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EARLY INTERVENTION: NATURAL ENVIRONMENT PRACTICES THROUGH COACHING

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Executive Summary

This study examines natural environment practices through a coaching service delivery method. The focal organization, REACH Therapy, is an Early Intervention provider in southeast Pennsylvania. REACH leadership is passionate about natural environment practices, but the independent nature of Early Intervention service delivery makes it unclear exactly how the practices are implemented across the organization.

The research question addressed in this paper is: *How are natural environment practices implemented by coaches from the Pennsylvania-based Early Intervention provider REACH Therapy Services?* Two distinct bodies of research informed this work: natural environment practices and coaching. First, literature related to natural environment practices defines what Early Intervention sessions should entail. Then, the theory around coaching contextualizes how therapy services are delivered. Finally, the adult learning theory of andragogy explains why coaching works.

The data collection and analysis took place in three phases. Phase one included a survey completed digitally by REACH therapists. Individual interviews constituted phase two of the study and included one-on-one Zoom calls with members of the REACH team. Phase three focused on the review and analysis of core materials and resources used by REACH service providers.

Four core findings emerged from the data analysis:

1. REACH employees implement natural environment practices that include consideration for location, specialized instruction, and caregiver interaction in daily routines most of the time.



2. REACH employees have mostly positive perceptions of their ability to implement natural environment practices.
3. REACH employees have mostly negative perceptions of their coaching ability.
4. REACH employees report implementing behaviors consistent with the principles of andragogy, which underpins coaching practices.

The findings informed two key recommendations. Recommendation One calls for coaching professional development for all service providers. Professional development opportunities should develop coaching strategies and build the confidence of therapists. Recommendation Two suggests the use of the Natural Environments Rating Scale. Integration of the scale should be co-designed with the REACH team to ensure the purpose and value are clear.



Introduction

It is July of 2009, and it is 100 degrees. I am acutely aware of the exact temperature because I have been trapped in the house with a screaming four-day-old infant for hours, held hostage by the heat. I'm anxious. Typical new-mom anxious but also worried because an Early Intervention physical therapist is about to knock on my door. Our daughter was born with torticollis (involuntary contraction of the neck muscles), and the hospital recommended that I reach out to Early Intervention for help.

I open the door to a woman wearing dress pants and sneakers. She smiles a knowing smile and steps into our home. I welcome her and tell her to make herself comfortable; she plops down on the floor. We make small talk for a while, and then she takes the baby from my arms and lays her on the carpet. I sit on the couch and observe. I enjoy the moment of quiet as my infant silently investigates this new human in her space, but the moment doesn't last long. The therapist explains that she wants to use items from our home for the exercises to ensure we can continue the therapy every day. She sends me to grab blankets, balls, and noisy toys. I return with the pile, somewhat worried that I do not have precisely the right things. She contorts our baby's neck and explains where she is placing her hands and why. Then she moves aside and asks me to try. From this point on, she does not put her hands on the baby; I do it all. Instead, she slightly corrects my form, asks about our daily schedule, and makes suggestions about the best times to fit in the exercises.

The following day, as I am dressing our daughter for the day, I see the reminder note the therapist suggested I leave on the changing pad. I perform the exercises as we practiced and notice that our baby already has more control over her neck. That feels good; I feel empowered.



The home-based therapy I experienced (as I just described) when our daughter was young is standard practice in Early Intervention (EI), and it is more formally called “natural environment practice.” In 1986, Part C of the Individuals with Disabilities in Education Act (IDEA) established EI services. Each year, approximately 400,000 children receive services for physical or developmental delays through Early Intervention (ECTA, 2020). That is 400,000 nervous, uncertain families who turn to EI for support in creating safe, productive lives for their children.

This capstone project aims to explore natural environment practices implemented through a coaching service delivery model. Recognizing Excellence in All Children (REACH) Therapy Services serves as the focal organization. REACH is an EI provider located in southeast Pennsylvania.

Researchers consider naturalistic practices delivered through coaching as the best approach for EI services (Dunst, Trivette, Humphries, Raab, & Roper, 2001; Inbar-Furst, Douglas, & Meadan, 2019). The caregiver’s participation is vital to the success of intervention work (Fleming, Sawyer, & Campbell, 2011), which makes a therapist’s coaching skills a central focus for success. To better understand effective coaching practice, researchers turn to the andragogy approach to adult learning theory (Cox, 2001; Cox et al., 2015).

This project will explore perceptual data collected from coaches at REACH Therapy and determine the extent to which their practices align with best practices in the field.

Organizational Context: REACH Therapy

IDEA, established in 1975, sought to ensure that children with disabilities have access to a free and appropriate education (United States Department of Education, “About IDEA”). Part C of this act provides guidance and funding for states to operate comprehensive statewide Early Intervention program services for infants and toddlers with disabilities and their families. In Pennsylvania, children may receive assistance in one or more of the following areas: physical development, including vision and hearing; cognitive development; communication development; social or emotional development; and adaptive development (Pennsylvania’s Early Intervention Program, 2020).

Recognizing Excellence in All Children (REACH) Therapy Services is a Limited Liability Company supporting children and families in Lehigh and Northampton Counties through Pennsylvania’s EI program. At the time of this study, during the global coronavirus pandemic, REACH served 173 clients. During more typical times, REACH maintains a client roster closer to 200. Children are referred to REACH services for a wide range of needs (and often more than one need), such as developmental delays, feeding concerns, and apparent speech or cognitive behavior delays.

As an Early Intervention provider, REACH employs professional staff members in several specialist areas. Table 3.1 provides a list of specialty areas and a description from the REACH website (REACH, 2020). At the time of this study, REACH employs 17 professional staff members.



Table 3.1: Professional Staff Employed by REACH Therapy Services

Position	Description
Physical Therapist	State Licensed and Board Certified Speech Language Pathologists provide habilitation, rehabilitation, and prevention of communicative disorders, swallowing disorders, behavioral and oral motor feeding difficulties, and delays in the development of communication skills.
Occupational Therapist	State Licensed and Board Certified Occupational Therapists address the functional needs of children in the following areas: adaptive development, adaptive behavior, play, sensory, feeding, and fine motor development.
Speech Therapist	State Licensed and Board Certified Physical Therapists address the support of sensorimotor function of children. Our PTs specialize in how children move within their environment and what movements are necessary for the development of gross motor skills.
Specialized Instructor	Early Intervention Instructors are certified in early childhood education, special education, psychology, and/or related mental health fields. They work with children and families through activities that promote the acquisition of skills in areas of cognition, attention, language processes, social interaction, behavior, and play.

REACH employees are the focus stakeholders for this study. The inquiry will explore therapists' perceptions of natural environment practices through coaching and examine why coaching is an effective service delivery method. The organization's leadership hopes a greater understanding of employee perceptions will inform future work.

Problem of Practice: Natural Environment Practices Through Coaching

During initial conversations with REACH owner Valerie Singley, she shared, “I love Early Intervention because it is all about the real world. Using the real problems, real household items, and helping kids meet goals.” Her passion for this real-world, practical approach was made clear by the energy and enthusiasm she used to describe the work in action.

An early review of the literature defined the approach Singley described as natural environment practices. Federal and state laws require the use of the natural environment during EI services (United States Department of Education, “About IDEA”). Singley believes natural environment practices best serve the child and caregiver (the child’s parent or primary guardian), and she is not alone. Research indicates that natural environment practices are most effective in helping children progress toward their developmental goals (Fleming, Sawyer, & Campbell, 2011; Woods, Wilcox, Friedman, Murch, 2011; Brown & Woods, 2016). The continuously emerging research related to the effectiveness of participation-based therapy in the home and community is responsible for the change in federal and state requirements (Campbell & Sawyer, 2007). Therefore, implementing natural environment practices is vital for a child’s growth and compliance with the law.

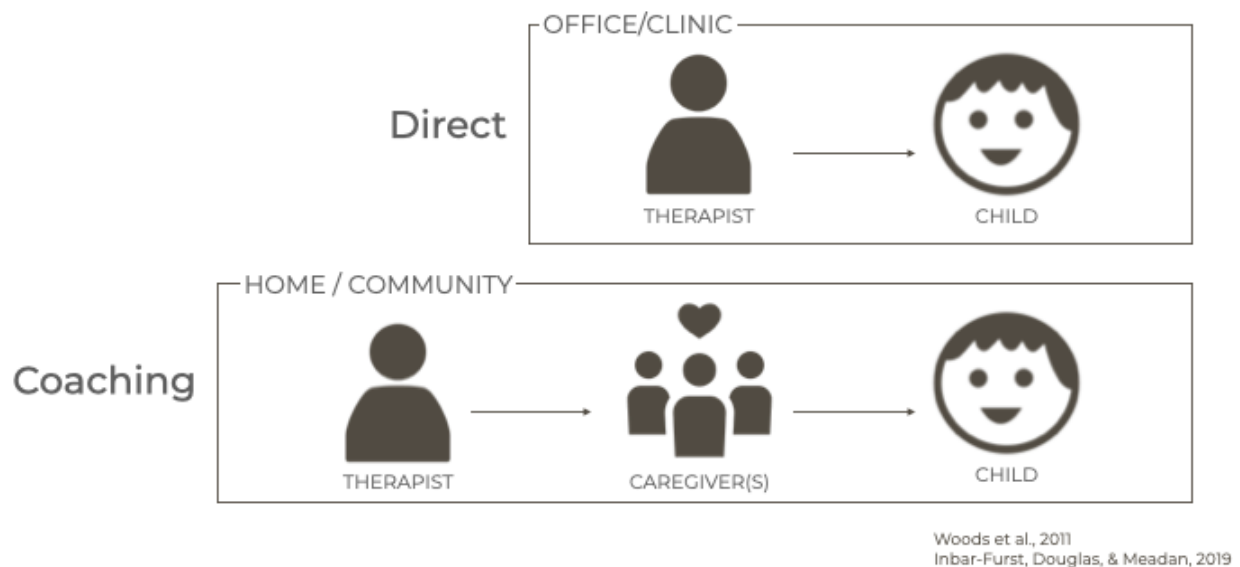
While Singley believes natural environment practices best serve the child and caregiver, she acknowledges that diverse beliefs about integrating the practices exist among practitioners on her team. During our early conversations, Singley explained that therapists work independently, and she relies on their written reports as a picture into their service delivery; formal evaluations do not include direct observation. She also shared that, during informal conversations, some team members express concerns about access to appropriate materials in the natural environment and caretaker resistance to participation in the session. The variance in beliefs and implementation



may be due, in part, to the incomplete definition of natural environment practices found in guiding laws and mandates (Dunst et al., 2001; Inbar-Furst et al., 2019).

In addition to the natural environment, therapeutic interventions require a service delivery method. In a clinical setting, an intervention typically takes on a direct therapy model—therapists work directly with a child with or without caretaker involvement (Woods et al., 2011). In EI services in natural environments, the caretaker has an active role in the therapy session. The service provider or therapist teaches the caregiver a skill or strategy as part of a natural routine. While some use a more direct approach, EI providers often use coaching as a service delivery method because coaching empowers the caregiver to implement best practices outside the therapy session (Inbar-Furst, Douglas, & Meadan, 2019).

Figure 4.1 Contrasting Service Delivery Methods



EI is not an education-based specialization. The therapists and specialized instructors who work for EI providers did not receive a degree specifically designed for this type of service; they have certifications as speech therapists, physical therapists, and occupational therapists and could serve in various fields or settings such as schools, adult care facilities, or hospitals. When

REACH brings on new employees, the new hire shadows other providers for a total of 6 hours. The new hire is also encouraged to shadow REACH providers outside of their specific field. The purpose of this shadowing is to model the service delivery method and the firm-specific procedures.

EI practitioners most often work independently with their clients, and there is limited evidence of exactly what occurs when a therapist works with a family. While Singley demonstrates a passion for natural environment practices and coaching, she lacks evidence regarding implementation fidelity and this is a problem of practice for her organization. In order for REACH to offer research-based best practices for the children and families they serve, leadership must first establish a clear understanding of current practice; this understanding will provide direction for future work. The area of inquiry for this project is *natural environment practices through coaching*. This study will gather perceptual data from REACH therapists and examine the extent to which their reported practices align with the identified best practice in the field of EI and adult learning.

Literature Review: Natural Environment Practices Through Coaching

REACH Therapy ascribes to natural environment practices through a coaching service delivery approach. This section will review relevant literature from two distinct bodies of research: natural environment practices and coaching. The purpose of this review is to determine best practices in the EI field and use that context to inform data collection and analysis. While peer-reviewed literature was the primary focus, some gray literature balances the research perspective with policy. This gray literature includes Pennsylvania’s Department of Education website, IDEA’s federal website, and web publications from professionals frequently referenced in the EI space.

Defining Natural Environment Practices

IDEA is a federal law that “makes available a free appropriate public education to eligible children with disabilities throughout the nation and ensures special education and related services to those children” (United States Department of Education, “About IDEA”). EI services are described under Part C of IDEA and require that “each early intervention service is provided in the natural environment for that child or service to the maximum extent appropriate” (United States Department of Education, “303.344 Content of an IFSP”). The act defines natural environments as “settings that are natural or typical for a same-aged infant or toddler without a disability” and further explains that the natural environment “may include the home or community settings” (United States Department of Education, Section 303.26 Natural Environments).

Moving from Theory to Practice: A Roadblock

Natural environment practices first appeared in the 1997 amendments to IDEA. Since then, there has been no official policy change regarding implementing the methods during EI services. In 2014, the Division for Early Childhood (DEC) of the Council for Exceptional Children (CEC) released a series of revised recommendations meant to guide the practice of EI and early childhood special education. While not its sole intent, this release from the DEC was the most substantial attempt to conceptualize practices in the natural environment to support effective and accurate instructional and behavioral intervention (Inbar-Furst et al., 2019). These recommendations, however, have not yet made it to policy (Commonwealth of Pennsylvania, Department of Human Services, “Early Intervention Laws and Regulations”) and remain absent from EI training and evaluation. Thus, a dichotomy exists between the research regarding best practice and the work of practitioners (Dunst et al., 2001; Inbar-Furst et al., 2019).

One of the most prominent departures between policy and practice is interpreting the term “natural environment.” While federal and state requirements define natural environments most frequently as place-based settings, researchers and practitioners agree that there is more to natural environment practice than just a location (Dunst, Trivette, Humphries, Raab, & Roper, 2001; Chai, Zhang, & Bisberg, 2006; Kingsley & Mailloux, 2013). In particular, authors have argued that, even in a natural setting, practitioners can provide services in an unnatural manner (Jung, 2003). For example, suppose a therapist played a sorting game with a child while the parent made dinner. In that case, the therapy is taking place in the home, and the therapist is implementing a direct service delivery model that does not include the caretaker. Researchers question the effectiveness of this approach and postulate that EI personnel need to be concerned with how an intervention occurs rather than just where (Shelden & Rush, 2001).

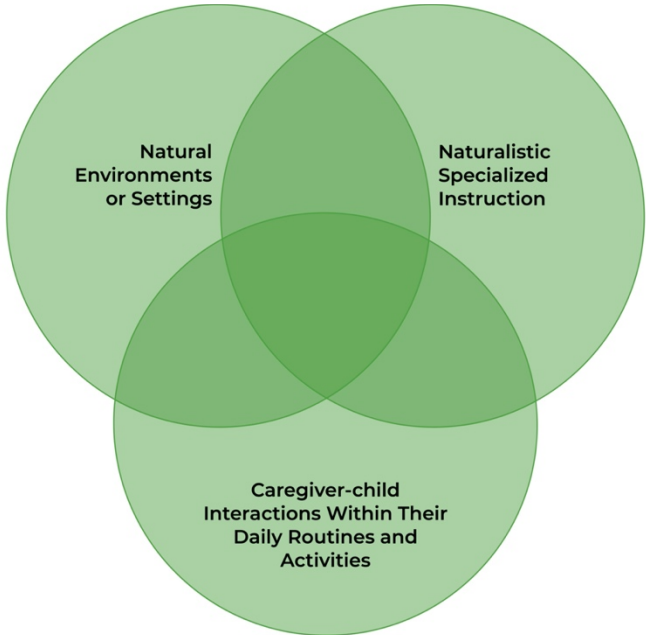


Actualizing Natural Environment Practices

Several researchers and organizations have endeavored to define natural environment practice as more than simply a location (Dunst et al., 2001; Campbell & Sawyer, 2007; American Speech-Language-Hearing Association, 2017). Based on their comprehensive literature review, Chai, Zhang, and Bisberg (2003) provide a framework for analyzing various theories and practices. The framework includes three components that further contextualize the term natural environment: natural environments or settings, naturalistic specialized instruction, and caregiver-child interactions within their daily routines and activities (Chai et al., 2003). This framework

was established by deconstructing previous proposals and organizing prevailing themes to create an inclusive framework of best practice. Evaluating plans and practices against this framework ensures that limits are placed on contrived intervention strategies and practitioners effectively deliver services in a natural environment (Chai et al., 2003). Ideal EI services occur at the intersection of the three categories.

Figure 5.1 Components of Natural Environment Practice



Chai et al., 2003

Natural Environments or Settings

As defined previously, natural environments promote a child’s inclusion in locations and events consistent with typical peers. Unlike segregated settings, inclusion allows for “(1) improved quality of care for all children, (2) increased numbers and a greater variety of learning opportunities, and (3) a readily available continuum of typical peer models” (Shelden & Rush,



2003, p. 3). Bricker's (2001) literature analysis yielded concerns about focusing exclusively on inclusive environments and warns that choosing a setting must be contingent upon the activities the location promotes. Therefore, focusing on inclusion alone is a misinterpretation of the IDEA mandate (Chai et al., 2003). The two remaining components define the ways in which the natural setting should be used.

Naturalistic Specialized Instruction

In addition to working with the child and caretaker, specialized instruction includes curriculum planning, providing information to families, and designing learning environments to meet a child's individual goals (Childress, 2004). As a component of specialized instruction, naturalistic interventions utilize the location to facilitate the learning opportunity (Brinker, 2001; Kingsley & Mailloux, 2013). For example, if a child has a goal related to following directions, a therapist may empty the dishwasher with the child and caretaker to rehearse goal-specific behaviors. Further, Cross, Salazar, Dopson-Campuzano, and Batchelder (2009) characterize specialized instruction as "embedded interventions as well as explicit strategies that are more directive and targeted." In the opening narrative, I explained how our therapist taught us specific stretches to loosen our daughter's neck muscles. While the stretches themselves did not emerge from our natural routine, the therapist taught us how to embed the work into our daily activities, such as diaper changing. The intervention is direct and targeted, but the context for the intervention was a natural part of our day. Dunst et al. (2001) reviewed research, practice, and policy literature and found that instructional opportunities emerge in three distinct domains: family activity, community activity, and early childhood program activity. In addition, specialized instruction includes a system of evaluation, which should also strive to be as naturalistic as possible (Childress, 2004). Evaluation emerges related to the task (Childress,



2004). In the example of the child emptying the dishwasher, the number of times they follow directions while completing the task could serve as a natural evaluation for that goal.

Caregiver-Child Interactions Within Their Daily Routines and Activities

Campbell and Sawyer (2004) classify natural environment practices as either contrived learning opportunities or natural learning opportunities. Researchers contrast natural environment practices with contrived practices, which involve “professionals interacting directly with children using activities and materials designed by the professional without the participation and involvement of caregivers” (Chai et al., 2003, p. 204). The service provider constructs contrived learning experiences. On the other hand, natural learning opportunities are likely to occur in the everyday lives of the caregiver and the child served. Opportunities afforded by daily activities “can operate to produce competence by their development-instigating features” (Dunst et al., 2001). EI programming is often referred to as participation-based services because it is dependent upon the participation of the child and the caregiver (Flemming et al., 2011). EI personnel should consistently embed a child’s goals and objectives into their regular routines and play (Bricker, 2001).

Coaching: A Service Delivery Method

Facilitating natural environment practices is highly dependent upon the service delivery method utilized by the provider. REACH Therapy ascribes to the coaching approach. Other prevailing approaches include Routines Based Intervention and Everyday Children’s Learning Opportunities (ECTA, 2014). A 2013 clinical report found that best practices for Early Intervention services consist of the natural environment and coaching methods (Adams, Tapia, & The Council on Children with Disabilities). This finding is further supported by a substantial

body of literature (Chai et al., 2003; Mahoney & MacDonald, 2007; Rush & Sheldon, 2011; Kemp & Turnbull, 2014; Meadan, Douglas, Kammes, & Schraml-Block, 2018).

A significant goal of EI is for child development to continue in the absence of the therapist (Mahoney & MacDonald, 2007). Therefore, caregivers must feel empowered and prepared to support their child (Rush & Sheldon, 2011). In their interdisciplinary research synthesis, Kemp and Turnbull (2014) describe coaching as an effective strategy because “coaching is aligned with the adult learning principles of acquisition, mastery, application of meaning to one’s own experience” (p. 306). Caregivers are a critical component of a child’s environment, and coaching actively engages the caregiver in the therapy by tapping into their everyday experiences (Chai et al., 2003).

Defining Coaching

Coaching is defined as:

an adult learning strategy in which the coach promotes the learner’s ability to reflect on his or her actions as a means to determine the effectiveness of an action or practice and develop a plan for refinement and use of the action in immediate and future situations (Rush & Sheldon, 2011, p. 8).

In EI, coaching implies that caregivers set goals, and the coach suggests ideas to help meet those goals while the family is engaged in a typical routine, such as feeding or bathing (Hadders-Algra, 2014). Plans may vary by session as families navigate their needs as caregivers and their child’s developmental needs (Graham, Rodger, & Ziviani, 2009). Coaching empowers caregivers to set goals and enact change to meet those goals (Graham, Boland, Ziviani, & Rodger, 2018). Authors present various formats for a successful coaching cycle, but the process consistently includes joint planning, observations, actions, reflection, and feedback (Adams et al., 2013).

Missing from the Research

Research that focuses on the perceptions and beliefs of therapists regarding coaching in the natural environment is also limited (Graham et al., 2018). In addition, several researchers highlight the absence of service provider input as a limitation of the literature (Kingsley & Mailloux, 2013; Kemp & Turnbull, 2014; Meadan et al., 2018; Graham et al., 2018).

Little is known about the actual manifestation of coaching practices in the natural environment (Meadan et al., 2018), even though several researchers specifically examine the effectiveness of coaching during EI services (Graham et al., 2009; Baldwin et al., 2013; Hadders-Algra, 2014; Chiarello, 2017). While these researchers posit that coaching engages families and leads to long-term positive effects for children, the endeavors fall short of explaining why coaching works. If coaching is, as research suggests, the most effective approach to supporting natural environment practices, then an understanding of how and why coaching works is essential for REACH. Cox (2015) explicitly ties coaching to the adult learning theory of andragogy. This work exists outside the area of EI. However, the expressed needs of adult learners outlined in the principles of andragogy apply to the adults participating in EI services (caregivers).

Conceptual Framework: Natural Environment Practices and Andragogy

Researchers consider natural environment practices delivered through coaching as a best practice in EI (Chai et al., 2003; Mahoney & MacDonald, 2007; Rush & Sheldon, 2011; Kemp & Turnbull, 2014; Meadan et al., 2018). While the research sought to contextualize natural environment practices specific to EI services, the EI literature is limited in the area of coaching. However, Cox, Bachkirova, and Clutterbuck (2018) argue that adult learning theory underpins all coaching practices. The authors (Cox et al., 2018) present three theories related to adult learning: andragogy (Knowles, 1978), experiential learning (Kolb, 1984), and transformative learning (Mesirow, 1990). While each of the theories supports the practice of coaching, the first two lack a concrete framework. Andragogy, on the other hand, presents six distinct characteristics of adult learners (Knowles, 1978; Knowles et al., 2015). These principles are discernable in coaching practice and serve as a framework for examining coaching behaviors (Cox, 2006). For this inquiry, the distinct principles offer a lens through which to explore coaching as an EI service delivery method.

Andragogy: Six Principles of Adult Learning Theory

Coaching in Early Intervention is most effective when it meets the needs of the caretakers as adult learners (Mahoney & MacDonald, 2007; Rush & Sheldon, 2011). Whitmore (2003) describes coaching as “unlocking a person’s potential to maximize their own performance. It is helping them to learn rather than teaching them” (p. 8). Knowles et al. (2015) define andragogy as the art and science of helping adults learn. Essentially, if coaching is the *how* of adult learning, andragogy is the *why*. Adult learners are autonomous individuals who have a responsibility for their learning (Gray, 2006). Designing experiences around the six principles of andragogy



increases an adult’s readiness to learn (Knowles et al., 2015). While the literature does not directly connect the adult learning theory to EI coaching, the following table synthesizes the current theory of each principle (Holton, Swanson, & Naquin, 2001; Gray, 2006; Knowles et al., 2015) and connects the principle to a general coaching practice (Cox 2015, 2018).

Table 6.1 Connecting Andragogy and Coaching

	Principle Description	Coaching Connection
Adults need to know	Adults need a clear understanding of <i>why</i> they need to know something before engaging in the learning experience.	Coaches allow the client to own the agenda, so the client knows the course of the learning.
Adults are self-directed	Adults benefit from having control over their learning. Their willingness to make choices and decisions connects to their self-concept—beliefs about their abilities and skills.	For coaches, it is essential to recognize that self-direction and self-concept continue to develop in adulthood and may require time and attention; coaches should facilitate rather than direct.
Adults have a wealth of prior experience	The past experiences of adult learners impact future learning experiences and can serve as catalysts or barriers to new learning.	The role of the coach is to challenge existing assumptions and ensure learners are open to new learning.
Adults learn when they have a need to learn	Adults become ready to learn when they experience a life situation that requires new learning.	The coach must situate the learning in the client’s life experience.
Adults are relevancy-oriented	Adults prefer learning to be immediately applicable and focused on problem-solving.	A coach should support their client as they work on short-term goals that may lead to long-term outcomes.
Adults are internally motivated	While external factors can be motivating, adults are most significantly motivated by internal factors such as solving a personal problem or achieving a personal goal.	Coaches can help clients identify needs and values that can reinforce the change in practice or behavior.



Project Design

Data Collection

Literature related to Early Intervention services indicates a gap between research-based best practices and policy (Inbar-Furst et al., 2019). Therefore, Singley's uncertainty regarding her team's implementation of natural environment practices is reasonable considering the inconsistent guidance in this area. To examine how coaches implement natural environment practices at REACH Therapy, the senior leadership and I decided to gather perceptual data from the therapists. Since this was the first time the organization formally explored the topic, we felt this was the least invasive approach. Optional, self-reported data collection allowed the therapists time to reflect and share, as they felt comfortable, without the fear of the impact on evaluation.

An existing tool, the Natural Environment Rating Scale (Campbell & Sawyer, 2004), was initially considered for data collection. To use the scale as a rating tool, the therapist must video record the intervention, or an evaluator must attend the session to observe. As a first step for the organization, this felt somewhat obtrusive for the therapist and the family.

Limitations posed by the COVID-19 pandemic significantly impacted the execution of therapy sessions. Therefore, we determined it was not an appropriate time to gather feedback from families regarding general practice.

Data collection emerged in three phases specifically designed to explore the research question: *How are natural environment practices implemented by coaches from the Pennsylvania-based Early Intervention provider REACH Therapy Services?*

Table 8.1 Three Phases of Data Collection

<p>How are natural environment practices implemented by coaches from the Pennsylvania-based Early Intervention provider REACH Therapy Services?</p>	<p>Phase 1: Survey Survey questions collect perceptual data from therapists and establish the extent to which natural environment practices are implemented during EI sessions with clients.</p> <p>The survey took place first to capture the perceptions of as many REACH employees as possible. The survey also served as a method for establishing individuals willing to interview.</p>
	<p>Phase 2: Interviews Interview questions collect perceptual data regarding therapists’ coaching practices as viewed through the six principles of andragogy.</p>
	<p>Phase 3: Resource Review Review of REACH resources to determine the extent to which materials provided by the organization align with or promote natural environment and coaching practices.</p>

The goal in Phases 1 and 2 is to examine participants’ perceptions through the conceptual framework. To do this, I created a matrix combining the principles of andragogy with the components of natural environment practice. Figure 8.2 offers a screenshot of the matrix, and the completed Question Matrix with all survey and interview questions can be found in [Appendix A](#).



Figure 8.2 Question Matrix Screenshot

Adult Learning Theory	Natural Environment			
		Location	Specialized Instruction	Caregiver Interaction In Daily Routine
Adults need to know	Survey			When you decide to move away from the natural environment materials, what is the most common reason? How often is an activity initiated by the caregiver?
	Interview	In what ways do your coaching moves support a caregiver's understanding of their purpose in supporting their child?		In what ways do your coaching moves support a caregiver's understanding of their purpose in supporting their child?
	Keywords	<i>Ownership of agenda/course of learning The why Learning is facilitated not directed</i>	<i>Ownership of agenda/course of learning The why Learning is facilitated not directed</i>	<i>Ownership of agenda/course of learning The why Learning is facilitated not directed</i>
Adults are self-directed	Survey	How is the setting typically chosen?	How is the setting typically chosen? How often is an activity initiated by the caregiver?	How is the setting typically chosen? How often is an activity initiated by the caregiver?
	Interview	In what ways do your coaching moves help a caregiver feel responsible for their decision making?	In what ways do your coaching moves help a caregiver feel responsible for their decision making?	In what ways do your coaching moves help a caregiver feel responsible for their decision making?
	Keywords	<i>Autonomy Treated as equals Learning is facilitated not directed Control</i>	<i>Autonomy Treated as equals Learning is facilitated not directed</i>	<i>Autonomy Treated as equals Learning is facilitated not directed</i>

Phase 1: Survey

The survey questions used in this study were specifically designed for the project. In order to ensure the validity and reliability of the questions, the survey underwent two rounds of cognitive interviews. I utilized the think-aloud approach; during a think-aloud, the participant provides an account of their thoughts while responding to each question (Ryan, Gannon-Slater, & Culbertson, 2012). Before administering the survey to REACH employees, I met individually with two other Pennsylvania-based EI therapists. I modeled the think-aloud process by thinking through my response to the question, “What is the hardest part of getting ready in the morning?” Each therapist shared their thinking as they responded to the draft survey questions. Based on their feedback, I adjusted questions that lacked clarity or focus. Initially, the survey used a Likert scale to rate the extent to which practitioners implemented each practice during a session. However, one cognitive interview participant shared, “To respond to the frequency for implementation, I am thinking about percent of the time ... maybe it would be easier if you just



asked that.” Therefore, I adjusted survey questions to include percentages of time rather than the Likert scale for frequency.

I organized the survey’s 12 questions by the components of natural environment practice and aligned them to principles of andragogy (as illustrated by the question matrix). This organization allowed me to determine the extent to which coaches implement each component of natural environment practice and the connection between each component and the principles of andragogy. In addition, the survey sought information regarding comfort level and amount of training related to natural environment practices.

Phase 2: Interviews

Interviews took place after the survey, which allowed me to deepen my exploration and address any wonderings prompted by the survey data. In addition, I used the survey to identify interested participants; the final question on the survey requested volunteers for the interview portion of the study.

The interview questions were specifically designed to tie the principles of andragogy to the components of natural environment practice. One survey question asks, “In what ways do your coaching moves support a caregiver’s understanding of their purpose in supporting their child?” Knowles et al. (2015) explain that adults need to clearly understand the purpose for the learning. Cox et al. (2015) illustrate that coaches meet this need by giving clients control over the agenda for a session. In Early Intervention, a setting is selected based on the opportunities it presents for instruction (Bricker, 2001), and the setting provides a variety of opportunities to learn (Sheldon & Rush, 2003). Therefore, when an interview participant responds to the question about a caregiver’s understanding of purpose, part of the analysis will look for a mention of location or setting and determine the alignment to that component. Each of the interview



questions follows this model to connect the principles of andragogy to natural environment practice.

Some of the interview questions served as the follow-up to the survey questions. For example, one survey question asked, “How comfortable are you implementing materials from the natural environment?” The participants rated their comfort based on a scale: extremely, mostly, fairly, not at all. Since the therapists’ perceptions were a critical piece of this inquiry, a similar question was asked as part of the interview to develop my understanding of their thoughts and feelings. The interview question asked, “What are your perceptions of [natural environment] practices?”

I used the principles of andragogy to organize the interview questions and then mapped each question to the components of natural environment practice in the Question Matrix. During data analysis, this organization allowed me to capture participant comments in the context of the conceptual framework.

Similar to the survey, the interview questions underwent a think-aloud protocol with one external therapist. Responses proved relevant, and I made no additional changes after this process.

Participation

The 17 REACH employees were the target participants for this study. In the spring of 2020, I met with the REACH team, provided an overview of our program at Vanderbilt, and explained the purpose of the study. A few months passed between the initial meeting and the start of data collection. Consequently, in the fall of 2020, I sent a video message reminding individuals of the study context and the link to participate in the survey. The survey remained

open from October 29, 2020, through November 29, 2020, and 13 REACH employees responded.

Interviews took place on January 29, 2021. Six REACH team members and Singley, the owner of REACH, participated in a total of seven individual interviews that lasted between 30 to 60 minutes. Interviews took place through the Zoom video conferencing platform and, with participant permission, were recorded for transcription purposes.

Phase 3: Resource Review

To better understand the overall work experience of REACH employees, I reviewed company resources. The purpose of this phase was to determine the extent to which materials aligned with the components of the theoretical framework. I asked Singley to provide the documents or materials her team interacts with most frequently or items she considers representative of the organization. Singley provided firm-specific materials and documents from the county/state. She also gave me access to the REACH online employee portal, which contains dozens of supporting resources. Seven of the core documents will be the focus for analysis because Singley indicated these materials are most critical to the team:

1. EI Paperwork Guidelines and Procedures (firm-specific) – provided to new staff at time of hire
2. REACH Mission Statement and Policy and Procedures (firm-specific) – provided to new staff at time of hire
3. Northampton County Annual Summary Report (county) – required by Northampton County; completed once a year
4. Progress Monitoring Summary (county/state) – required by the state to monitor child growth



5. EI Session Note (county/state) – completed after each session and used for billing/payment
6. Pre-Service Checklist (firm-specific) – provided to new staff and completed before seeing clients
7. Annual Staff Review (firm-specific) – completed by Singley each year for each member of the team

Data Analysis

Phase 1: Survey

Based on the sample size and number of discrete categories, I utilized descriptive analysis for the survey data. I organized the data into frequency tables grouped by the components of natural environment practice. The tables allowed me to identify trends based on the frequency of responses among participants.

First, I reviewed the natural environment *Location* component. Questions related to this component include:

- What percentage of a session takes place in a natural setting?
- How is the setting typically chosen?*
- Most often, sessions take place:**

* indicates participants could choose more than one response

** Cognitive interview participants shared that many caseloads are evenly split between locations (ex: daycare and home) and suggested that the survey allow for at least two selections from the list.

I examined the percent of time a naturalized setting was used for a session and compared that to how the location was selected. I also reviewed the frequency at which certain settings served as



the location for therapy. I compared this data to the documented best practice, which calls for naturalized settings determined by the parent or child's regular routine.

Second, I reviewed data related to the materials used during therapy sessions. For this process, I grouped the remaining natural environment components, *Specialized Instruction* and *Caregiver Routines*, together because the questions represent an overlap in the practices themselves. The questions in this section include:

- How often do you PLAN to incorporate natural environment materials into your session?
- How often do you have to move away from natural environment materials during a session?
- When you decide to move away from the natural environment materials, what is the most common reason?
- How comfortable are you implementing materials from the natural environment?

Best practice calls for specialized instruction integrating materials found in the natural environment. Therefore, I examined how often a provider planned to implement naturally occurring materials and how often they had to abandon those plans. This section also asked participants to reflect on their comfort level utilizing natural environment materials. I was able to compare the reported practice to the participants' personal perceptions of the practice.

In the third step of the survey data analysis, I reviewed *Specialized Instruction* and *Caregiver Routines* related to the activities that occur during a therapy session. Questions in this section include:

- How often is an activity initiated by a child?
- How often is an activity initiated by a caregiver?
- How often do you initiate an activity?

Ideally, EI services include participation-based practices driven by the child and/or caregiver in their natural routine. I reviewed the frequency of child, caregiver, and provider-initiated activities reported by participants and compared that data to the ideal practice.

Finally, I reviewed responses regarding training in the area of natural environment practices. I compared the quantity of training to the reported frequency of implementation and the reported comfort level regarding natural environment practices.

Phase 2: Interviews

The interview questions were designed to tie the principles of andragogy to the components of natural environment practice. I created a coding spreadsheet to examine responses through the conceptual framework. Sharing the coding spreadsheet in its entirety risks the confidentiality of participants; however, Figure 8.3 offers a screenshot of the spreadsheet’s organization (participant codes removed to protect confidentiality).

Figure 8.3 Coding Matrix

CODING KEY			
Participant	Natural Environment Practices	Alignment	
Each interview randomly numbered 1-7	L - Location S - Specialized Instruction C - Caregiver Interaction In Daily Routine	A - Aligned N - Not Aligned	

Adult Learning Theory			
Adults need to know	Adults are self-directed	Adults have a wealth of prior experience	Adults are active
# L A Always carry back to home	# S A I don't say "this is what we are going to work on"	# S A Depends on their history/culture	# L C
# L A Where the child is primarily	# C A The parent decides "what's hard"	# C A I have to ask a lot of questions	# S
# C A I explain that I am only going to here for 45 minutes. Some get it - I need to know how to do this when you are gone.	# C A The decision starts with them - routine they picked	# C A Need to learn about who the parents are first	# L S C

The focal columns of the spreadsheet (blue column headers in Figure 8.3) sorted data into topic codes based on the principles of andragogy. Each focal column included three supporting columns.

1. **Participant code** – assigned a number for each participant. I did not include additional identifying information because REACH is a small organization, and this information would impact anonymity.
2. **Natural environment practice** – identified the component of natural environment practice associated with the data entry.
3. **Alignment** – identified whether the statement was aligned or not aligned with the associated principle and component of natural environment practice. Initially, there was an additional column to separate alignment to the natural environment practice and the principle; however, the codes were all consistent, and I removed the column to increase readability for analysis.

In addition to the focal columns representing the six principles of andragogy, the spreadsheet included three additional columns (not pictured):

1. Training related to natural environment practices – An interview question asked participants to comment on their training experience. This column collected those responses.
2. Perceptions of natural environment practice – An interview question asked participants to comment on their personal perceptions of natural environment practices. This column collected those responses. If a response was also related to a principle of andragogy, it was coded in that column as well. For example, one participant said, “It is good because it puts parents in the driver’s seat.” In addition to the *Perceptions* column, this comment

was coded in the *Adults are self-directed* column because it demonstrates that the therapist recognizes that self-direction is important for the caregiver.

3. Perceptions of coaching and coaching practice – This theme emerged from the data review, and I subsequently added this column. The process occurred during the fourth read described in the following section.

Audio transcripts from the recorded Zoom interviews served as the basis of qualitative data analysis; I reviewed each transcript four times for coding purposes. During the first read, I looked for the principles of andragogy. Participant statements were moved to the coding matrix if their language was associated with the principle. Original interview questions aligned with the principles; therefore, most of the placement in the matrix was contingent upon the question asked. Some statements, however, utilized keywords related to other principles and were subsequently added to additional focal columns.

The second read focused on the components of natural environment practice. The green column coded each statement as L – *Location*, S – *Specialized Instruction*, and/or C – *Caregiver Interaction In Daily Routine*. Many comments received multiple codes. For example, I coded the statement “I often try to help parents see that just the way they unload the dishwasher can help improve their child’s speech” as S and C; in the statement, the therapist demonstrated that they were aligning a common practice (C) with a child’s goal (S).

For the third read, I reviewed each statement in the spreadsheet and returned to the transcript for context. If the report aligned with/supported the component or principle, I coded it with an A in the yellow alignment column. If the statement did not align with/support the principle, I coded it with an N. For example, “I educate parents as to why they are using specific strategies” was a statement added to the *Adults need to know* column. The statement supports the

principle, and I coded it as an “A.” On the other hand, “I often have to make decisions for the parents because they are overwhelmed” was a statement added to the *Adults are self-directed* column and coded “N” because it does not support the principle. I added the alignment code to the yellow column.

To further analyze the qualitative data and establish themes, I created a summary table, Table 8.4, using the theoretical framework.

Table 8.4 Interview Summary Alignment Table – Theoretical Framework

Adult Learning Theory			Natural Environment		
			Location	Specialized Instruction	Caregiver Interaction In Daily Routine
Adults need to know	Aligned	7	1	2	7
	Not Aligned	0	0	0	0
Adults are self-directed	Aligned	4	1	3	4
	Not Aligned	3	0	2	2
Adults have a wealth of prior experience	Aligned	7	0	4	7
	Not Aligned	0	0	0	0
Adults learn when they have a need to learn	Aligned	5	2	2	3
	Not Aligned	2	0	0	0
Adults are relevancy-oriented	Aligned	5	3	5	5
	Not Aligned	2	1	1	1
Adults are internally motivated	Aligned	6	0	0	6
	Not Aligned	1	0	0	0

From the coding spreadsheet, I examined responses from each participant to determine if they were aligned or not aligned with each principle of andragogy (blue rows); the values listed next to the *Aligned* or *Not Aligned* labels represent the total number of participants in each designation. I then looked for alignment with each associated component of natural environment



practice (green columns); the values in those columns represent the number of participants who made statements aligned or not aligned with each component. For example, one respondent said, “They are more ready when you figure out what the parent wants and then slip the tips into conversation.” This statement aligns with *Adults learn when they have a need to learn*. So, this participant counts as one of the five in that row of the summary table [1]. That statement also aligns with *Specialized Instruction* and *Caregiver Interaction In Daily Routine*, so I counted this participant in the aligned row for each of those columns as well [2]. Many statements connect to more than one component of natural environment practice, so it would be inappropriate to find a sum of the green columns.

Table 8.5 summarizes additional themes from the qualitative data. When asked about education or professional learning regarding coaching in the natural environment, responses emerged in three categories: (1) a formal course at the university level, (2) training provided by an employer, and (3) experience in EI. This third category – includes statements such as, “Trial by fire once I started Early Intervention” and “In Early Intervention, it is what the family needs, so I just had to figure it out.”

Table 8.5 Interview Summary Table – Additional Themes

Education/Professional Learning		Perceptions/Feelings – Natural Environment		Perceptions/Feelings – Coaching	
Higher education course	1	Mostly aligned	6	Mostly aligned	2
Firm-specific training	1	Mostly not aligned	1	Mostly not aligned	4
Experience	5			Not mentioned	1

I coded participant responses regarding their perceptions of natural environment practices as aligned or not aligned. Each participant made several statements in response to this question. If the majority of their comments were aligned, I counted that participant in the *Mostly aligned*



row. If most of their statements were not aligned, I calculated that participant in the *Mostly not aligned* row.

The fourth read focused on a theme that emerged during the review. The original interview did not include a question regarding perceptions of coaching practice; however, each question specifically used the words “coach,” “coaching practices,” or “coaching.” Six out of seven participants made several statements regarding coaching in general and their coaching practice throughout the interview. I added these statements to a new column in the coding spreadsheet. On the fourth read of the interview transcripts, I also looked for additional comments to determine the context for alignment coding. I coded statements such as, “I am a coach, and I am constantly explaining to parents what that means” as *Aligned* because the participant referred to themselves as a coach. Comments like, “Using the natural environment makes a lot of sense to me, but coaching parents, I’m not always sure that is my role” were *Not aligned* because it demonstrates the participant questioned their role as a coach.

Phase 3: Resource Review

I used the synthesized conceptual framework as my lens to determine the extent to which REACH’s core materials aligned with the components of natural environment practice and andragogy principles. First, I read each document and highlighted in green any statements related to natural environment practice. For example, I highlighted the phrase “Family’s daily routines and natural environment” in green because it relates to the components of natural environment practice. Second, I read each document and highlighted statements related to the principles of andragogy in blue. I did not anticipate finding the principles explicitly named in the materials, so I again used the keywords identified in the Question Matrix as a guide.



During Phase 1 and 2 of data analysis, training and professional development stood out as an area requiring additional inquiry. In my third read of the documents, I highlighted any mention of training or professional development in purple. For example, the document *REACH Mission Statement and Policy and Procedures* explains the “24 clock hours” of professional development required by the state. This statement was highlighted in purple because it references the professional development required by all EI employees.

To aggregate the highlighted codes from the disparate documents, I created a spreadsheet with the andragogy principles and concepts of natural environment practice in a vertical column. The title of each core document appears across the top row—one title per column. The full Document Review Coding Spreadsheet is available in [Appendix B](#), and a screenshot of the natural environment practice section can be found in Figure 8.6.

Figure 8.6 Screenshot of Document Review Coding Spreadsheet – Natural Environment

	<u>EIPAPERWORK GUIDELINES AND PROCEDURES</u> (Firm Specific)	<u>REACH Mission Statement and Policy and Procedures</u> (Firm specific)	<u>Northampton County Annual Summary Report</u> (County)	<u>Progress Monitoring Summary</u> (County/state)	<u>EI Session Note</u> (County/State)	Pre-Service Checklist	<u>Annual Staff Review</u>	
	11	2	1	3	4	0	0	21
Location	1 Family's daily routines and natural environment;			1 List service locations	1 Location of session	0 References "how EI operates"		3
Specialized Instruction	4 Family's daily routines and natural environment; weekly strategies; Outcome/Goal being address during session		1 Present Level of Function/Progress Made:		1 What we did today to address the outcome	0 References "how EI operates"		6
Caregiver Daily Routine	6 Establish a daily routine; Family's daily routines and natural environment; Specific information regarding parent/caretaker involvement; You must find ways to involve the parent/caregiver/teacher; include ROUTINES that are being addressed; specific routines to work on	2 functional in nature; encompass family life as the essence of progress monitoring.		2 Improved routines Not improved routines	2 activities and routines, family participation and how strategies were used.	0 References "how EI operates"		12



I coded the content by moving highlighted phrases from the documents to the associated columns on the spreadsheet. Then I recorded the frequency of aligned language in the gray cells. For example, *REACH Mission Statement and Policy and Procedures* uses language related to caregiver daily routines two separate times; I recorded the number two in the gray row. The row directly below each document title is a sum of related statements in that document. Visible in the screenshot, *EI Paperwork Guidelines and Procedures* has 11 statements related to natural environment practice.

Findings

This study sought to answer the question: *How are natural environment practices implemented by coaches from the Pennsylvania-based Early Intervention provider REACH Therapy Services?* Data analysis uncovered four key findings:

1. REACH employees regularly implement natural environment practices that include consideration for location, specialized instruction, and caregiver interaction in daily routines most of the time.
2. REACH employees have mostly positive perceptions of their ability to implement natural environment practices.
3. REACH employees have mostly negative perceptions of their coaching ability.
4. REACH employees report implementing behaviors consistent with the principles of andragogy, which underpins coaching practices.

Key Finding #1

REACH employees implement natural environment practices that include consideration for location, specialized instruction, and caregiver interaction in daily routines most of the time.

Survey frequency tables (Table 9.1) indicate that most of the time sessions take place in a natural location, which is considered a best practice for EI sessions. The survey further shows that parents or family circumstances most frequently drive the selection of the setting.

Table 9.1 Location (Settings)

What percentage of a session takes place in a natural setting?	
25% or less	0
26%–50%	1
51%–75%	1
76%–100%	11

How is the setting typically chosen?*	
Suggested by me	0
Suggested by the parent	6
Suggested by the child	1
Driven by a specific goal	2
Driven by timing or circumstance	5

Most often, sessions take place:*	
In the child's home	12
Clinic	0
In the child's childcare facility	3
In a community setting (restaurant, park, etc.)	3

When the EI instructor provides the caregivers some choice over location, it increases the parent agency. Agency is directly related to the *Adults are self-directed* principle of andragogy (Knowles et al., 2015; Cox, 2015). During an interview, one participant explained:

Sometimes a parent will share that the worst behaviors occur at the grocery store. [The parent] typically decides to not take their child to the grocery store, but that's not really solving the problem; it's avoiding the problem. So, I go to the grocery store with them. We need to be in the place where the behavior occurs, so we can [learn how to] avoid the behavior. So, they might not always be at the grocery store, but we shouldn't *never* go to the grocery store.

In this circumstance, the therapist worked with the parent to select a location. This practice empowers the parent and provides an opportunity to examine natural routines that occur outside the home (grocery shopping).

The survey data (Table 9.2) further demonstrates that most of the time the REACH team uses materials from the natural environment during EI sessions.



Table 9.2 Specialized Instruction & Caregiver Routines (Materials)

	How often do you PLAN to incorporate natural environment materials into your session?	How often do you have to move away from natural environment materials during a session?	When you decide to move away from the natural environment materials, what is the most common reason?	
25% or less of the time	1	9	Parent request	3
26%–50% of the time	2	3	Child compliance	5
51%–75% of the time	2	1	Lack of appropriate material	5
76%–100% of the time	8	0		

How comfortable are you implementing materials from the natural environment?	
Extremely comfortable – I wouldn't know how else to do my job.	3
Mostly comfortable – I feel like I can make it work most of the time.	7
Fairly comfortable – I find it more productive to use other methods or self-created materials.	2
Not comfortable – I typically use self-made materials.	1

The *Adults are relevancy-oriented* principle of andragogy tells us that adults learn best when the learning is relevant to their needs (Knowles et al., 2015). Using materials from their homes or personally selected settings ensures parents see the connection between the session and their everyday life. During an interview, a participant shared, “We schedule the sessions during dinner. Then the meal becomes our workspace. Everything we need is on the table.” When the team does move away from materials found in the natural environment, it is usually due to child compliance or lack of appropriate materials. According to the data, this happens infrequently.

The survey data (Table 9.3) also indicates that the majority of the time, session activity is driven by the child. Child-driven sessions are considered a best practice in EI services (Cross et al., 2009; Palisano et al., 2011).



Table 9.3 Specialized Instruction & Caregiver Routines (Activity)

	How often is an activity initiated by a child?	How often is an activity initiated by the caregiver?	How often do you initiate an activity?
25% or less of the time	0	5	4
26%–50% of the time	2	5	4
51%–75% of the time	7	2	3
76%–100% of the time	4	1	2

An interview participant explained, “Most of the time, it works out perfectly. Young kids don’t know to be embarrassed or worried about social norms. So, they just behave the way they normally would. So, it is easy to jump right in.” Another participant shared a similar thought and then illustrated another scenario:

There are sometimes situations where the child is just on a device and couldn’t be bothered. So, then I have to ask the parent what chores or home activities need to be done. They will say something like, ‘emptying the dishwasher.’ So, then I encourage the parent to invite the child to do that.

The therapist explained that once they are at the dishwasher, the child’s behavior takes back over as the driver of the session.

Phase 3, the resource review, demonstrated that core materials reinforced natural environment practices (Figure 8.6). Five out of the seven documents explicitly mentioned components of the natural environment; there were a total of 21 references across the seven core documents. Eleven references regarding natural environment practices emerged from the firm-specific resource *EI Paperwork Guidelines and Procedures*. This document provides specific directions related to selecting a natural environment and writing goals related to naturally occurring routines. The *Guidelines and Procedures* document also provides direction for

completing the required *EI Session Note*, which accounts for four additional references aligned to the components of natural environment practice. The *EI Session Note* requires documentation regarding a specific family routine and caretaker participation in the session. The guidance and accountability outlined in the core materials help explain why the REACH team demonstrates behaviors consistent with natural environment practices.

Key Finding #2

REACH employees have mostly positive perceptions of their ability to implement natural environment practices.

Six out of the seven interview participants made statements directly aligned with positive natural environment practices. Statements made by team members show that they see the value in natural environment practices:

“It is natural. Now, I don’t know any different.”

“It just makes sense.”

“More beneficial than structured environments—especially for the younger kids.”

In addition, participant statements demonstrate their overall understanding of the practices themselves. For example, one participant said, “I love it—it is real life. The idea is that you are getting the parent to be the therapist—they don’t have a fancy gym. Need to use the items and prompts they have every day.”

Some participants have mixed feelings about integrating natural environment practice but ultimately see the positive impact on the families. One participant shared, “It [natural environment practices] is harder for me, but it makes much more sense for the family.”

Ten out of 13 survey respondents said they were either Extremely Comfortable or Mostly Comfortable using materials from the natural environment. During an interview, one participant elaborated on this response.

On the [survey], I said I was Mostly Comfortable using materials from the home. That is really more about what I can expect to be in the home or what a parent would be comfortable with me using. ...I have no problem dumping the silverware drawer on the floor and re-sorting it, but not all moms like that.

In addition, internal REACH documents and the county *EI Session Note* provide implementation guidance for practitioners. Researchers postulate that therapists are more likely to implement participation-based services in the natural environment when they have a clear understanding of the expected practices (Flemming et al., 2011). The confidence the REACH team demonstrates related to natural environment practices may be attributed to the guidance they received in this area.

Key Finding #3

REACH employees have mostly negative perceptions of their coaching ability.

Four out of seven REACH team members expressed negative perceptions of coaching, and one did not refer to coaching at all during their interview (Table 8.5 summarizes this data). Statements from participants called into question their role or ability to coach, such as:

“Using the natural environment makes a lot of sense to me, but coaching parents, I’m not always sure that is my role. So, I feel like I have to be more conversational.”

“I’ve had pushback—I’ve had parents expect the structure. So I have to explain that I am a coach, but I am not sure I am doing that part right.”

The literature indicates service providers commonly express challenges with coaching as a delivery method (Flemming et al., 2011; Meadan, Douglas, Kammes, & Schraml-Block, 2018; Inbar-Furst et al., 2019). During another interview, a therapist explained, “Some families come to EI from a clinical experience. So, that can be a confusing transition for the parents. They don’t understand why we aren’t just ‘doing it.’” Research indicates that incongruent expectations between professionals and families are a common barrier for therapists using coaching as a service delivery method (Meadan et al., 2018).

A 2017 qualitative study, conducted as part of a larger mixed methods study, found that occupational therapists and physical therapists (n=17) expressed positive perceptions of coaching as a service delivery method only after receiving explicit training related to coaching practice (Graham et al., 2018). Some of the REACH employees shared similar thoughts:

“No one really teaches you the coach part.”

“It was never really taught, so that is the part that always feels a little off.”

The document review found that only one document, the REACH *EI Paperwork Guidelines and Procedures*, explicitly mentioned coaching. This firm-specific resource explicitly states, “You are the coach.” The other six documents are void of the terms “coach” or “coaching.” Research suggests that the lack of explicit coaching training may limit a service provider’s ability to self-reflect on coaching practice (Inbar-Furst et al., 2019). The team’s negative perceptions related to coaching may be related to the absence of training and limited on-the-job guidance related to coaching.

Key Finding #4

REACH employees report implementing behaviors consistent with the principles of andragogy, which underpins coaching practices.

While the REACH team questions their role and ability to coach, they report implementing practices aligned to the principles of andragogy that underpin the coaching approach. All seven interview participants demonstrated that they recognize that *Adults need to know* because they include the caretaker in setting session goals, developing an agenda, and connecting them to their “why.” In addition, all seven interviewees explained ways they tap into the principle *Adults have a wealth of prior experience* by asking caretakers questions about recent experiences, connecting new practices to past practices, and using analogies relevant to the family. For example, one therapist explained:

“...someone in the family works as a mechanic. So, I might explain that we are focusing on one thing at a time just like we would if we were trying to find a specific issue with a car... we would run tests on the suspension, then the steering...”

Effective coaching practice implements the principles of andragogy to meet the adult learner’s needs (Cox et al., 2018). It stands to reason that if the team is implementing the practices as described, then they may be coaching more effectively than they believe. During the document review, language consistent with andragogy principles occurred in three documents for a total of nine instances; a screenshot of the andragogy section of the Document Review Coding Spreadsheet is available in Figure 9.4. Seven of the aligned statements appeared in one document, *REACH EI Paperwork Guidelines and Procedures*. This firm-specific resource offers team members expectations for behaviors associated with the principles of andragogy. It is

possible that the participants report behaviors aligned to andragogy because of the expectations provided in the firm-specific materials.

Figure 9.4 Screenshot of Document Review Coding Spreadsheet – Andragogy

	<u>EL PAPERWORK GUIDELINES AND PROCEDURES</u> (Firm Specific)	<u>REACH Mission Statement and Policy and Procedures</u> (Firm specific)	<u>Northampton County Annual Summary Report</u> (County)	<u>Progress Monitoring Summary</u> (County/state)	<u>EI Session Note</u> (County/State)	<u>Pre-Service Checklist</u>	<u>Annual Staff Review</u>	
	7	1	0	0	1	0	0	9
Adults need to know	1 pick one or two							1
Adults are self-directed	2 their child's own therapist ; pick one or two				1 Guided practice w/feedback Caregiver practice w/feedback *also includes direct instruction and demonstration			3
Adults have a wealth of prior experience	1 Ask how the child did the previous week, how did strategies work, current questions/concerns?	1 encompass family life as the essence of progress monitoring.						2
Adults learn when they have a need to learn								0
Adults are relevancy-oriented	1 Ask how the child did the previous week, how did strategies work, current questions/concerns?							1
Adults are internally motivated	1 their child's own therapist							1
"Coach" "Coaching"	1 You are their "coach".							1



Recommendations

The key findings of this study provide information to answer the question: *How are natural environment practices implemented by coaches from the Pennsylvania-based Early Intervention provider REACH Therapy Services?* As expected in an exploratory study, the findings also lead to more wonderings and inquiries. The following recommendations will allow REACH leadership to further explore natural environment and coaching practices within the organization.

Recommendation One: Integrate Coaching Development

Recommendation #1

Integrate coaching professional development for all service providers.

Key Finding #3

REACH employees have mostly negative perceptions of their coaching ability.

Key Finding #4

REACH employees report implementing behaviors consistent with the principles of andragogy, which underpins coaching practices.

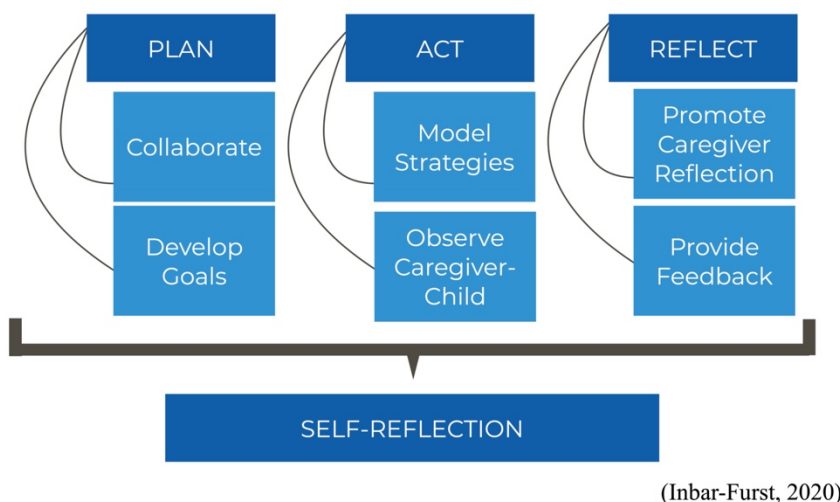
Key Findings #3 and #4 present a dichotomy that elicits a sense of urgency. Finding #3 indicates that REACH employees are not comfortable with their coaching ability. Contrary to this finding, the REACH team reports implementing behaviors consistent with andragogy principles, which underpins effective coaching practices. To rectify this imbalance, in Recommendation One, I suggest integrating coaching professional development for all service providers.

Caregiver coaching is an effective, recommended strategy for EI (DEC, 2014). While the REACH team indicates negative perceptions of their coaching practice, the team reports many behaviors consistent with positive coaching practice in the form of the andragogy principles. Therefore, firm-specific coaching training may be the most appropriate first step. Locally designed professional development will allow for a personalized experience that draws upon the knowledge and expertise that already exists on the team. Currently, the REACH team’s positive coaching behaviors are occurring seemingly by accident. An explicit focus on coaching will allow the team to develop their craft and reflect on their practice.

The literature provides various models for coaching practice (Ingersoll & Dvortcsak, 2006; Meadan et al., 2016; Rush & Sheldon, 2016; Inbar-Furst, 2020). It would be beneficial for REACH to select a standard model for their team. A 2020 study specifically targeted EI coaches and presented the Plan, Act, Reflect (PAR) strategy (Inbar-Furst, 2020). As an EI-specific strategy, I would strongly recommend this model for consideration. In the *Plan* stage, the coach works with the family to develop goals. *Act* takes place during an intervention session while the coach models and observes.

Figure 10.1 PAR Strategy

Reflection occurs at the end of each cycle and helps inform future cycles. Throughout the entire process, the coach and the caregiver engage in self-reflection (Inbar-Furst, 2020).



The adult learning theory of andragogy provides a theoretical context for many coaching models (Cox, 2018); therefore, REACH should design professional development around the principles of andragogy. This learning may serve as an alternative to coaching-specific training or occur in conjunction. When asked directly about their coaching practice, many participants questioned their ability. However, when asked questions about behaviors that promote andragogy principles, the participants described aligned practices. Therefore, deliberately reframing their experience around the principles may change their perceptions of coaching.

EI practitioners have 24 required professional development hours each year. While some disciplines have specific requirements for part of these hours, there should be time available to complete this firm-specific training. Ongoing conversations and follow-up can be integrated into regular team meetings to ensure the learning continues outside the training session.

REACH leadership maintains an online web portal containing documents specific to the organization and local, state, and federal documentation. A portion of this portal could be designated as the Coaching Hub and house all of the materials and resources related to coaching training. For current employees, this will emphasize the importance of those materials. In addition, when leadership hires new staff, the team-coaching model will be easily accessible during the onboarding process.

Six months to a year after the firm-specific coaching training, it would be beneficial to survey the team members to gather their perceptions regarding their coaching practice. This survey data will allow REACH leadership to gauge whether or not the team grew in this area and determine the next steps.

Recommendation Two: Utilize the Natural Environments Rating Scale**Recommendation #2**

Utilize the Natural Environments Rating Scale.

Key Finding #1

REACH employees implement natural environment practices that include consideration for location, specialized instruction, and caregiver

Key Finding #2

REACH employees have mostly positive perceptions of their ability to implement natural environment practices.

The REACH team indicates that they often utilize natural environment practices and report positive perceptions of these practices. Research emphasizes that coaching models combined with learning in the natural environment are considered best practices for EI services (Adams et al., 2013). Therefore, it may be beneficial to further examine this work at REACH.

Research practitioners Campbell and Sawyer (2004) created the Natural Environment Rating Scale (NERS) as a one-page, brief measure of natural environment practice (Appendix C). The form also includes specific definitions and relevant examples. By design, the scale should be used while the rater views a videotaped lesson. However, current employees could use the NERS as the basis for self-reflection. To be effective, a service provider considers their practices through multiple lenses (Carlson, 2019). Since many interview participants explained that they learned about natural environment practices through implementation and trial and error, this concrete tool may assist in refining their approach.

Introducing a resource like NERS may be a challenge because it feels very much like an evaluative tool. Since REACH is such a small organization, it is possible to co-design integration with the team. A co-design process, rather than a directed implementation, will ensure members of the organization have ownership and will increase the likelihood the tool is accepted by the



team. As andragogy suggests, ensuring adult learners have the opportunity to be self-directed and draw upon personal experience increases their readiness to learn (Knowles et al., 2015; Cox et al., 2015). Singley could introduce the scale to her team and ask, “How might we use this tool to fine-tune our practice?” Together, the team can determine ways to use the NERS to grow as therapists and enhance their professional discourse.

One option for integrating the NERS is during the onboarding process. When new employees join REACH, they spend several hours shadowing other members of the team. The new employee could also use the checklist to provide context for the types of decisions the veteran team member makes during the session. In this situation, the form’s definitions and the checklist create a common language between the new and veteran team members.

Once the REACH team is comfortable with the rating scale and the expectations it outlines, it could be used for future study. The NERS could eventually be used during session observations. This type of data collection can help audit practices across the organization and provide feedback to guide professional learning.

Conclusion

It is October of 2009. We have come a long way since that hot July day. During each EI session with our physical therapist, she taught me how to refine the exercises. Sometimes we worked in the car. This is how we determined the baby's car seat should be on the opposite side of the vehicle. That way, when she turned to look at me, she stretched her neck. Sometimes we went for walks and thought of ways to adjust the stroller to strengthen the other side of her head. The baby was making progress, and my confidence grew. The therapist consistently pointed out essential milestones and celebrated every success.

My family had a short-term experience with EI. For some families, like ours, children enter the program and meet their goals within a year or two. For other families, entering EI is just the beginning of a long road of therapy and strategic intervention. EI services impact thousands of American families each year. Caretakers often approach the program feeling vulnerable and in need of help. Once a connection is established, the child's growth and the caretaker's well-being rest in the hands of the Early Intervention coach. With such a vital role, the coach must implement practices with a track record for success.

This project explored natural environment practices implemented through coaching. Practitioners at REACH Therapy report implementing naturalistic practices and behaviors consistent with andragogical principles; however, they may question their role as coaches. Deliberate attention to coaching that develops a common language and approach may be beneficial to the organization. The organization may gain additional benefits from gathering more detailed information regarding the implementation of natural environment practices. Future inquiry at REACH should examine:

- The perceptions of caregivers



- Data collected through the use of the NERS
- Follow-up perceptual data regarding coaching practice

Participation in this research was limited to Early Intervention practitioners at a single southeast Pennsylvania EI provider, and the data sample size was limited. Data collection was performed as part of a quality improvement project and should not be generalized across settings.



References

- Adams, R. C., & Tapia, C. (2013). Early Intervention, IDEA Part C Services, and the Medical Home: Collaboration for Best Practice and Best Outcomes. *Pediatrics*, *132*(4), E1073–E1088.
- American Speech-Language-Hearing Association. (n.d.). IDEA Part C Issue Brief: Natural Environments. Retrieved June 20, 2020, from <https://www.asha.org/Advocacy/federal/idea/IDEA-Part-C-Issue-Brief-Natural-Environments/>
- Baldwin, P., King, G., Evans, J., McDougall, S., Tucker, M. A., & Servais, M. (2013). Solution-Focused Coaching in Pediatric Rehabilitation: An Integrated Model for Practice. *Physical & Occupational Therapy in Pediatrics*, *33*(4), 467–483.
- Bricker, D. (2001). The Natural Environment: A Useful Construct? *Infants & Young Children*, *13*(4), 21–31.
- Brown, J. A., & Woods, J. J. (2016). Parent-Implemented Communication Intervention: Sequential Analysis of Triadic Relationships. *Topics in Early Childhood Special Education*, *36*(2), 115–124.
- Campbell, P. H., & Sawyer, L. B. (2007). Supporting Learning Opportunities in Natural Settings Through Participation-Based Services. *Journal of Early Intervention*, *29*(4), 287–305.
- Carlson, J. R. (2019). How am I going to handle the situation? The role(s) of reflective practice and critical friend groups in secondary teacher education. *International Journal for the Scholarship of Teaching and Learning*, *13*(1), n1.



- Chai, A. Y., Zhang, C., & Bisberg, M. (2006). Rethinking Natural Environment Practice: Implications from Examining Various Interpretations and Approaches. *Early Childhood Education Journal*, 34(3), 203–208.
- Chiarello, L. A. (2017). Excellence in Promoting Participation: Striving for the 10 Cs-Client-Centered Care, Consideration of Complexity, Collaboration, Coaching, Capacity Building, Contextualization, Creativity, Community, Curricular Changes, and Curiosity. *Pediatric Physical Therapy*, 29(3), S16–S22.
- Childress, C. (2004). Special Instruction and Natural Environments: Best Practices in Early Intervention. *Infants & Young Children*, 17(2), 162–170.
- Cox, E. (2015). Coaching and Adult Learning: Theory and Practice. *New Directions for Adult and Continuing Education*, (148), 27–38.
- Cox, E., Bachkirova, T., & Clutterbuck, D. (2018). *The complete handbook of coaching*. SAGE.
- Cross, L., Salazar, M. J., Dopson-Campuzano, N., & Batchelder, H. W. (2009). Best Practices and Considerations: Including Young Children with Disabilities in Early Childhood Settings. *Focus on Exceptional Children*, 41(8), 1–8.
- Division for Early Childhood. (2014). DEC recommended practices in early intervention/early childhood special education 2014. Retrieved from <https://divisionearlychildhood.egnyte.com/dl/7urLPWCt5U/>
- Dunst, C. J., Trivette, C. M., Humphries, T., Raab, M., & Roper, N. (2001). Contrasting approaches to natural learning environment interventions. *Infants and Young Children*, 14, 48–63.
- Fazel, P. (2013). Teacher-coach-student Coaching Model: A Vehicle to Improve Efficiency of Adult Institution. *Procedia, Social and Behavioral Sciences*, 97, 384–391.



- Fleming, J. L., Sawyer, L. B., & Campbell, P. H. (2011). Early Intervention Providers' Perspectives About Implementing Participation-Based Practices. *Topics in Early Childhood Special Education, 30*(4), 233–244.
- Graham, F., Boland, P., Ziviani, J., & Rodger, S. (2018). Occupational therapists' and physiotherapists' perceptions of implementing Occupational Performance Coaching. *Disability and Rehabilitation, 40*(12), 1386–1392.
- Graham, F., Rodger, S., & Ziviani, J. (2014). Mothers' Experiences of Engaging in Occupational Performance Coaching. *The British Journal of Occupational Therapy, 77*(4), 189–197.
- Graham, F., Rodger, S., & Ziviani, J. (2009). Coaching parents to enable children's participation: An approach for working with parents and their children. *Australian Occupational Therapy Journal, 56*(1), 16–23.
- Gray, D. (2006). Executive Coaching: Towards a Dynamic Alliance of Psychotherapy and Transformative Learning Processes. *Management Learning, 37*(4), 475–497.
- Holton, E., Swanson, R., & Naquin, S. (2001). Andragogy in Practice: Clarifying the Andragogical Model of Adult Learning. *Performance Improvement Quarterly, 14*(1), 118–143.
- Inbar-Furst, H., Douglas, S. N., & Meadan, H. (2020). Promoting Caregiver Coaching Practices Within Early Intervention: Reflection and Feedback. *Early Childhood Education Journal, 48*(1), 21–27.
- Ingersoll, B., & Dvortcsak, A. (2006). Including Parent Training in the Early Childhood Special Education Curriculum for Children With Autism Spectrum Disorders. *Journal of Positive Behavior Interventions, 8*(2), 79–87.



- Jung, L. (2003). More Is Better: Maximizing Natural Learning Opportunities. *Young Exceptional Children*, 6(3), 21–26.
- Kemp, P., & Turnbull, P. (2014). Coaching With Parents in Early Intervention: An Interdisciplinary Research Synthesis. *Infants & Young Children*, 27(4), 305–324.
- Kingsley, K., & Mailloux, Z. (2013). Evidence for the Effectiveness of Different Service Delivery Models in Early Intervention Services. *American Journal of Occupational Therapy*, 67, 431–436.
- Meadan, H., Douglas, S. N., Kammes, R., & Schraml-Block, K. (2018). “I’m a Different Coach With Every Family.” *Infants & Young Children*, 31(3), 200–214.
- Part C National Program Data*. ECTA Center. (n.d.). <https://ectacenter.org/partc/partcdata.asp>.
- Palisano, R. J., Chiarello, L. A., King, G. A., Novak, I., Stoner, T., & Fiss, A. (2012). Participation-based therapy for children with physical disabilities. *Disability and Rehabilitation*, 34(12), 1041–1052.
- Pennsylvania’s Early Intervention Program. (2020). Retrieved June 15, 2020, from [https://www.education.pa.gov/Early Learning/Early Intervention/Pages/default.aspx](https://www.education.pa.gov/Early_Learning/Early_Intervention/Pages/default.aspx)
- Ryan, K., Gannon-Slater, N., & Culbertson, M. J. (2012). Improving Survey Methods With Cognitive Interviews in Small- and Medium-Scale Evaluations. *The American Journal of Evaluation*, 33(3), 414–430. <https://doi.org/10.1177/1098214012441499>
- Rush, D., Shelden, M., & Hanft, B. (2003). Coaching families and colleagues—A process for collaboration in natural settings. *Infants and Young Children*, 16(1), 33–47.
- Sawyer, B. E., & Campbell, P. H. (2017). Teaching Caregivers in Early Intervention. *Infants and Young Children*, 30(3), 175–189.



Shelden, L., & Rush, D. (2001). The Ten Myths about Providing Early Intervention Services in Natural Environments. *Infants & Young Children, 14*(1), 1–13.

Rush, D. D., & Shelden, M. L. (2011). *The early childhood coaching handbook*. Baltimore, MD: Brookes.

Woods, J. J., Wilcox, M. J., Friedman, M., & Murch, T. (2011). Collaborative Consultation in Natural Environments: Strategies to Enhance Family-Centered Supports and Services. *Language, Speech & Hearing Services in Schools, 42*(3), 379–392.

United States Department of Education. (n.d.). About IDEA. Retrieved June 20, 2020, from <https://sites.ed.gov/idea/about-idea/>



Appendix A: Question Matrix

Adult Learning Theory	Natural Environment	Location	Specialized Instruction	Caregiver Interaction In Daily Routine	
Adults need to know	Survey			When you decide to move away from the natural environment materials, what is the most common reason? How often is an activity initiated by the caregiver?	
	Interview	In what ways do your coaching moves support a caregiver's understanding of their purpose in supporting their child?		In what ways do your coaching moves support a caregiver's understanding of their purpose in supporting their child?	
	Keywords	<i>Ownership of agenda/course of learning The why Learning is facilitated not directed</i>	<i>Ownership of agenda/course of learning The why Learning is facilitated not directed</i>	<i>Ownership of agenda/course of learning The why Learning is facilitated not directed</i>	
Adults are self-directed	Survey	How is the setting typically chosen?	How is the setting typically chosen? How often is an activity initiated by the caregiver?	How is the setting typically chosen? How often is an activity initiated by the caregiver?	
	Interview	In what ways do your coaching moves help a caregiver feel responsible for their decision making?	In what ways do your coaching moves help a caregiver feel responsible for their decision making?	In what ways do your coaching moves help a caregiver feel responsible for their decision making?	
	Keywords	<i>Autonomy Treated as equals Learning is facilitated not directed Control</i>	<i>Autonomy Treated as equals Learning is facilitated not directed</i>	<i>Autonomy Treated as equals Learning is facilitated not directed</i>	
Adults have a wealth of prior experience	Survey		When you decide to move away from the natural environment materials, what is the most common reason? How often is an activity initiated by the caregiver?	When you decide to move away from the natural environment materials, what is the most common reason? How often is an activity initiated by the caregiver?	
	Interview	How do you integrate the caregiver's personal experience into the coaching session?	How do you integrate the caregiver's personal experience into the coaching session?	How do you integrate the caregiver's personal experience into the coaching session?	
	Keywords	<i>Sometimes requires un-learning Challenge existing assumptions Reinforcing certain behaviors Personal history</i>	<i>Sometimes requires un-learning Challenge existing assumptions Reinforcing certain behaviors</i>	<i>Sometimes requires un-learning Challenge existing assumptions Reinforcing certain behaviors</i>	
Adults learn when they have a need to learn	Survey		How often is an activity initiated by the caregiver?	How often is an activity initiated by the caregiver?	
	Interview	How do you think caregivers feel about these practices?			
	Keywords	<i>Clear need Readiness</i>	<i>Clear need Readiness</i>	<i>Clear need Readiness</i>	
Adults are relevancy-oriented	Survey		How often is an activity initiated by the caregiver?	How often is an activity initiated by the caregiver?	
	Interview	How do you help connect the coaching session to what the caretaker needs to know and be able to do in order to cope effectively with their real-life situations?	How do you help connect the coaching session to what the caretaker needs to know and be able to do in order to cope effectively with their real-life situations?	How do you help connect the coaching session to what the caretaker needs to know and be able to do in order to cope effectively with their real-life situations?	
	Keywords	<i>Relevancy-oriented immediate application oriented to problem solving Address an issue of importance</i>	<i>Relevancy-oriented immediate application oriented to problem solving Address an issue of importance</i>	<i>Relevancy-oriented immediate application oriented to problem solving Address an issue of importance</i>	
Adults are internally motivated	Survey			How often is an activity initiated by the caregiver?	
	Interview	What factors do you use in a coaching session to help motivate the caregiver to learn?	What factors do you use in a coaching session to help motivate the caregiver to learn?	What factors do you use in a coaching session to help motivate the caregiver to learn?	
	Keywords	<i>Internal payoffs Needs and values</i>	<i>Internal payoffs Needs and values</i>	<i>Internal payoffs Needs and values</i>	
	Survey	How comfortable are you implementing materials from the natural environment? What percentage of a session takes place in a natural setting? Most often, sessions take place: How often do you PLAN to incorporate natural environment materials into your session? How often do you have to move away from natural environment materials during a session?	How often do you PLAN to incorporate natural environment materials into your session? How often do you have to move away from natural environment materials during a session?	How often is an activity initiated by a child? How often do you initiate an activity?	How much training have you had related to natural environment practices?
	Interview	Can you explain natural environment practices to me in your own words?	Can you explain natural environment practices to me in your own words?	Can you explain natural environment practices to me in your own words?	How did you learn about natural environment practices? What are your perceptions of these practices?



Appendix B: Document Review Spreadsheet

	EL PAPERWORK, GUIDELINES AND PROCEDURES (Firm Specific)	REACH Mission Statement and Policy and Procedures (Firm specific)	Northampton County Annual Summary Report (County)	Progress Monitoring Summary (County/state)	EI Session Note (County/State)	Pre-Service Checklist	Annual Staff Review	
	7	1	0	0	1	0	0	9
Adults need to know	1 pick one or two							1
Adults are self-directed	2 their child's own therapist; pick one or two				1 Guided practice w/feedback Caregiver practice w/feedback *also includes direct instruction and demonstration			3
Adults have a wealth of prior experience	1 Ask how the child did the previous week, how did strategies work, current questions/concerns?	1 encompass family life as the essence of progress monitoring.						2
Adults learn when they have a need to learn								0
Adults are relevancy-oriented	1 Ask how the child did the previous week, how did strategies work, current questions/concerns?							1
Adults are internally motivated	1 their child's own therapist							1
"Coach" "Coaching"	1 You are their "coach".							1
	11	2	1	3	4	0	0	21
Location	1 Family's daily routines and natural environment;			1 List service locations	1 Location of session	0 References "how EI operates"		3
Specialized Instruction	4 Family's daily routines and natural environment; weekly strategies; Outcome/Goal being address during session		1 Present Level of Function/Progress Made.		1 What we did today to address the outcome	0 References "how EI operates"		6
Caregiver Daily Routine	6 Establish a daily routine; Family's daily routines and natural environment; Specific information regarding parent/caretaker involvement; You must find ways to involve the parent/caregiver/teacher; include ROUTINES that are being addressed; specific routines to work on	2 functional in nature; encompass family life as the essence of progress monitoring.		2 Improved routines Not improved routines	2 activities and routines, family participation and how strategies were used.	0 References "how EI operates"		12
		3				1		4
Training Professional Development		3 CPR course, fire safety course, emergency evacuation and first aid, cultural competence, mediation, procedural safeguards, universal health procedures, transition training, mandated reporting, CPR/1st Aid and fire safety; 24 clock hours Staff meetings may include continuing education				1 6 hour observation		4



Appendix C: Natural Environment Rating Scale

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Natural Environments Rating Scale

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The Natural Environments Rating Scale is a brief measure designed to summarize and categorize activities that involve the child during Early Intervention (EI) home visits. Ratings are made following viewing of a videotaped visit between a service provider of any discipline (i.e., a home visitor) and the family/child. Videotapes of varied lengths that include activities involving the child may be rated; a minimum videotape length of 10-15 minutes is recommended.

The terms *home* and *home visitor* are used broadly. *Home* is used to mean any natural environment or setting where a child spends time including the home, home of a relative or family friend, home-based child care, child care centers, and neighborhood, recreational, transportation, or other community settings. The term *home visitor* is used broadly to define a professional of any discipline (e.g., physical therapist, early intervention teacher, nutritionist, etc.) who provides service to a family/child in the child's home or other community settings.

The end result of the ratings is to categorize the visits as either *setting-provided* or *participation-based*.

Setting-provided is a term to describe visits that are provided using traditional practices. In a *setting-provided* visit, the home visitor is likely to directly interact with the child, using an activity and materials designed by the home visitor. Generally, these activities relate to an outcome or objective on the child's IFSP and are designed to provide opportunities for the child to learn (i.e., acquire) or practice a particular skill. The home visitor may discuss what is being done or use their interaction with the child to demonstrate for the caregiver. At the end of the visit, the home visitor may provide suggestions for the caregiver about follow-up activities (or "home programs") that the caregiver may use with the child.

Participation-based is a term to describe visits where the child's participation in an activity is being facilitated or where special strategies or techniques are being embedded within a naturally occurring activity. In a *participation-based* visit, the caregiver and the child are interacting together; the home visitor may join that interaction in a collaborative way, but is not the primary person interacting with the child. The activity and materials used are naturally-occurring or selected by the caregiver to represent areas of concern (e.g., participating in story time at the child care program). The home visitor facilitates the activity by verifying/reinforcing what the caregiver is doing or by suggesting and teaching intervention strategies such as adaptations/assistive technology or embedding of specialized teaching/therapy techniques. The end result of a *participation-based* visit is that the caregiver knows and can use strategies that promote the child's participation in naturally-occurring activity(ies) and can use these strategies competently on their own.

Rating Categories and Guidelines:

Setting: Physical location(s) where the visit takes place. Depending on the length of the videotape, one or more settings may be observed.

Activity: An activity that involves the child is the basis of rating with the Scale. Home visits may include a variety of activities that do not directly involve the child such as

discussion between the adults (e.g., caregiver and practitioner) or explanation by one adult to another (e.g., practitioner to caregiver or visa versa). If a majority of the content of the visit includes activities that do not directly involve the child, use of the Scale is not appropriate. Coding is discontinued following this category if the videotape does not include an activity involving the child.

Type of Activity:

Category of the activity that is taking place. Depending on the length of the videotape being rated, one or more activities may occur.

Engagement Of the Child:

One of three categories – not engaged, somewhat engaged, and very engaged -- is selected to represent the child's overall level of engagement in the activity(ies) on the videotape. Children's levels of engagement may vary, especially in videotaped visits where more than one activity occurs. This category is rated by indicating the category most representative of the child's level of engagement across all activities. For example, if the child were very engaged in a 5 minute eating activity and somewhat engaged in a 10 minute play activity with a variety of toys, the tape would be rated as "somewhat engaged" as representative of the child's level of engagement in a majority of the videotape.

Leader of The Activity:

One of three categories – home visitor, caregiver, or child – is selected to indicate the person who initiated the activity. For example, an early intervention teacher may come into the home, select toys from those in the home, and initiate a play activity with the child to provide opportunities to practice fine motor manipulation skills. In this case, the home visitor is the initiator or leader of the activity. A caregiver may be using the child's own toys to engage the child in a play activity and would be considered to be the initiator or leader of this activity. Where more than one activity (e.g., both eating and play occur during the visit) occurs during the videotape, the category most representative of videotape contents would be rated. For example, if the occupational therapist's visit begins as the caregiver is already feeding the child and, when feeding ends, the therapist selects toys for the child to play with and then plays with the child, the therapist would be considered the leader or initiator of the activity if therapist-chosen activity is longer in duration than the feeding activity. If a child was participating at a child care center in an art activity with other children, and the home visitor "joined" that activity, the child would be considered the initiator of the activity.

Materials:

In order to rate this category, the rater makes a judgment about whether or not the materials that are used in the activity can be found naturally in the setting. For example, if a physical therapist were using a "therapy ball" to facilitate balance reactions with a child who is sitting on the ball in the child's living room, the materials category would be rated as "un-natural" since "therapy balls" are not typically found in family living rooms. However, if the videotape were of the gross motor time in a child care program, or of a toddler gym program such as Baby Gym or Gymboree, where balls and other equipment were available to promote children's motor development, the ball would be rated as a natural material.

Role of

Caregiver: The caregiver's role is rated in one of three categories -- not present, observer, or directly interacting with the child. As with other categories, the rating that most represents the caregiver's overall role during the session is selected. For example, if the caregiver were watching the home visitor interact with the child but left the room for 5 minutes to answer the phone, the category selected would be observer.

Role of

Home Visitor: The home visitor's role is rated in one of four categories –

- passive observer (i.e., not interacting with caregiver or child),
- active observer (i.e., interacting minimally with caregiver and/or child),
- directing activity with the child, or
- facilitating activity between caregiver and child.

A tape that showed the caregiver doing something with the child (e.g., playing with toys; feeding the child; swinging with the child on playground or backyard swings) where the home visitor was watching or observing the activity and not interacting or speaking with either the caregiver or child is an illustration of a home visitor who is playing a *passive observer* role. However, if the home visitor spoke to the caregiver or generally commented on either the caregiver's or the child's performance, the *active observer* category would be selected. If the physical therapist were working with the child to promote sitting balance or the occupational therapist is playing with the child with play-doh to encourage the child to interact with sticky materials, the role of *directing the activity* with the child would be selected. When the caregiver and child are engaged in an activity (e.g., the caregiver is feeding the child) and the home visitor is providing specific guidance to the caregiver in order to improve or validate the strategies being used, the category of *facilitating activity* would be selected as the role of the home visitor.

As with other categories, the most representative role is the category that is scored. For example, if the vision specialist worked with the child in a 10 minute play activity designed to promote the child's looking and tracking of an object and then suggested to the caregiver to try the activity and the caregiver did so for 5 minutes with the home visitor either observing or facilitating, the category of *directing the activity* would be selected.

Overall Rating:

An overall rating of one of two categories – setting-provided or participation-based – is made based on the ratings in four of the earlier categories. Categories used to determine rating are: leader of activity, materials, role of caregiver, and role of home visitor. Each item on the scale is scored as “0” or “1” with the exception of observer under the role of the home visitor category; active observer is scored as “.5” and passive observer is scored as “0”. A score of 2 or below is classified as *setting provided*; scores of 2.5 or above (maximum score = 4) are classified as *participation-based*.

Natural Environments Rating Scale

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Tape #: _____ **Length of Tape:** _____ **Rater:** _____ **Date Rated:** _____

SETTING		(Please check applicable setting(s))		
Room in the child's home				
Area adjacent to the home (e.g., backyard play area)				
Area in the child's/family's neighborhood (e.g., library; rec center, playground; walks in neighborhood)				
Recreational setting selected and used by family (e.g., gymboree; Y swim program; health club)				
Community setting selected and used by family (e.g., church; restaurants; stores; mall)				
Transportation (e.g., car; bus-public)				
Child care program				
Other:				
ACTIVITY		(Please check applicable activity)		
Child/HV, child/caregiver, or child/caregiver/HV are engaged in an activity in which the child's participation is being facilitated or child learning strategies are being embedded.				
An activity is going on with the child but the caregiver/HV are engaged in a discussion that is not related to the way in which the participants are interacting in the activity				
* Caregiver-HV are engaged in discussion, and NO specific activity is occurring with the child.				
* There is NO meaningful interaction (either physical or verbal) between any of the participants.				
* If there is no activity occurring, discontinue coding here.				
TYPE OF ACTIVITY		(Please check applicable activit(ies))		
Participation in Activity/Routine outside the home: _____ (e.g., participating at a restaurant; participating in story time during child care; riding in the car)				
Self-Care – Eating, Bathing, Dressing				
Playing with toys or other materials by self, with caregiver, with other children				
Motor activities (e.g., swinging; crawling/climbing)				
Socializing with other children				
Communication skills				
Other: _____				
ENGAGEMENT OF CHILD		(Please circle appropriate response)		
How engaged is the child in the activity?	Not engaged	Somewhat engaged	Very engaged	
LEADER OF ACTIVITY		(Please circle appropriate response)		
Who initiated the activity?	HV (0)	Caregiver (1)	Child (1)	
MATERIALS		(Please circle appropriate response)		
Can the materials used in the activity be found naturally in the setting?	No – unnatural (0)	Yes – natural (1)		
ROLE OF CAREGIVER		(Please circle appropriate response)		
What is the role of the caregiver in the activity?	Not Present (0)	Observer (0)	Directly interacting with child (1)	
ROLE OF HV		(Please circle appropriate response)		
What is the role of the HV in the activity?	Passive Observer (no interaction) (0)	Active Observer (limited conversation with child and/or caregiver) (0.5)	Directing activity with child (0)	Facilitating activity between caregiver and child (1)
OVERALL RATING				
Given the ratings above, the overall intervention can be best categorized as:	Setting-provided (2 pts or less)		Participation-based (2.5 pts or more)	