skills in Critical Skills activities

without having thoroughly addressed all pertinent competencies during the initial training

workshop. Theme 3 revealed that some participants found attending LAPE group

sessions difficult for practical reasons, and may thus have been unable to take full

advantage of this resource. These data demonstrate that participants believed a more

consistent, intensive, and direct system of support would improve their participation, and

that attending LAPE group sessions was not always a feasible method of receiving

optimal support.

Table 18

Suggestions for Improving the LAPE Program: Primary Themes.

Theme	Participant Examples	% (n=10)
Theme 1: The program did not provide sufficient ongoing support to enhance learning and help participants complete Critical Skills activities	- "A chance to check in face-to-face after a few weeks." - "Mid-term group check-in." - "More ongoing communication w/ LAPE staff." - "More detailed information as to what children LAPE is best used for/ criteria."	50% (n=5)
Theme 2: The initial 4-hour training workshop did not sufficiently prepare participants for the program	- "Initial training- give enough time to complete with everyone present for explanations so I don't have to review on my own for the first time." - "I did find it challenging to implement LAPE at home with just our short training."	40% (n=4)

Theme 3: Attending LAPE group sessions was sometimes difficult and/or impractical	- "The groups are long to ask working interventionists to attend." - "Make group sessions shorter- to 1 hour. Felt too long at times."	30% (n=3)

LAPE skills and strategies most relevant to EI/ECSE practice. Question 3 ("name the top three skills or strategies you learned in LAPE that you plan to continue using in your daily practice") themes were divided into two subcategories: (1) skills, i.e., specific areas of expertise applicable to CI-NCI coaching; and (2) strategies, i.e., specific CI-NCI strategies for enhancing communication skills in young children (see Table 19). Primary skill-related themes included: (1) calculating rate of communication and/or teaching parents/caregivers about the importance of rate; (2) teaching parents/caregivers about communication development; (3) utilizing video reflection to enhance parent/caregiver learning; and (4) coaching parents/ caregivers to implement CI-NCIs in daily routines. Primary strategy-related themes included two specific LAPE strategies: (1) "Wait": waiting for child-initiated communication; and (2) "+1": responding to teach new language skills. Data across subcategories demonstrate that the skills and strategies perceived by participants as most applicable to their future practice were strongly promoted by LAPE, suggesting alignment between programmatic targets and participant takeaways. Notably, however, the two strategy-related themes were reported more frequently than environmental arrangement strategies (i.e., *Creating Communication Opportunities*), which are also emphasized by LAPE and were incorporated into Critical Skills Activity 3.

Table 19

LAPE Skills and Strategies Most Relevant to EI/ECSE Practice: Primary Themes.

Primary Themes	Participant Examples	% (n=10)
Skill 1: Calculating rate of communication and/or teaching parents/caregivers about the importance of rate	- "Importance of <u>rate</u> of communication and initiation vs. learning words." - "Learning about rate of communication as it relates to word readiness."	40% (n=4)
Skill 2: Teaching parents/ caregivers about language development	- "Basic explanation of language development and what stage child is at." - "Feel more confident explaining first 500 word stages to families."	30% (n=3)
Skill 3: Utilizing video-recording to enhance parent/caregiver learning	- "Asking families to video a specific routine." - "Video of interaction during routines." - "Power of video and reviewing it together."	30% (n=3)
Skill 4: Coaching parents/ caregivers to implement CI-NCIs within daily routines and activities	- "That routines can include fun activities like going for a walk or coloring." - "Making strategies manageable by using daily routines."	30% (n=3)
Strategy 1: "Wait": waiting for child-initiated communication	- "Encourage waiting for initiation." - "Pause/wait."	40% (n=4)
Strategy 2: "+1": responding to teach new language skills	- "+1- and that it doesn't have to be a word." - "Add on."	40% (n=4)

CHAPTER IV

DISCUSSION

The purpose of this study was to evaluate the effectiveness of LAPE, a cross-disciplinary CI-NCI professional development program at the University of Oregon. Three research questions were posed, and data were collected through pre/post-questionnaires and anonymous social validity surveys. Several pertinent findings and clinical implications are discussed in the following sections.

Previous LAPE Practitioner Training Model Outcomes

The first research question focused on comparing baseline task performance, self-efficacy, and knowledge between practitioners who had previous LAPE experience and those who did not. The previous LAPE training model involved referring one or two families to the LAPE parent/caregiver program and attending between one and four parent/caregiver coaching sessions. These training experiences were primarily observational. Results of this study indicate that previous LAPE participation was correlated to use of more CI-NCI-related tasks and higher self-efficacy, but not CI-NCI knowledge. As highlighted by the professional development literature, EI/ECSE practitioners need more communication-specific training (e.g., Brown & Woods, 2013; Myers & O'Brien, 2015; Sylvester, et al., 2017), but busy practitioners may struggle to take part in structured training programs (Campbell, Chiarello, Wilcox, and Milbourne, 2009). This data shows that even minimal CI-NCI training supports practitioners' use of CI-NCIs and related self-confidence, helping them treat young children according to current service delivery standards (e.g., ASHA, 2008; DEC, 2014; IDEA, 2004).

At baseline, participants with previous LAPE experience reported that they

engaged in more CI-NCI tasks more frequently than participants without previous LAPE

experience. A key component of previous iterations of the LAPE program may have

been active participation in/observation of individual CI-NCI coaching sessions (e.g.,

one-on-one coaching with parents/caregivers in home or childcare settings). The largest

discrepancies between the prior and no prior experience groups were related to activities

frequently used during individual sessions, including *reviewing video of*

parent/caregiver-child interactions (i.e., Task 11), *helping parents/caregivers reflect on*

their use of communication strategies and providing specific feedback (i.e., Tasks 10 and

12), and *writing home practice plans* (i.e., Task 8). Application of target skills within

authentic situations is supported by the literature an effective adult learning strategy (e.g.,

Brown & Woods, 2010; Trivette, et al., 2009). It is possible that simply observing

sessions led by LAPE graduate students and supervisors and occasionally joining in gave

practitioners opportunities to learn about CI-NCIs in a low-pressure and supportive

learning environment, thus increasing their use of CI-NCIs in daily practice.

Even practitioners with LAPE experience used video reflection less than all other

CI-NCI tasks. They also felt the least confident engaging in this task. One possible

explanation for the prior experience group's relatively low use of video reflection is that

extenuating circumstances may make this task more time- and effort-intensive than other

tasks, including: (1) it requires suitable technology (e.g., smartphone) and technical

competence on the part of the practitioner and/or parent/caregiver; (2) it may create

added work for the practitioner and/or parent/caregiver; and (3) it may necessitate

additional communication and coordination between the practitioner and parent/caregiver

(e.g., reminders to take a video prior to the next session). Practitioners' low self-confidence may also have generated concerns that video reflection would be awkward for themselves and/or parents/caregivers. In turn, limited practice may have caused participants to feel even less confident using this task.

Task-by-task self-efficacy ratings suggest that participating in prior terms of LAPE helped practitioners gain confidence in their ability to implement most CI-NCI tasks. In general, more frequent use of CI-NCI tasks corresponded to higher task-specific self-confidence. For example, the prior experience group felt most confident with *helping parents/caregivers choose routines to practice communication strategies* (i.e., Task 4) and *teaching parents/ caregivers new communication strategies* (i.e., Task 7), both tasks they had used frequently. In contrast, the no prior experience group had used these tasks less frequently and felt less confident using them. Additionally, the no prior-experience group felt the least confident with the two tasks they had performed the least, including *writing home practice plans* (i.e., Task 8) and *reviewing video of parent/caregiver-child interactions* (i.e., Task 11). These findings align with the substantial body of evidence indicating that self-efficacy is a central mediating factor in one's competence, motivation and ability to participate in activities, and goal achievement (e.g., Bandura, 2012; Druckman & Bjork, 1994).

There were two exceptions to the pattern of more frequent reported task use corresponding to higher self-confidence. Practitioners across both groups reported that they frequently *use assessment results to discuss language development with parents/caregivers* (i.e., Task 2) and *write goals that target moving children to the next stage of vocabulary development* (i.e., Task 3), but the prior experience group reported

substantially higher confidence in these tasks. Both groups likely used these skills often because 70% of preschool children with disabilities have communication needs (Nelson, Nygren, Walker, & Panoscha, 2006) and goals targeting communication are more common than those for other developmental domains (Brown & Woods, 2013). Practitioners across disciplines are therefore often asked to write communication goals and work with the families of young children with communication needs, even if they don't feel prepared for it. On the pre-questionnaires, 19 of 20 participants reported that at least 50% of their caseload had communication goals, and 16 of 20 reported that they independently or collaboratively write communication goals for the children on their caseload. It is possible that, although both groups engage in tasks related to communication assessment and goal-writing, the prior experience group received more training specific to these practices through their participation in LAPE, resulting in higher confidence than the no prior experience group.

There were no significant differences between the prior and no prior experience groups on a CI-NCI knowledge test. Previous LAPE programs encouraged practitioners to participate as much as possible but did not provide structured, multi-componential in-service training. Thus, training did not always reflect principles of adult learning, such as providing sustained and repeated opportunities for learning (e.g., Bransford, Brown, & Cocking, 2000; Knowles, Holton, & Swanson, 2005). Given their typically brief, observation-based exposure to LAPE, participants may have been more capable of absorbing the concrete tasks they observed than any specific content. For example, a practitioner who attended two sessions might gain a broad understanding of several CI-NCI tasks, having watched them and/or listened to them being discussed. However, after

only two sessions, the practitioner may not recall specific targeted content (e.g., the importance of communication rate) as easily as tasks.

New LAPE Practitioner Training Model Outcomes

The second research question pertained to outcomes associated with EI/ECSE practitioners who participated in the new, more intensive LAPE training program. Results indicate that practitioners who completed all of the essential components of the new LAPE training program reported more frequent use of CI-NCI-related tasks than practitioners in the control group, even when accounting for prior LAPE experience. They also scored higher on a CI-NCI knowledge test. Experimental participants who did not take part in all essential program components had less robust outcomes, particularly with respect to reported task performance. This suggests that practitioners may need to participate fully in CI-NCI training programs to see changes in their practice. While there were no statistical differences between the two groups' mean self-efficacy ratings, the experimental group had higher ratings for all CI-NCI tasks. Unlike previous LAPE programs, this program used empirically supported principles of adult learning based on successful professional development programs and learning models (e.g., Campbell & Sawyer, 2009; Dunst & Trivette, 2009). Many program components aligned with principles guiding the successful Communication Coach program (Brown & Woods, 2013), including: (1) encouraging participant autonomy; (2) situating learning within the context of EI/ECSE service delivery; and (3) giving authentic examples of target skills and opportunities for sustained practice (Brown & Woods, 2013, p. 224). LAPE's structure also reflected recommendations for multi-componential programs, as opposed to

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solely "sit and get" training formats (e.g., Krick-Oborn & Johnson, 2015; Marturana & Woods, 2012).

Reported use of CI-NCI tasks was directly related to completion of the Critical Skills activities. Thus, embedding an explicit requirement for active practice of target skills in highly authentic contexts likely enhanced the experimental group's task performance results as compared to the control group. As indicated by the literature recommending multidimensional professional development programs (e.g., Artman-Meeker, Barton, Fettig, Penny, & Zeng, 2015; Markussen-Brown, et al., 2017), it is also possible that including several formats for learning and applying targeted behaviors enhanced participants' use of CI-NCIs. The provider manual, which contained detailed instructions and family-friendly LAPE resources, likely helped practitioners implement Critical Skills activities. Voluntary coaching sessions, many of which involved problem-solving specific CI-NCI tasks, may also have been helpful to participants who took advantage of this optional program component. Modeling or sharing communication strategies in LAPE toddler playgroups and/or other preschool or childcare settings gave participants additional opportunities to practice CI-NCI tasks beyond Critical Skills activities, and observing authentic examples of CI-NCIs during LAPE group and/or individual sessions may also have been beneficial.

Only 25% of the experimental group reported using video reflection on the pre-questionnaires, while 100% reported using this skill on the post-questionnaires. Additionally, only 50% of the group with prior LAPE experience reported using video reflection on the pre-questionnaires. These findings suggest that the new, more intensive LAPE program helped practitioners implement video reflection for the first time, and that

this particular program was more effective than previous LAPE programs for increasing use of video reflection. This may be due to the new program's multi-componential structure and adherence to several adult learning strategies. Critical Skills Activity 5 (*Reflection and Feedback)* included video reflection, and completing this activity was likely associated with the experimental group's growth with this skill. However, 75% of the experimental group completed Activity 5, while 100% reported using video reflection, suggesting that other program components helped participants use video reflection. Observing video reflection during individual LAPE sessions may have been helpful. Some participants may also have read the Activity 5 instructions to help them implement video reflection, while not necessarily completing all other elements of Activity 5.

Overall self-efficacy ratings suggest that the new program did not improve participants' CI-NCI-related self-confidence. One possible explanation is that participants' growing knowledge led them to more critically consider their own abilities. While participants in previous LAPE programs may have gained confidence after attending one to four sessions and becoming broadly acquainted with CI-NCIs, participants in the new, more intensive program may have acquired sufficient knowledge to recognize the number of demands and complexities associated with this type of intervention, possibly lowering their self-confidence.

Critical Skills activities may also have contributed to participants' relatively low self-efficacy ratings. It may have been particularly eye-opening to independently implement tasks for the first time with no direct support or feedback. Moreover, some participants only performed tasks once or twice, and thus had limited opportunities to "try

again." Thus, while explicit education on targeted content and applied practice are well-documented adult learning strategies (e.g., Artman-Meeker, et al., 2015; Dunst, 2015), these elements may in fact have contributed to low self-efficacy ratings, given the structure of this particular program.

The new, more intensive LAPE program may have helped practitioners feel more confident with specific CI-NCI tasks, chiefly those related to *helping parents/caregivers choose routines for practicing communication strategies* (i.e., Task 4) and *writing home practice plans* (i.e., Task 8). One possible explanation for relatively higher experimental group ratings on these specific tasks is their discussion- and/or education-based nature, as compared to more skills-based coaching tasks requiring practitioners to model communication strategies or give in-the-moment feedback. Practitioners may have felt less pressure performing these tasks, and their strong knowledge may have helped them educate parents/caregivers about topics like implementing communication strategies during daily routines.

The new, more intensive program helped practitioners learn CI-NCI-related facts, principles, and strategies, as demonstrated on the CI-NCI knowledge test. The experimental group's highest scores were on items pertaining to LAPE-specific content (e.g., the importance of communication rate, implementing communication intervention during daily routines, and communication strategies), as opposed to more general facts related to communication skills and development. This is likely because participants were exposed to and/or practiced these skills and concepts during LAPE sessions and Critical Skills activities. The program's longer duration may also have provided more repeated exposure to CI-NCI knowledge via direct instruction (e.g., during group sessions) and/or

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indirectly (e.g., during individual sessions). Reviewing the LAPE provider manual, including informational handouts outlining much of the program's targeted content in clear language, may also have enhanced participants' knowledge.

Clinical Training Implications

The third research question pertained to EI/ECSE practitioners' beliefs about the social validity of the new LAPE training model. As highlighted by the substantial ECE professional development literature (e.g., Schacter, 2015; Weber-Mayrer, Piasta, & Pelatti, 2012), it is valuable to consider practitioners' experiences and beliefs regarding targeted practices when developing training programs and interpreting outcomes. Several clinical training implications and recommendations arise from CI-NCI-related outcomes associated with the previous and new LAPE training models, as well as the experimental group's beliefs about the social validity of new model. These findings may aid in the design of future LAPE/similar CI-NCI programs targeting knowledge and skills that are highly relevant and likely to be maintained over time.

First, it appears that CI-NCI training programs like LAPE can provide multiple effective tiers of support to EI/ECSE practitioners across disciplines, with outcomes reflecting program intensity and specific program components. As transdisciplinary care models become more common, practitioners from various IDEA-related disciplines are expected to serve young children with communication needs (e.g., King, et al., 2009). However, exposure to and training in CI-NCIs appears to be inadequate for many of these professionals, both during and after graduate school (e.g., Brown & Woods, 2013; Francois, Coufal, & Subramanian, 2015; Myers & O'Brien, 2015; Sylvester, et al., 2017). Results of this study indicate that attending one to four parent/caregiver CI-NCI coaching

sessions, without any requirement to participate or practice skills in other contexts, can be effective for increasing practitioners' use of CI-NCI skills and related self-confidence.

Rigorous CI-NCI training programs may be too demanding for some practitioners, particularly those who treat children with communication delay/disorder less regularly than SLPs. On social validity surveys, several experimental group participants reported practical roadblocks to participating in the more intensive program, including the length of group sessions and family circumstances rendering Critical Skills activities difficult or impossible to complete. Providing less intensive learning opportunities embedded into community-based parent/caregiver training programs may be a time and resource-effective method of exposing practitioners to a variety of CI-NCI tasks, boosting their self-confidence, and connecting them with useful resources. Given the apparent dearth of feasible training opportunities currently accessible to this population, lower-intensity CI-NCI training may be a viable option for some practitioners. At the least, similar programs may be a practical starting point toward more widespread adoption of family-centered communication interventions that conform to the current research evidence, national mandates and practice guidelines (e.g., ASHA, 2008; DEC, 2014; IDEA, 2004).

However, it is evident that more intensive, multi-componential programs can more effectively prepare practitioners to independently implement CI-NCIs than brief, observational experiences. The new LAPE program, which incorporated four hours of upfront training, a take-home manual, attendance at parent/caregiver CI-NCI coaching sessions, applied practice, and voluntary individualized coaching, helped participants— even those who had taken part in previous LAPE programs—gain substantial CI-NCI

knowledge and perform more CI-NCI tasks, including complex tasks like video

reflection. Participants likely benefited from several learning formats (e.g., interactive

training with peers and an expert, observation, direct instruction, independent practice,

and clearly written overviews of CI-NCI strategies, principles, and tasks) which

addressed various individual learning styles. Participants found Critical Skills Activities 3

(*Creating Communication Opportunities*) and 4 (*Waiting and +1 Strategies*) particularly

useful. It may be that these activities reflected LAPE-specific skills that participants had

not previously learned, but considered valuable to their skill sets as EI/ECSE

practitioners serving young children with communication needs.

Overall, participants were highly satisfied with the program, reporting that the

knowledge and skills they learned were useful and relevant, and that they would

recommend the program to other EI/ECSE practitioners. These findings enhance the

limited available research on the effectiveness of CI-NCI-specific training programs

(Brown & Woods, 2013; Campbell & Saywer, 2009). The findings also support previous

research documenting the effectiveness of EI/ECSE and ECE professional development

programs incorporating several elements, including face-to-face group training,

observation of targeted skills, straightforward explanations of targeted behaviors and

underlying principles, and highly participatory, active application of newly acquired

knowledge and skills in authentic situations (e.g., Artman-Meeker, et al. 2015; Gupta &

Daniels, 2012; Markussen-Brown, et al., 2017; Werner, Lintig, Vermeer, & IJzendoorn,

2016).

The design of future CI-NCI training programs for EI/ECSE practitioners should

take into consideration these distinct levels of support provided by the previous LAPE

training model and the new LAPE training model, as well as outcomes associated with each. While relatively minimal LAPE experience appeared to result in increased self-reported task performance and self-efficacy, the new program appeared to help participants implement even more CI-NCIs and build stronger foundational CI-NCI knowledge. Although intensive programs likely result in more significant results, they may not be appropriate for all practitioners. The fact that two experimental participants (20%) did not fully participate in the current study speaks to the relative difficulty of intensive programs, as does participant report of practical roadblocks. As indicated by Schacter (2015) and Weber-Mayrer, et al. (2015), considering participant experiences and beliefs in the design of early childhood training programs may help developers differentiate instruction in order to train skills that are accepted and maintained by more participants. Future LAPE or similar CI-NCI training programs should consider developing multi-tiered training systems to accommodate a variety of practitioners with different needs, levels of experience, and availability to participate.

Second, in order to be truly "intensive," future CI-NCI training programs should include several additional training elements for practitioners who choose to participate. While the new LAPE program was more intensive than previous programs, it lacked several empirically supported adult learning practices, including in-person feedback coaching, participant self-reflection, and repeated real-word practice (e.g., Brown & Woods, 2010; Dunst, 2015; Snell, Forston, Stanton-Chapman, & Walker, 2013). Experimental group participants reported on social validity surveys that the amount of direct training they received was insufficient to help them apply knowledge and skills in real-world contexts. This may have resulted in fewer Critical Skills activities completed

and lower self-confidence ratings. Several participants suggested that future programs incorporate in-person feedback coaching. This recommendation aligns with EI/ECSE, ECE, and adult learning literature highlighting the benefit of direct coaching within multi-componential professional development programs (e.g., Artman-Meeker, Fettig, Barton, Penney, & Seng, 2015; Dunst & Trivette, 2009; Krick Oborn & Johnson, 2015; Markussen-Brown, et al., 2017; Woods, et al., 2011).

Some practitioners may consider the opportunity to receive in-person feedback coaching during their regularly-scheduled sessions a more feasible training option than attending multiple parent/caregiver coaching sessions. In particular, feedback coaching and self-reflection may be highly beneficial when practitioners are expected to implement new or more complex CI-NCI skills, such as video reflection. Experimental group participants reported low self-efficacy with video reflection and rated Activity 5 (*Reflection and Feedback),* which included video reflection, as the least helpful and relevant Critical Skills activity. However, several participants noted video reflection as a relevant takeaway on the open-ended portion of the social validity survey. This suggests that participants valued learning about video reflection and would like to continue using this skill, but that they did not receive sufficient training to implement it confidently.

In addition to ongoing support, future programs should provide more upfront training. Experimental group participants reported on social validity surveys that it was difficult to independently review new information after the brief initial workshop, and was in turn difficult to apply this knowledge in Critical Skills activities. As indicated by Campbell and Sawyer (2009) and Dunst (2015), EI/ECSE training programs should provide explicit instruction in targeted content in order to effectively transmit this

information to participants. When participants are given large amounts of new information and expected to apply it, all of the most pertinent targeted content should be covered upfront in a straightforward and methodical manner, ideally in person. Extending the total amount of in-person training to at least eight hours would likely increase the effectiveness of future LAPE programs. This training could be administered at several points during the intervention.

Third, results of the current study highlight the effectiveness of partnering with local EI/ECSE agencies to train professionals across disciplines in CI-NCIs. LAPE is a CI-NCI-specific program designed similarly to the well-documented FGRBI professional development model (e.g., Friedman, et al., 2012; Salisbury, et al., 2010; Woods, Kashinath, & Goldstein, 2004), which emphasizes collaborating with community-based Part C agencies to support young children's development. Instead of simply teaming with the local agency to deliver in-service training, however, LAPE has embedded the in-service training program within its existing parent/caregiver CI-NCI coaching program. This innovation allows LAPE to support the agency's practitioners on multiple levels, both through participation alongside families they recruited to the parent/caregiver program and through applied practice with additional families on their caseloads. On social validity surveys, experimental participants indicated that they strongly valued the program's benefit to enrolled families, including increased confidence and use of communication strategies, as well as bonds formed with other families. Participants also valued the program's positive impact on their own relationships with families they referred to LAPE and other families on their caseloads. Experiencing successes in the parent/caregiver program may inspire practitioners to implement CI-NCIs with other

families and provide a roadmap for accomplishing similar goals. If LAPE offers in-person coaching in the future, this crossover support to practitioners' "real world" daily practice will only be enhanced.

LAPE also serves more generally as an example of a successful partnership between a university-based CI-NCI program and a community EI/ECSE agency. Over the past nine years, LAPE's effectiveness as an intervention for young children with communication delay/disorder and a professional development program has been made possible through collaboration between the University of Oregon and this local agency. This longstanding partnership has benefited numerous practitioners across disciplines by providing repeated exposure to family-centered naturalistic communication interventions in various contexts and conformations, in contrast to brief, "one shot" CI-NCI training programs. Thus, LAPE is a model of an effective, ongoing CI-NCI program built on a foundational relationship with a local EI/ECSE agency.

Limitations

The design of this study had several limitations. First, the sample size was relatively small. A larger sample would likely yield data more representative of the broader EI/ECSE population, increasing the reliability and validity of statistical analyses and rendering inferences about practitioners' knowledge and skills more reflective of this population as a whole. Additionally, although the study included three OTs and two PTs, most participants were developmental specialists, and SLPs were excluded. A more heterogenous sample with respect to discipline, and specifically including SLPs, would generate a more comprehensive picture of LAPE's potential impact on practitioners across a wider spectrum of IDEA-related disciplines. This would also allow for

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comparison of outcomes across disciplines to specifically evaluate the potential impact of the SLP population's communication-centric course of study.

There were also multiple limitations related to outcome measurement. All outcomes were obtained through participant self-report. In the future, more objective and direct outcome measures will make for less biased and more precise data analysis, increasing the confidence of research findings. In particular, analyzing LAPE participants' use of CI-NCIs in-person or via video will allow for superior quantitative and qualitative analysis of their skills in authentic contexts, as well as comparison of task performance levels across timepoints. Additionally, some participants may have accessed outside resources to answer post-questionnaire knowledge questions, despite instruction to work independently. Future pre- and post-knowledge tests should be administered to all participants in a standardized manner and in the presence of a program developer or other designated administrator. Finally, there was a discrepancy between the number of Critical Skills activities reported by participants on social validity surveys versus post-questionnaires, likely due to unclear wording on the social validity survey. Because social validity surveys were anonymous, it was impossible to classify each participants' satisfaction outcomes according to the number of Critical Skills activities they had completed, which would have allowed for more nuanced analyses of social validity outcomes.

Future Research Directions

In considering the clinical implications and design limitations of the current study, several opportunities for continued research emerge. Future studies should further examine effective models of CI-NCI-specific training for EI/ECSE professionals by

integrating several important adult learning strategies into in-service training programs, including intensive upfront training, ongoing feedback coaching and guided self-reflection, and repeated opportunities for applied practice of target skills. Future research should also further explore the potential impact of differentiated instruction and dosage for participants with varying experiences, needs, and availability. When possible, studies should involve larger and more varied samples. This would provide more insight on the effectiveness of CI-NCI programs for practitioners across IDEA-related disciplines, including the potential impact of multi-tiered programs for practitioners from different backgrounds. Similar studies should also shift to direct observation of participants' skills as a primary means of outcome measurement. Observation could be incorporated into in-person coaching sessions and/or accomplished via video review of applied practice activities. Finally, given that the ultimate goal of implementing CI-NCIs is to improve young children's communication skills in accordance with current research and national recommendations, it would be valuable for future studies to collect data reflecting the impact of practitioners' use of CI-NCIs on parent/caregiver outcomes (e.g., use of communication-enhancing strategies) and child outcomes (e.g., rate of communication and MLU).

Conclusion

This study was designed to examine the effectiveness of the LAPE program as a model of in-service CI-NCI professional development for EI/ECSE practitioners across disciplines. Previous LAPE experience involved observing between one and four parent/caregiver CI-NCI coaching sessions. The new, more intensive program incorporated a four-hour initial training workshop, a take-home manual, and applied
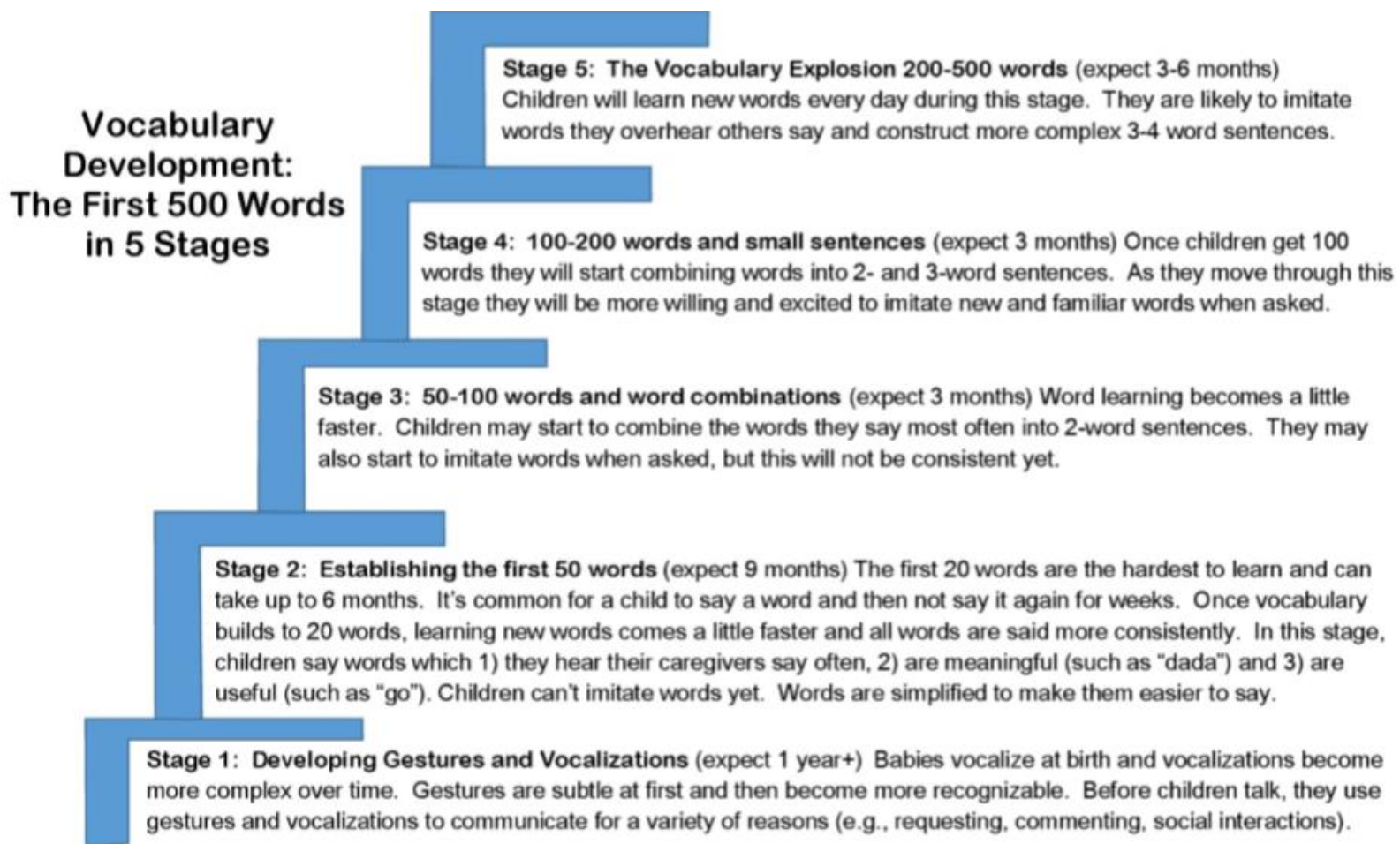
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practice in real-world contexts. Analyses of pre-questionnaire data revealed that practitioners with prior LAPE experience reported significantly higher use of CI-NCI tasks and self-efficacy ratings than those without LAPE experience, but did not score better on a CI-NCI-related knowledge test. Analyses of post-questionnaire data revealed that practitioners who completed most of the requirements of the new, more intensive LAPE program reported significantly higher use of CI-NCI related tasks and had better scores on a CI-NCI knowledge test, but did not have significantly higher self-efficacy ratings. Analyses of social validity surveys revealed that participants of the new, more intensive LAPE program were highly satisfied and intended to continue using CI-NCI skills in their future practice, but believed they would have benefited from more intensive upfront training and feedback coaching.

While these findings document the effectiveness of LAPE for improving a variety of CI-NCI-related competencies in EI/ECSE practitioners, further research is needed on several factors that may moderate the program's impact. In particular, it will be important to closely evaluate the effects of incorporating intensive upfront training, coaching, and self-reflection in future programs. It may also be enlightening to explore the effects of differentiating instruction and dosage based on participant variables such as discipline, caseload, and availability. This future research may ultimately help define the training elements that will provide optimal support to EI/ECSE professionals across disciplines who serve young children with communication needs.

PROVIDER MANUAL: LAPE HANDOUTS AND WORKSHEETS

Vocabulary Development: The First 500 Words in 5 Stages

Stage 5: The Vocabulary Explosion 200-500 words (expect 3-6 months) Children will learn new words every day during this stage. They are likely to imitate words they overhear others say and construct more complex 3-4 word sentences.

Stage 4: 100-200 words and small sentences (expect 3 months) Once children get 100 words they will start combining words into 2- and 3-word sentences. As they move through this stage they will be more willing and excited to imitate new and familiar words when asked.

Stage 3: 50-100 words and word combinations (expect 3 months) Word learning becomes a little faster. Children may start to combine the words they say most often into 2-word sentences. They may also start to imitate words when asked, but this will not be consistent yet.

Stage 2: Establishing the first 50 words (expect 9 months) The first 20 words are the hardest to learn and can take up to 6 months. It's common for a child to say a word and then not say it again for weeks. Once vocabulary builds to 20 words, learning new words comes a little faster and all words are said more consistently. In this stage, children say words which 1) they hear their caregivers say often, 2) are meaningful (such as "dada") and 3) are useful (such as "go"). Children can't imitate words yet. Words are simplified to make them easier to say.

Stage 1: Developing Gestures and Vocalizations (expect 1 year+) Babies vocalize at birth and vocalizations become more complex over time. Gestures are subtle at first and then become more recognizable. Before children talk, they use gestures and vocalizations to communicate for a variety of reasons (e.g., requesting, commenting, social interactions).

Developed by Heather Moore, Ph.D. CCC-SLP for the Language and Play Every Day Program. University of Oregon Communication Disorders and Sciences Program (updated September, 2016).

THE FIRST 500
STAGE 1: DEVELOPING GESTURES AND VOCALIZATIONS

THINGS TO KNOW

- Children typically start talking when they confidently and consistently use gestures and sounds to communicate (are effective *nonverbal* communicators).
- Helping a child to learn to communicate for a variety of purposes through gestures and vocalizations will give them the building blocks they need to talk later. Young children usually communicate in order to: *protest* (such as pushing something away they don't like), *request* (such as reaching towards something they want), *comment* (such as showing a new toy they found), *initiate a favorite game* (such as peek-a-boo), *call attention to themselves* (such as clapping when they build a block tower), and *greet others* (such as waving "bye-bye").
- Babbling starts with simple noises, but then becomes increasingly complex. Usually, children are babbling in complex patterns that sound like adult conversation when they start to say their first words.
- First gestures are natural (such as reaching towards a desired object) and parents typically identify them and react to them before an unfamiliar adult. Children usually learn adult-like (symbolic) gestures (such as waving bye-bye or putting their finger to their mouth to "shh") before they say their first words.
- Children are typically using a combination of vocalizations and gestures to communicate with their family at an average rate of 2 times per minute before they say their first words.

GOALS TO CONSIDER

- Increase the number of sounds and combination of sounds your child says during play (first simple then complex)
- Increase the number of gestures your child uses to communicate (first natural gestures then learned, symbolic gestures).
- Increase your child's ability to use their gestures and sounds for a variety of purposes across daily routines, including: requesting, protesting, showing/commenting, initiating social games, calling attention to himself/herself, and greetings.
- Increase your child's rate of nonverbal communication to at least 2 times per minute during social or play interactions.

Daily Routines and Activities

You don't need to put aside special time to teach new communication skills to your child. Your child can learn new skills from you during all the activities you do together during the week. Learning new skills through daily routines works because daily routines/activities are:

➢ **Predictable**: Since these activities occur often, your child learns to predict what happens first, next, and last. This predictability is comforting and allows them to be attentive, engaged learners.

➢ **Frequent**: We know that children's first words are likely to be words they hear their parents and other caregivers say frequently. Parents and caregivers tend to use the same set of words and sentences during daily routines and activities, such as "time to eat", "let's clean up", "let's go", "push!", and "hold my hand".

➢ **Flexible**: With some small changes, you can increase the number of opportunities you create for your child to communicate with you during daily routines and activities. These opportunities allow time for your child to practice their current skills and be shown new skills throughout their day.

There are lots of different types of routines and activities that you may do with your child every week, including:

➢ **Personal Care Routines**

Dressing	Mealtime	Diapering	Bathing	Bedtime

➢ **Play Activities**

Playdough	Scribbling	Puzzles	Blocks	Ball Play	Reading Books

➢ **Social Games**

Peek-a-boo	So Big!	Hide and Seek	Chase	KaBoom!

➢ **Household Chores**

Walking/ feeding/ giving special treats to your family pet		Washing the dishes	Folding the laundry
Setting the table	Getting the mail	Taking out the trash	

➢ **Outings**

Grocery shopping	Going for a walk	Playing at the park	Getting in/out of the car

Daily Routines and Activities- Worksheet

Make a list of all the routines and activities you do with your child (children) weekly. Remember- there are lots of different types of activities. Some are consistent across families (e.g., bath time) and some will be specific to your family. Look at the list on the Daily Routines and Activities Handout.

Next, go back and underline routines that meet all of the following criteria:

- ✓ I enjoy doing this routine/activity with my child.
- ✓ My child generally likes to be part of this routine/activity.
- ✓ This routine/activity is generally calm and open ended- I'm usually not in a rush to get it done.
- ✓ Usually, there's not a lot of distraction for me or my child during this activity (e.g., lots of other people around, noise from the TV, other noises to distract)- we can really focus on each other.

Now, choose 3 routines from the ones you underlined above. Make sure to pick routines that best meet the criteria listed above.

1.

2.

3.

Finally, circle your favorite routine from the three you chose above. In the next week, you will be taking a video of you and your child during this routine. The video will provide valuable information about your child's communication, and the strategies you use to encourage him or her to communicate. This information will help us decide on goals for your family to work toward.

We will keep this worksheet as a reminder of additional routines to practice in the future.

Language and Play Every Day

Daily Opportunities to Communicate

Communication Opportunities = Communication Practice

➢ Every time you and your child "talk" together, your child gets to practice their current communication skills and be shown new skills they can use in the future.

➢ With some small changes, you can increase the number of opportunities you create for your child to "talk" with you during daily routines and activities.

➢ The number of times you and your child "talk" with each other throughout the day will impact the rate in which your child learns new communication skills.

How Often Does your Child Currently Communicate?

➢ How many times did your child communicate with you during your recorded routines/activities? Is this typical? Does your child need to increase the number of times they communicate with you during an activity? Creating opportunities is more important in the early phases of vocabulary development (under 200 words) and becomes less important as children independently talk and initiate.

➢ Your child's personality may influence their rate of communication (adapted from "Learning Language and Loving it" by Elaine Weitzman and Janice Greenberg):
   o **Sociable children** enjoy communicating with everyone all the time and typically have a very high rate of communication. Their parents don't usually need to create opportunities for them to communicate. They are always "talking" about what they see and asking for what they want and need. They talk even if no one understands.
   o **Reluctant** children need extra time to warm up to people. They may enjoy spending more time with adults than with other children. If communicating is difficult for them, they might be reluctant to try. They are more likely to respond than initiate and so have have lower rates of communication. Parents may need to create more opportunities for their reluctant children to communicate during daily routines.
   o **Children with their own agendas** tend to be more independent and show little interest in sharing their thoughts, ideas, or observations with other people. They may have a much lower rate of communication and less practice communicating. Parents may need to create more opportunities for their children to communicate during daily routines.

> **Passive** children rarely ever repond or initiate communication and tend to have a lower rate of communication. They are not very active and are not as interested in play. Parents have to work harder to create new opportunities for their children to communicate during daily routines.

Give Your Child A Choice

Give your child a choice between two or more objects or activities (request)

- Food choices
- Clothing choices
- Choices of what to do or what to do next
- Choices of where to go or sit

In View But Out of Reach

Place a desirable object where your child can see it but cannot reach for it, so your child needs to ask for it (request)

- Put favorite toys on a high shelf
- Put bath toys on the bathroom counter not in the bathtub
- Put food on the table not on the highchair
- Stand up when you give toy choices so child can't reach

Assistance

Create situations in which your child needs to "ask" for your help (request)

- Give your child hard to operate toys
- Move the stool away from the sink
- Close bottles, jars, faucets very tightly

Piece by Piece

Give small portions of preferred objects so that your child needs to ask for more (request)

- Give one block/puzzle piece at a time
- Give small amounts of food
- Tickle, bounce, swing your child for small amounts of time

Do Something Silly

Do something that is unexpected, so you and your child can talk about it (comment or protest)

- Put clothes on the wrong way
- Change the words of a favorite song
- Say the wrong word
- March or walk in a funny way

Add Something New or Wrong

Add something new or unexpected to a favorite activity so you and your child can talk about it (comment or protest)

- Give dolls or trucks a "bath"
- Have a dinosaur ride a train
- Hang a new picture over the changing table or in front of car seat
- Give the wrong food

+1: Responding to Teach Something New

Set the Stage and Wait!

1. Do everything you can to limit distractions (such as turn off the TV, invite siblings to join the play, put away your phone.

2. Create an opportunity for your child to communicate.

3. Wait! Remember not to anticipate your child's needs and not to ask a question to get them to talk. Just wait.

Identify When your Child Initiates Communication

➢ Your child's communication may be subtle and you might need to look and listen closely.

➢ Remember, children communicate in lots of ways: eye contact, pointing, reaching, smiling, pushing, pulling, sounds, words, sentences. If it feels like your child is trying to tell you something, then they are.

➢ Accept and immediately respond to your child's attempt to communicate with you. Don't wait for them to do something else (or something preferred, such as wait for them to say "please"). At that moment, they are communicating in the best way they can- don't try to "make" them do something better.

+1: Responding to Teach Something New

➢ As soon as your child communicates, respond immediately by:

1. Looking directly at them (and if your child is requesting an object, hold the object in view).

2. Say what you'd like your child to say the next time. **Repeat what they said/did and add something new (+1).**

3. Immediately do what your child was requesting. Don't wait. Let your child know that when they communicated, they got what they wanted. If you can't do what they requested, clearly explain why.

Examples

Opportunity Created: A see-through jar is put on the kitchen table.

Wait! **Identify Communication Attempts**	**+1: Respond in a way so that you teach something new**
Waited… Jacob walked up to the table saw the cookies, looked at you and then sank to the floor and cried **(eye gaze)**.	Get down on your Jacob's level, reach towards the cookies, say "cookie" **(eye gaze + word)**. Get one small cookie and immediately give it to Jacob.
Waited… Margot took your hand and pulled you to the table and looked at the cookies **(gesture + eye gaze)**.	Get down on your Margot's level, point at the cookies and say "cookie" **(gesture + eye gaze + word)**. Get one small cookie and immediately give it to Margot.
Waited… Jose pointed at the cooke jar and whined **(gesture + eye gaze)**.	Get down on Jose's level, point at the cookies and say "cookie" **(gesture + eye gaze + word)**. Say, "I'm sorry. No more cookies".
Waited… Maya said "taty" and pointed at the cookies **(gesture + word)**.	Take out one small cookie, hold it close to your face (so Maya sees the cookie and you) and say "want cookie" **(repeat word + new word)**. Give her the cookie.
Waited… Aran said "want tooty!" **(2 words)**.	Take out one small cookie, hold it close to your face (so Aran sees the cookie and you) and say "I want cookie" **(3 words, adding the pronoun he would use)**. Give him the cookie.

Opportunity Created: A new picture of a dog is hung over the diaper table.

| Wait! **Identify Communication Attempts**	**+1: Respond in a way so that you teach something new**
Waited… Jacob looked up at the dog picture and smiled **(eye gaze)**.	Smile, look and point towards the picture, say "doggie" **(eye gaze+ gesture + word)**.
Waited… Margot looked at the picture and vocalized "gooo" **(eye gaze + vocalization)**.	Look and point towards the picture, say "doggie" **(eye gaze+ gesture + word)**.
Waited… Jose pointed at the pictures and grunted **(gesture + vocalization)**.	Look and point towards the picture, say "doggie" **(gesture + word)**.
Waited… Maya said "doddie" and pointed **(gesture + word)**.	Look and point towards the picture, say "Big doggie" **(gesture + repeat word + new word)**.
Waited… Aran said "bown dog!" **(2 words)**.	Look at the picture and say "Brown doggie is jumping" **(4 words, so sentence in grammatically correct)**

PROVIDER MANUAL: CRITICAL SKILLS ACTIVITIES

Activity 1: Assessing Communication Skills

Help a parent, teacher, or caregiver (not participating in LAPE) to complete two communication inventories and choose a daily routine or activity to record for a parent-child communication sample. Then, using this sample, calculate their child's rate of communication.
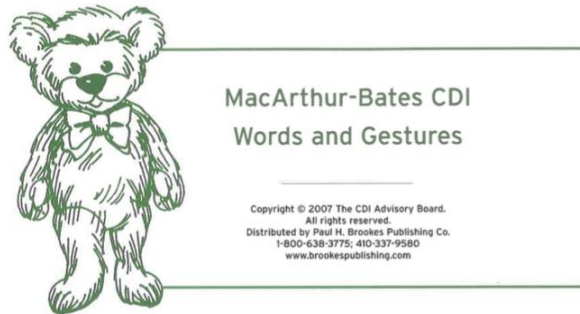
Please gather and review the following materials for Activity 1:

❖ Teddy Bear Questionnaire Directions and Supplemental Communication Questions form (in your *LAPE EI Provider Packet*).

❖ MacArthur-Bates Communicative Development Inventories (CDI): Words and Gestures protocol.

  ▪ *The CDI is a parent-completed checklist of early words (spoken and signed) and gestures that indicates which words a child understands, speaks, and signs, and which gestures a child uses.*

  ▪ *The CDI has two parts-- Part I: Early Words, and Part II: Actions and Gestures.*

  ▪ ***The CDI protocol is available through Early Child CARES- please let us know if you have trouble obtaining one.***

❖ LAPE "Daily Routines and Activities" handout ***and*** worksheet (in your *LAPE EI Provider Packet).*

❖ Caregiver-Child Interaction Worksheet (in your *LAPE EI Provider Packet).*

Activity 1 Tasks:

1. Choose a parent(s)/ caregiver(s) to work with who 1.) has a child with a language delay and a vocabulary under 100 words and 2.) is not or has not

participated in LAPE. It may also be a daycare provider or preschool teacher for a child on your caseload.

2. Give the parent/caregiver the Teddy Bear Questionnaire Directions and Supplemental Communication Questions form and CDI to complete. We find that it is helpful to go over the directions (on the supplemental form), as they may be confusing. You might also want to cross out the sections (in Part II) that you don't need them to complete. If needed, please help the parent/caregiver complete the questionnaires. If the parent is highly literate and capable, you can leave them for the parent to complete and pick them up on your next visit.

3. Discuss the "Daily Routines and Activities" handout with the parent/caregiver. Emphasize the importance of teaching new language skills during daily routines and activities.

4. Help the parent/caregiver fill out the "Daily Routines and Activities" worksheet to decide on a good routine for practicing communication strategies with their child. Make sure they choose a routine that suits their schedule and needs as a family.

5. After the family decides on a routine, ask them to video-record the routine within the next week. If they don't have the equipment (i.e.: a smartphone, tablet or other recording device) you can arrange to video tape it for them. Both the child and the parent should be clearly visible in the video. Videos will vary in length according to the length of the activity, but should be at least 2 minutes long.

6. Get the video from the family. Make sure to store in a safe and secure location (adhere to EC CARES guidelines for protecting client data).

7. Independently (without the family present) watch the video and complete the Caregiver-Child Interaction Worksheet by:
   - Recording all the child's communicative behaviors, both symbolic and non-symbolic (NsCBs) in the first column in the table on the first page. See definitions on page 2.

   - Indicating the "Type of Communication Behavior" in the second column and the "Type of Communication Act" in the third column. See definitions on page 2.

   - Complete the analyses on page 2.

   - Watch the video again, this time focusing on the parent's behaviors, and complete the Caregiver Observation Form located on page 3.

Activity 2: Discussing Assessment Results

Interpret the results of your assessment and create a simple report. Then, share this information with a parent/caregiver and discuss their child's language development and potential communication goals.

Please gather and review the following materials for Activity 2 *(included in your <u>LAPE EI Provider Packet</u>):*

- ❖ "Your Child's Communication Development: Current Skills and Next Steps"

- ❖ "Vocabulary Development: the First 500 Words"
- ❖ "The First 500"- handout appropriate for the child's vocabulary stage

Activity 2 Tasks:

1. Independently (without the parent/caregiver), complete the "Your Child's Communication Development: Current Skills and Next Steps" worksheet based on the information you gathered in Activity 1 and the handout "Vocabulary Development- the First 500 Words". Determine the communication goals that you think would be the most appropriate for the child you assessed based on information you received in the LAPE EI training. Don't worry that these goals might be different from your IFSP goals- you can think of them more as short term objectives that hopefully align with the goals stated on your IFSP. If you need assistance or have questions, please contact Kelsey.

2. Meet with the parent/caregiver and:

    - Discuss the stages of vocabulary development using the "Vocabulary Development: the First 500 Words" handout.

    - Use the appropriate page of the "The First 500: What to Know and Goals to Consider" handout to share information about their child's vocabulary development. *For example, for a child in Stage 2, review the*

page titled "Stage 2: Establishing the First 50 Words," and discuss topics such as:

- *How the first 20 words can take up to six months to learn, so patience is important.*

- *How children are not able to imitate the words adults say during Stage 2.*

- *How important it is to encourage children to communicate more frequently during Stage 2, instead of trying to get them to use new modes of communication.*

- Go over the completed "Your Child's Communication Development: Current Skills and Next Steps" worksheet. Discuss potential new communication goals with the family.

Activity 3: Creating Communication Opportunities

Teach a parent/caregiver how to create opportunities for their child to communicate. Then, with the parent, watch a video of the parent and child during a daily routine. Then, collaborate with the family to write a plan for creating new opportunities for communication within that routine.
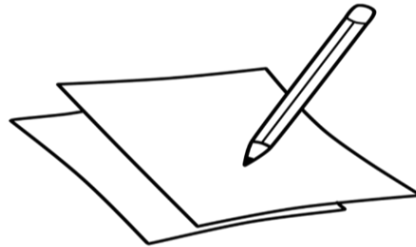
Please gather and review the following materials for Activity 3:

- ❖ LAPE "Daily Opportunities to Communicate" handout *(in your LAPE EI Provider Packet). Please read this through carefully to familiarize yourself with the handout before the parent session.*
- ❖ Video of the parent/caregiver and child participating in a daily routine together. You can use the one you collected in Activity #1 if you are going to be meeting with the same parent or have the parent/caregiver collect a new one (if you want to do this activity with another family).
- ❖ Paper & writing utensil to write a plan for a family to practice creating new communication opportunities.

Activity 3 Tasks:

1. Meet with the parent/caregiver and review the "Daily Opportunities to Communicate" handout, including:
   - Why it is important to create communication opportunities: it provides chances for children to practice initiating communication, which teaches them new language skills.

   - How children's personality types can influence their rate of communication, and which types of communication opportunities might be most effective for children with different personalities.

   - The 6 categories of LAPE Communication Opportunity strategies: giving choices, assistance, in view but out of reach, piece by piece, do something silly, add something new or wrong.

2. Watch the video that was collected previously with the parent/ caregiver. You can watch the video the whole way through and then reflect on it or stop

it as you go and discuss—whichever works best for you and the family. Explain to the parent that while watching, you both will be looking for:

- the types of communication opportunities that were created for their child to communication and

- new opportunities they could have created based on what they just learned from the "Daily Opportunities to Communicate" handout.

3. When discussing opportunities with the family, make sure you allow the parent/caregiver to reflect first. It will mean more to them if they have the opportunity to identify strengths or come up with ideas.

4. In addition to discussing the opportunities the parents/caregivers created and could create, you can also point out:

- How often they created opportunities for their child to communicate and offer suggestions for future practice. For example, if a parent created five opportunities during a 10-minute activity, suggest that they increase this to ten opportunities during a 10-minute activity.
- When the parent did create an opportunity, how the child responded. For example, when the parent provided a choice of snack the child responded by pointing but when food was just put on the plate the child didn't communicate at all.

5. With the family, create a written plan for practicing creating communication opportunities, based on the discussion you just had and the suggestions you offered. Include the following:

- a weekly goal for how often the parent/ caregiver will create communication opportunities while practicing a routine (for example, ten times during a 5-minute activity).

- a weekly goal for 3-4 new communication opportunities the parent/s will create while practicing the routine, such as putting toys out of reach in the bathtub, giving them 1 by 1 when the child requests, and giving choices of the bath toys when the child points at them.

Activity 4: Waiting And +1 Strategies

Teach a parent/caregiver about waiting for child-initiated communication and responding to children's communication in ways that teach them new language skills. Then, practice these strategies together.

Please gather and review the following materials for Activity 4 *(both included in your* <u>LAPE EI Provider Packet</u>*)***:**

❖ LAPE *Wait!* handout
❖ LAPE *+1: Respond to Teach Something New* handout

Activity 4 Tasks:

1. Explain and discuss the information provided in the *Wait!* handout with the parent/caregiver. In addition to presenting everything in the handout, discuss:

   - The way the child currently communicates (modes of communication), *for example, words, gestures, eye gaze, sounds, body movements*. Explain how important it is to be aware of all different types of communication modes, so that they can identify when their child initiates communication. You should know whether the parent/caregiver is good at identifying the child's communication attempts based on the parent-child sample you assessed.

   - If the family needs a reminder about how to create communication opportunities (from Activity 3), provide a review of this strategy.

2. Explain and discuss the information provided in the *+1* handout with the parent/caregiver. In addition to presenting everything in the handouts:

   - Discuss how the +1 strategy can be tricky to use – because adults are used to talking in much longer sentences – but practicing helps it feel more natural!

- You might want to role play a conversation with the parent and practice +1. It's harder than you think.

3. After your discussion and some practice, engage in a daily routine with the child and the parent (preferably the same that was recorded in Activity 1, if that is possible). Together, you and the parent should practice creating new communication opportunities, waiting for the child to communicate, and the +1 strategy during the routine. If the parent/caregiver is uncomfortable practicing these strategies at first, you should take the lead until they appear more comfortable. If the parent/caregiver jumps right in, then you can take a back seat and only participate as needed.

4. As you practice the strategies during the routine:

   - Provide suggestions to the parent/caregiver in the moment. *For example, if you notice the child communicating and the parent doesn't identify the child's communication attempt, point it out to the parent.*

   - Reinforce the parents/caregivers use of communication-enhancing strategies in the moment. *For example, if the child says "more" and the parent says "more toys," point out that it was a great +1.*

5. After the activity, end on a very positive note with the parent/caregiver. Make a plan with the family for continued practice.

Activity 5: Reflection and Feedback

After watching a video of a parent/caregiver practicing communication strategies with their child, help them reflect on the strategies they used, and then provide them with specific feedback.

Activity 5 Tasks:

1. After the parent/caregiver has been practicing the LAPE strategies (creating communication opportunities, wait!, and +1) for at least 3 weeks, ask them to video-record themselves using the strategies with their child during a daily routine. They can record by themselves without you present or you can help. Explain that you will be watching the video together in order to reflect on the progress the family has made in supporting their child's communication, and to help plan for continued progress. *Both the child and the parent/s should be clearly visible in the video. A video taken on a smartphone works well, as long as you are able to see and hear everybody engaging in the routine.*

2. Watch the video the whole way through silently with the parent/caregiver. Afterwards, encourage the parent/caregiver to reflect on their use of communication-enhancing strategies by asking them each of the following questions:

   ▪ What went well?

   ▪ What do you want to think about for the next time you practice this routine?

   Do not provide your own feedback until the parent/caregiver has had an opportunity to reflect without your input. Parents learn the most when they come up with answers and ideas themselves! With a little bit of time, they might have an epiphany about how they can continue to support their child's communication—so allow them plenty of time to think.

3. After the parent/caregiver has reflected, provide your own ***specific feedback*** based on everything you know about supporting young children's communication, and what you saw the parent/caregiver and the child do in the video. Examples of specific feedback include:

- Describing a specific strategy that the parent/caregiver used particularly well.

- Giving an example of a time during the routine when the parent/caregiver could have used a specific strategy, and suggest they use that strategy next time.

- State how often the parent/caregiver used the LAPE strategies, and interpret the meaning of this number. *For example, "You created two or three communication opportunities each minute—that's a really am improvement from the first time we watched your routine together!"*

- Describe the child's communication in response to the parent's behavior. *For example, "After you waited for about fifteen seconds, he ended up pointing to the cracker!"*

Provide at least one piece of ***positive feedback*** based on one of the parent's strengths, and at least one ***constructive suggestion*** for the future based on areas for improvement. Take into account the parent's own reflections and build on those. *For example, if a parent says, "I only did the choices strategy," you might say, "You did a great job of providing choices between two toys! Next time, you could also hold a favorite toy just out of reach as another way of encouraging him to ask for it."*

PROVIDER MANUAL: ADDITIONAL RESOURCES

Caregiver-Child Interaction Worksheet

Child's Name: _____ Caregiver's Name: _____

Date: _____ Description of Routine/Routines: _____

Location: _____ Length of Interaction sample: _____

Child Observation: While watching the interaction complete the table below by recording all words/ utterances and non-symbolic communicative behaviors* (NsCBs) made by the child. Also indicate the purpose of the communication act** (behavior regulation, joint attention, or social interaction).

Child's word/utterance or non-symbolic communicative behavior (NsCB). Put NsCB descriptions in parentheses.	✔ Type of Communicative Behavior		✔ Type of Communication Act		
	Spoken or signed utterance OR spoken/signed utterance+NsCB	NsCB only	BR	JA	SI
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					

26.					
27.					
28.					
29.					
30.					

Analysis:

Total # of spoken/signed utterances and spoken/signed utterances+NsCB =

_____

Total # of NsCBs only _____

Rate of Communication _____ = _____ # of spoken/signed utterances and spoken/signed utterances+NsCB and total # of NsCBs / _____ minutes in the sample

Total # BR = _____

Total # SI = _____

Total #JA= _____

Additional Comments:

Definitions

* **Non-symbolic Communicative Behaviors (NsCB).** When a child communicates with the adult in a non-symbolic fashion, usually gesturing (i.e., without words or signs, such as "giving" a toy or "protesting" by pushing away, making a funny face to make someone laugh). The communication must be **_intentional_** and **_purposeful_** (i.e. it must be clear the child is trying to communicate directly to another person.). Usually if there is purposeful communication there is eye contact (may be brief) with the communication partner. Credit is not typically given if the child is just following a direction (e.g. giving something when asked to give it or taking something that is handed to him) unless the child adds something very communicative to it (e.g. looking right at the person and laughing as they give the object). A good question to ask yourself is, "what is the child trying to communicate?" If you can't answer the question then it's not a communicative behavior.

** **Communication Acts**

- Joint attention (JA) – includes the following child behaviors: showing, commenting, requesting information, answering questions.
- Behavior regulation (BR) – includes the following child behaviors: protesting, requesting objects or actions
- Social interaction (SI)- includes the following child behaviors: attention seeking, showing off, participation in social games, greetings, conventions (such as "thank you" and "please")

Caregiver Observation: Complete the table below rating the frequency of use of the following caregiver strategies.

Questions about Caregiver's Skills	Specific Questions about the Interaction Did the caregiver…?	How Often? n/a = the child doesn't do the behavior that would encourage the parent to do it 0 = Never 1 = Rarely 2 = Occasionally 3 = Consistently 4 = Always	Examples/ Comments
How responsive is the caregiver?	**Respond verbally** to the child's verbal and nonverbal communication attempts? (e.g., saying "thank you" when the child handed her something)		
	Respond **nonverbally** to the child's verbal and nonverbal communication attempts? (e.g., handed the child something they asked for)		
	Match their communication turns to the child? (i.e., was most of the caregiver's communication in response to something the child did or said?)		
How engaged is the caregiver?	Appear to be **interested** in the child and what they were doing?		
	Appear to be **encouraging** their child to participate in the activity?		
Can the caregiver create opportunities for the child to communicate?	Put items desired by the **child in-view but out-of-reach** so the child had to ask for them? Or create opportunities for the child to **request assistance**?		
	Give the child **pieces** of desired items (e.g., small pieces of food, one puzzle piece) **one at a time** to encourage the child to request more often?		
	Give the child **choices between 2 or more objects** to encourage the child to verbally request?		
	Did the caregiver create opportunities for the child to talk in any other way? (e.g., doing something silly)		
Did the caregiver use strategies known to encourage communication growth?	**Put words to the child's NsCBs** (verbal mapping)? (e.g., child points to a ball and the caregiver says "ball" or the child reaches to be picked up and the caregiver says "up")		
	Expand the child's utterances? Expansion is when the caregiver adds just 1-2 words to what the child <u>just</u> said (e.g., child says "go," parent responds "go outside")		
	Imitate the child's vocalizations, words, or actions?		
	Model a gesture, word/sign, and/or sentence with the expectation that the child will imitate them?		

Your Child's Communication Development: Current Skills and Next Steps

This report includes a summary of the information you shared with us through your responses to our questionnaire and your video as well as some information about communication skills that your child might learn next.

The First 500 words: Vocabulary Stages

Based on all the information gathered, your child appears to be in stage ___ on the "Vocabulary Development: the First 500 Words" handout.

Rate:

During the ___ minute routine video you gave to us, your child communicated ___ times. This means that your child's rate of communication in this routine is ___ times per minute.

- ☐ This is a great rate! There is no need to increase your child's communication rate at this time.
- ☐ Your child would benefit from increasing his/her rate during this routine to ___ times per minute.

Reasons for Communicating:

During the routine you video recorded, your child communicated for the following reasons: ☐ to protest ☐ to request an object or action ☐ to greet another person ☐ to celebrate an accomplishment ☐ to comment on something they saw or heard ☐ Other: _____

- ☐ Your child communicated for a variety of reasons during this sample!
- ☐ Your child would benefit from learning how to communicate for different reasons, including:

  _____

Gestures:

Your child uses ___ of 12 early gestures on the Teddy Bear Questionnaire.

☐ Your child uses a variety of gestures and is ready to start or continue learning new vocabulary words (see below).

☐ Your child would benefit from learning new gestures. New gestures you could teach your child include:

_____

Speech Sounds:

According to the speech sound checklist you completed, your child makes ___ different consonant sounds when playing with sounds (such as babbling) or when producing words.

☐ Your child makes enough sounds to start forming words, no need to focus on sound development at this time.

☐ Your child would benefit from learning a few more sounds, including: _____.

Words:

Your child understands ___ of 396 words on the Teddy Bear Questionnaire.

Your child says ___ words and signs ___ words (including words listed on both questionnaires).

Your child uses the following kinds of words: ☐ labels for objects, people, places   ☐ action words   ☐ descriptive words   ☐ pronouns (mine, he) ☐ prepositions (in, on)   ☐ quantifiers (all done, more)   ☐ routines (thank you, please)

☐ Your child isn't quite ready for words yet, let's focus on other goals and revisit words when your child communicates at least 5 times per minute and has 5-7 gestures he/she uses consistently.

☐ Based on your child's current vocabulary, he/she could learn _____ new words in the next three months (by _____), including:
   ☐ ____ new labels for objects, people, places, such as:_____
   ☐ ____ new action words, such as:_____
   ☐ ____ new descriptive words, such as:_____
   ☐ ____ new pronouns. Such as:_____
   ☐ ____ other, such as:_____

Sentences:

Your child ☐ has ☐ has not started combining words into short sentences. The longest   sentence you reported your child saying was _____ words long.

- ☐ Your child isn't quite ready to combine words into sentences, let's focus on other goals and revisit sentences when your child has approximately 75 words they say consistently.
- ☐ Your child is ready to start consistently saying:
    - o ____ 2-word sentences
    - o ____ 3-word sentences
    - o ____ 4-word sentences

Use of Communication Enhancing Strategies:

During the _____ routine video you provided, I recorded that you used the following strategies to encourage new communication skills. Don't worry if you didn't use many of these strategies—these are the strategies we will be learning together in upcoming sessions.

- ☐ You responded to your child when he/she communicated with you. This will encourage your child to communicate with you more often.

- ☐ You were interested and engaged in the activity. This will help your child also be interested and engaged.

- ☐ You encouraged your child to communicate with you by:
    - ☐ putting desired objects out of reach
    - ☐ stopping an activity and waiting for your child to request it again
    - ☐ giving just a little of something that your child wants (such as food) so that they might ask for more
    - ☐ giving your child choices between objects or activities
    - ☐ encouraging your child to comment because you did something silly or unexpected

- ☐ You imitated your child's words and actions. This shows your child that you "heard them" and are interested in what they are communicating to you.

- ☐ When your child communicated, you repeated what your child said/did and added a new component (we call this the +1 strategy).

For example, when your child said _____, you said
_____. This teaches your child new communication skills.

☐ When interacting with your child, you talked about what you or your child were doing in short, easily-understood sentences.

☐ Other:

Additional Comments:

EXPERIMENTAL GROUP POST-QUESTIONNAIRE

LAPE EI Provider Post-Questionnaire

Thank you for filling out the following questionnaire! Your insights and thoughtful answers will help us ensure that the LAPE program provides a meaningful learning experience for Early Interventionists.

Part 1. Please answer the questions in the following table.

Since joining the LAPE program last September, I completed the following LAPE Practice Activities: (check all that apply)
☐ **Activity 1: Assessing Communication.** I had a family complete a CDI and choose a daily routine to record for a parent/caregiver-child communication sample, then calculated the child's rate of communication and the parent/caregiver's use of strategies.
☐ **Activity 2: Discussing Assessment Results**. I interpreted the results of the child's assessment and filled out an assessment report, then shared this information with the family and discussed potential communication goals.
☐ **Activity 3: Creating Communication Opportunities.** I taught a parent/caregiver how to create new communication opportunities during daily routines, watched a previously recorded routine with him/her, and then made a written plan with the parent/caregiver to create more opportunities.
☐ **Activity 4: Waiting and +1 Strategies**. I taught a parent the waiting and +1 strategies and then practiced these strategies alongside the parent.
☐ **Activity 5: Reflection and Feedback**. I watched a parent/caregiver use strategies in a routine, helped the parent/caregiver reflect on their use of those strategies, and then provided specific feedback.

Part 2. Please complete the following table to the best of your ability/memory by filling in, checking, or circling the most appropriate answer.

During this session of LAPE (September, 2017-February, 2018):
I attended _____ **LAPE parent/caregiver group sessions.** (fill in the number you attended)
I attended _____ **LAPE individual coaching sessions.** (fill in the number you attended)
□ I read through the documents provided in a blue folder at the LAPE training workshop (September 22nd, 2017), including LAPE handouts and worksheets and Practice Activity descriptions.
□ I had one or more **email or phone conversations** with Kelsey Decker to help me complete the LAPE Practice Activities and/or better understand the LAPE principles and strategies (for example, I called Kelsey to talk through the process of completing an activity, or emailed Kelsey to clarify the meaning of a specific communication term). **If checked:** I had _____ conversation/s with Kelsey Decker (fill in the appropriate number), and these conversations included (circle the kind/s of conversations): **email   phone**
□ I had one or more **in-person, email, or phone conversations** with Heather Moore to help me complete the LAPE Practice Activities and/or better understand the LAPE principles and strategies. **If checked:** I had _____ **conversation/s** with Heather Moore (fill in the appropriate number), and these conversations were (circle):   **in-person   email   phone**
□ I joined an LAPE toddler playgroup to model communication-enhancing strategies for an LAPE teacher (first-year graduate student).
□ I did something else **beyond the LAPE program requirements** that helped me complete the LAPE Practice Activities or better understand communication development in young children, assessing communication, strategies for encouraging communication, and/ or coaching parents/caregivers. **If checked, please briefly describe:**

On a scale of 1-5 (1=I did not participate at all; 5=I participated a lot), rate your **overall level of participation** in this session of LAPE (September 2017-February 2018).

1	2	3	4

5

Did not participate

Participated a lot

Part 3. In the following table, please:

- In question 1, check all of the activities you have done <u>since the last time you filled out this survey, in September 2017.</u>
- For every activity you check, answer question 2.
- Answer question 3 for EVERY ACTIVITY (even if you didn't check it in question 1).

1. Since the last time I filled out this survey (in September, 2017), I have…	*2. For every activity checked in column 1:* Since the last time I filled this out, I've done this activity… *(pick one)*	*3. FOR EVERY ACTIVITY: If I did this right now…* Rate on a scale from 1-10 1 = I would really struggle. 10 = I would do it perfectly.
☐ assessed a young child's (aged 0-5) expressive and receptive vocabulary development by collecting and interpreting information reported by the child's parents.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ used information I collected and interpreted about a child's vocabulary to discuss stages of language development with the child's family.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ wrote goals with parents/caregivers that specifically targeted moving a child from one stage of vocabulary development to the next.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ helped a parent/ caregiver choose a daily routine or activity for practicing communication-enhancing strategies.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____

1. Since the last time I filled out this survey (in September, 2017), I have…	2. For every activity checked in column 1: Since the last time I filled this out, I've done this activity… (pick one)	3. FOR EVERY ACTIVITY: If I did this right now… Rate on a scale from 1-10 1 = I would really struggle. 10 = I would do it perfectly.
☐ observed a parent/caregiver-child interaction during a daily routine and taken data on the child's language skills.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ observed a parent/caregiver-child interaction during a daily routine and taken data on the parent/ caregiver's use of communication-enhancing strategies.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ taught a parent/caregiver a new strategy that would enhance their child's communication skills?	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ helped a parent/ caregiver write a plan for regularly practicing a communication-enhancing strategy at home during a daily routine?	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ practiced a communication-enhancing strategy alongside a parent/caregiver and a child in order to model it for the parent?	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ watched a parent/caregiver-child interaction during a daily routine and then asked the parent/caregiver to reflect on their use of communication-enhancing strategies.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____

1. Since the last time I filled out this survey (in September, 2017), I have…	2. For every activity checked in column 1: Since the last time I filled this out, I've done this activity… (pick one)	3. FOR EVERY ACTIVITY: If I did this right now… Rate on a scale from 1-10 1 = I would really struggle. 10 = I would do it perfectly.
☐ video recorded a parent/caregiver interacting with their child during a daily routine and then watched it together with the parent while discussing the parent/caregiver's use of communication-enhancing strategies.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____
☐ watched a parent/caregiver interact with a child and then provided him/her with feedback about how to adapt their behavior in order to improve their child's communication skills.	☐ Once ☐ 2-3 times ☐ 4-10 times ☐ 11-24 times ☐ 25+ times	Rating: _____

Part 4. For each statement, please circle the number that corresponds with your experience as an Early Interventionist.

Parents or primary caregivers are the best direct providers of communication intervention for young children.

     1   2   3   4   5   6   7   8   9   10

strongly disagree   strongly agree

All Early Interventionists, regardless of discipline, are responsible for coaching parents and caregivers to use evidence-based communication interventions with young children.

     1   2   3   4   5   6   7   8   9   10

strongly disagree   strongly agree

It is important for all Early Interventionists to have a strong knowledge base in language development and evidence-based communication interventions for young children.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

strongly disagree   strongly agree

Young children learn new language skills best when intervention is provided during daily routines at home, childcare, or in the community.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

strongly disagree   strongly agree

Part 5. Please answer the following questions to the best of your ability. If you don't know an answer, feel free to write "I don't know" but don't leave any answers blank.

You've just started working with the family of 20-month-old Isaiah. During your first home visit, you notice Isaiah saying "ba da ba da" to himself while he builds blocks. He uses the same sounds later when he is eating a snack. Isaiah's mother, Erica, tells you that he uses those sounds frequently, but she is not sure what they mean, or if she should consider them his "first words."

a) You decide that it would be helpful for Erica to understand the difference between the three following terms. Define each term in a way that is easy for Erica to understand.

Speech:

_____

Language:

_____

Communication:

_____

b) Erica asks you whether Isaiah is using speech or language when he says "ba da ba da." What is your answer? (Choose one)

                                            Speech   Language

During your home visit, you also observe that Isaiah uses gestures to communicate. For example, he reaches for his sippy cup to ask for more juice, and pushes away an undesired toy that Erica tries to share with him. You explain to Erica that Isaiah is currently communicating in order to get his immediate needs met (sometimes called behavior regulation), and that as he continues to learn, he will begin communicating for other purposes. What are two additional purposes (in addition to behavior regulation) that you can share with Erica?

a)

_____

b)

_____

At the end of your visit, Erica shares one of her biggest concerns about Isaiah's communication: "He's still not saying real words, so it's like he's not getting any better." You explain to Erica that, because he is just beginning to communicate, Isaiah's _____ is the most important thing to focus on right now. (Choose one)

Modes of communication   or   Rate of communication
(whether Isaiah uses gestures or words)   (how frequently Isaiah communicates)

Why did you pick that answer?

_____

You also explain to Erica that Isaiah likely has additional ways of communicating, but that these modes of communication might be hard to pick up on at first, because they aren't as obvious as other later developing modes, like words and gestures. You tell Erica to be "on the look-out" for Isaiah using additional modes of communication, such as facial expressions. What is **one other mode of communication** you can tell her to look out for, in addition to words, gestures, and facial expressions?

_____

You are working with the family of Alana, a 29-month-old with a social-communication delay. You observe that Alana's parents often "jump in" instead of waiting for her to communicate first. For example, when Alana walks up to the door to go inside, her father Adam immediately opens the door, instead of waiting for her to ask for help. You tell Alana's parents that it is better for her to initiate communication rather than always responding to the actions of others. What is one reason why initiating helps children learn new language skills?

_____

_____

You decide to share some strategies with Alana's parents that adults can use to encourage their children to initiate communication rather than always responding. Please list three of the strategies that you could suggest that would encourage Alana to initiate communication with her parents:

1) _____

2) _____

3) _____

Adam works part-time and stays home with Alana two days a week. During your home visits, you have observed that Alana is an energetic toddler who enjoys playing outside and dancing with her stuffed animals, and that Adam often has a long to-do list of household chores to take care of throughout his days at home. After learning about communication-enhancing strategies, Alana's parents decide that they want to incorporate some of these strategies into a new daily routine.

a) You suggest that Alana's parents choose a routine that is predictable, so that Alana feels comfortable during the routine. What is one other **feature of a good routine,** in addition to being predictable? _____

b) Based on what you know about Alana's family, what are two specific routines you could suggest for them to use communication-enhancing strategies during?

1.

_____

2. _____

c) You suggest that Alana's parents turn off the television before their routine, so that Alana is focused on the routine. What is one other way to **prepare for a successful routine,** in addition to removing distractions?
_____

At your next home visit with Alana's family, you video-record Adam and Alana during the family's chosen routine, and then watch the video together. What is one question you can ask Adam to help him reflect on his use of communication-enhancing strategies?
_____

Rebecca is an Early Interventionist who is coaching Ana to encourage her son Mateo's communication skills. Ana tells Rebecca, "I'm not sure if this will work very well. I just don't think I'll be very good at the strategies." What is one thing Rebecca can say to help increase Ana's confidence in parent-implemented communication intervention?
_____

While on a home visit, Rebecca observes Ana and Mateo communicating with each other while they play with Legos, and provides the following feedback: "That was great! You're so good with Mateo."

a) Do you think that Rebecca's feedback for Ana is good feedback? (Choose one)

           Yes   No

b) If you chose "no," please provide an **example** of what Rebecca could say instead to provide better feedback to Ana:
_____

During her next home visit, Rebecca observes Ana and Mateo during snack-time. When Mateo says, "more," Ana repeats "more" and then hands Mateo another goldfish. Later, Rebecca observes Ana and Mateo playing outside. When Mateo says, "swing," Ana repeats "swing" and lifts Mateo into the swing. When reflecting with Ana at the end of her visit, what could Rebecca suggest that Ana do in these instances that would **teach Mateo new language skills**?

_____

KNOWLEDGE TEST SCORING SYSTEM

Item	Description	Response	Score
1	Definition of "speech"	**Completely correct**—contains both of the following components: - Sounds - Made by the speech mechanism *Examples:* - "Any sounds made by the voice, lips, teeth, etc." - "Sounds and/or a combination of sounds that come from the mouth." - "Making sounds using our vocal folds, mouth, etc." **Partially correct:** contains 1 of the 2 above components **Incorrect**: contains neither of the 2 above components **No response**	Completely correct: 1 Partially correct: .5 Incorrect: 0 No response: 0
2	Definition of "language"	**Completely correct** – contains both of the following components: - Intentional communication - Symbolic communication *Examples:* - "The words, gestures or other symbols we use to express ourselves to others." - "A system of arbitrary signs that is a framework for sharing information." - "Set of words, grammar rules, and other meaningful behaviors that convey meaning in a structured way. We share these elements with others in our community." **Partially correct:** contains 1 of the 2 above components **Incorrect:** contains neither of the 2 above components **No response**	Completely correct: 1 Partially correct: .5 Incorrect: 0 No response: 0
3	Definition of "communication"	**Completely correct** – contains both of the following components: - An exchange between two people - Can be intentional **or** unintentional *Examples:*	Completely correct: 1 Partially correct: .5 Incorrect: 0

		- "Any meaningful form of communicating, including facial expressions, eye gaze, gestures, etc. that your child may do purposefully or not." **Partially correct:** contains 1 of the 2 above components **Incorrect:** contains neither of the 2 above components **No response**	No response: 0
4	Discriminating between speech and language based on case study example	**Correct:** Speech **Incorrect:** Language **No response**	Correct: 1 Incorrect: 0 No response: 0
5	Listing 2 communicative functions (beyond behavior regulation)	**Completely correct –** contains both of the following communicative functions: - Social interaction and/or an example of social interaction - Joint attention and/or an example of joint attention *Examples:* - Social interaction: "social interaction," "social routines," "seeking attention," "getting attention from people," "playing games with other people," "taking part in social interactions like waving" - Joint attention: "joint attention," "commenting on something they see," "commenting," "showing somebody something interesting," "asking for somebody to share or explain something," "requesting information" **Partially correct:** contains one complete explanation of a communicative function or two partial explanations **Incorrect:** contains no communicative functions **No response**	Score each function separately—Completely correct: 2 Partially correct: 1 Incorrect: 0 No response: 0 Total score—Completely correct: 4 Partially correct: 1-3 Incorrect: 0 No response: 0

6	Determining whether rate or method of communication is more important in emerging communicators	**Correct:** Rate of communication **Incorrect:** Method of communication **No response**	Correct: 2 Incorrect: 0 No response: 0
7	Determining **why** rate is more important than method in emerging communicators	**Correct:** contains the concept that frequency of communication gives a child more opportunities to learn and/or practice new communication skills. *Examples:* - "It's important for him to communicate however works, words or gestures, because that gives mom a chance to reinforce his communication." **Incorrect:** Does not contain the above concept **No response**	Correct: 2 Incorrect: 0 No response: 0
8	Listing 1 form of communication (beyond words, gestures, and facial expressions)	**Correct:** contains one form/mode of communication beyond words, gestures, and facial expression *Examples:* eye gaze, eye contact, body posture, vocalizations, sounds, sound effects **Incorrect:** does not contain an appropriate form of communication **No response**	Correct: 1 Incorrect: 0 No response: 0
9	Demonstrating understanding of why child-initiated communication is best	**Correct:** contains one of the following components: - Child is voluntarily communicating - Child is attentive/interested in the topic of communication *Examples:* - "She is considering her needs and choosing to communicate." - "She's encouraged to be more engaged in the routine and the conversation."	Correct: 1 Incorrect: 0 No response: 0

		- "It means you're focused on something she is interested in so she's more likely to be motivated to request, comment, etc."	
10	Listing 3 communication-enhancing strategies	**Completely correct:** contains three of the following environmental arrangement strategies: - Giving choices (*variation examples:* offer two different options) - In view but out of reach - Assistance - Piece by piece (*variation example:* offer small portions, small pieces, pieces one by one, etc.) - Do something silly (*variation examples:* do something unexpected) - Add something new or wrong (*variation examples:* make "mistakes," "sabotage") - Waiting **Partially correct:** contains two or one of the above strategies **Incorrect:** contains none of the above strategies **No response**	Score each strategy separately— Completely correct: 2 Partially correct: 1 Incorrect: 0 No response: 0 Total score— Completely correct: 6 Partially correct: 1-5 Incorrect: 0 No response: 0
11	Demonstrating understanding of how to choose appropriate routines	**Correct:** contains two of the following components: - Frequent - Flexible - Enjoyable - Making it motivating - Avoiding interruptions - Considering the child's mood and/or needs *Examples:* - "Routines that happen often" - "Something that you can do in different places or any time of day" - "One that's easy for the parent to do everyday" - "Something they already do on a regular basis" **Partially correct:** contains one of the above components	Correct: 2 Partially correct: 1 Incorrect: 0 No response: 0

		Incorrect: does not contain one of the above components **No response**	
12	Applying case example knowledge to choosing two appropriate routines	**Completely correct:** contains two routines **specific to the details** presented in the case example; for example: - Folding laundry together - Playing on the swing set outside - Dancing with stuffed animals **Partially correct:** contains one routine specific to the details of the case study **Incorrect:** does not contain strategy relevant to the details presented in case example **No response**	Completely correct: 2 Partially correct: 1 Incorrect: 0 No response: 0
13	Demonstrating understanding of guided reflection questions	**Correct:** contains one of the two following reflection questions: - What went well? (*variants:* What did you do well? What did you do that helped your child communicate? What were you proud of? What strategies did you see yourself use? etc.) - What would you like to do differently next time? (*variants:* What would you have done differently? What did you feel uncomfortable about? etc.) **Incorrect:** does not contain a variant of either of the above reflection questions **No response**	Correct: 1 Incorrect: 0 No response: 0
14	Demonstrating understanding of the rationale for caregiver-implemented NCI	**Correct:** contains the following component: - An appropriate reason for why caregiver-implemented NCI is ideal, e.g., parents know their children best; parents spend more time with their children than anyone else - AND/OR: An appropriate response to a parent/caregiver's lack of confidence *Examples:* - "Mom knows what kinds of strategies her son will respond to." - "She's probably with her son for more hours during the day than	Correct: 1 Incorrect: 0 No response: 0

		anyone else, so she can do lots of routines with him." - "Parents are the best people to use these strategies because they naturally know what works for their child." - "It is hard at first, and it was hard for me too, but it gets easier as you keep trying. Let's work on it together." **Incorrect:** does not contain an appropriate reason for why parent-implemented NCI is best **No response**	
15	Determining quality parent feedback based on case example	**Correct**: No **Incorrect**: Yes **No response**	Correct: 1 Incorrect: 0 No response: 0
16	Demonstrating knowledge of appropriate parent feedback based on case example	**Correct:** contains the term "specific feedback" and/or an example of specific, data/observation-based feedback *Examples:* - "That was great! I liked how you [insert SPECIFIC feedback here]…" - "Wow! You did such a great job of waiting for him to respond." - "I saw you use the giving choices strategy five times!" - "When you put the Legos on your head to be silly, he always pointed." **Incorrect:** does not contain an example of specific feedback **No response**	Correct: 1 Incorrect: 0 No response: 0
17	Demonstrating understanding of Responding to Teach Something New based on case	**Correct:** contains both of the following components: - Repeating what the child said - Adding one new thing / expanding what the child said (e.g., saying "want more" or "more please") *Examples:* - "Add word to repetition (e.g., "More goldfish" or "I swing")	Completely correct: 3 Partially correct: 1.5 Incorrect: 0 No response: 0

	study example	- "Build on his language. Add one more word to his utterance. When he says 'more' you can respond with 'more goldfish.'" - "Respond with a slightly longer (2-word) response, e.g., 'more goldfish!'" **Partially correct:** contains one of the above components **Incorrect:** does not contain either of the above components **No response**	

SOCIAL VALIDITY SURVEY

LAPE Post-Questionnaire 2

Thank you for filling out this questionnaire as completely and honestly as possible. Do not put your name or provide any identifying information on this questionnaire. When you have completed this questionnaire, please put it in the envelope marked "Final Confidential Questionnaires."

Part 1. Please check one:

☐ At the beginning of this LAPE session (in September, 2017), I <u>agreed to be</u> a research participant.
☐ At the beginning of this LAPE session (in September, 2017), I <u>chose not to be</u> a research participant.

For Part 2 and Part 3, use the following rating scale:

> 0: I strongly disagree with the statement.
> 1: I disagree with the statement.
> 2: I somewhat disagree with the statement.
> 3: I do not agree or disagree with the statement.
> 4: I somewhat agree with the statement.
> 5: I agree with the statement.
> 6: I strongly agree with the statement.

Part 2. For each statement below, circle the number that corresponds with your experiences during this session of LAPE (September, 2017-February, 2018), ***using the rating scale above.***

Statement	Rating
1. The information provided during the 4- hour LAPE pre-training session was easy to understand and helped to prepare me for the LAPE practice activities I completed with families on my caseload.	0 1 2 3 4 5 6
2. It was easy to complete the LAPE practice activities with non-LAPE families on my caseload.	0 1 2 3 4 5 6
3. Attending LAPE parent groups and individual sessions made me a better parent/caregiver educator and coach.	0 1 2 3 4 5 6

Activity	Statement	Rating
4. I would recommend the LAPE program to other Early Interventionists who want to improve the effectiveness of their services for children with communication delays.		0 1 2 3 4 5 6
5. The parents/caregivers on my caseload who attended this session of LAPE improved their ability to help their children communicate better.		0 1 2 3 4 5 6
6. I hope to continue referring families on my caseload to the LAPE program.		0 1 2 3 4 5 6

Part 3. The five LAPE practice activities are listed below. Check each activity you completed during this session of LAPE (September, 2017-February, 2018). **For each activity you completed,** *answer both statements about the activity* **using the rating scale above.**

Activity	Statement	Rating
☐ *Activity 1: Assessing Communication* • Help a family complete a CDI and choose a daily routine to record for a communication sample. • Calculate the child's rate of communication and the parent/caregiver's use of strategies.	Completing this activity provided me with skills that will make me a better parent/caregiver educator and coach.	0 1 2 3 4 5 6
	I will continue to use the skills I learned while completing this activity with the families on my caseload.	0 1 2 3 4 5 6
☐ *Activity 2: Discussing Assessment Results* • Interpret the results of the child's assessment and fill in the "Your Child's Communication" report.	Completing this activity provided me with skills that will make me a better parent/caregiver educator and coach.	0 1 2 3 4 5 6

• Share the assessment report with the child's family, and discuss potential communication goals based on the child's current skills.	I will continue to use the skills I learned while completing this activity with the families on my caseload.	0 1 2 3 4 5 6
Activity 3: Creating Communication Opportunities • Teach a family how to create communication opportunities using the LAPE opportunities handout. • Observe a parent/caregiver-child interaction, then discuss the parent/ caregiver's use of communication opportunities. • Help the family create a written plan for continuing to provide communication opportunities.	Completing this activity provided me with skills that will make me a better parent/caregiver educator and coach.	0 1 2 3 4 5 6
	I will continue to use the skills I learned while completing this activity with the families on my caseload.	0 1 2 3 4 5 6
Activity 4: Waiting and +1 Strategies • Teach a family about waiting for child-initiated communication and responding to child communication to teach new language skills using LAPE handouts. • Help the parent/caregiver learn these new skills by practicing alongside them during a daily routine with their child.	Completing this activity provided me with skills that will make me a better parent/caregiver educator and coach.	0 1 2 3 4 5 6
	I will continue to use the skills I learned while completing this activity with the families on my caseload.	0 1 2 3 4 5 6

☐ *Activity 5: Reflection and Feedback* • Have a family video-record the daily routine they've been practicing with their child, and watch it together. • Help the parent/caregiver reflect by asking "What went well?" and "What would you like to think about for next time?" • After the parent/caregiver reflects, provide them with specific feedback.	Completing this activity provided me with skills that will make me a better parent/caregiver educator and coach.	0 1 2 3 4 5 6
	I will continue to use the skills I learned while completing this activity with the families on my caseload.	0 1 2 3 4 5 6

Part 4.

Name three things that you enjoyed about the LAPE program:
1.
2.
3.
Name three things that you would change about the LAPE program:
1.

2.
3.
Name the top three skills or strategies you learned in the LAPE program that you plan to continue using in your daily practice:
1.
2.
3.

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