Spring 3-2017

Applying Andragogical Principles to Real-Time Embedded Parental Coaching When Helping Their Children with Hearing Loss to Talk

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by

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A Dissertation submitted to the Education Faculty of Lindenwood University

in partial fulfillment of the requirements for the

degree of

Doctor of Education

School of Education

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This dissertation has been approved in partial fulfillment of the requirements for the degree of

Doctor of Education

at Lindenwood University by the School of Education

Dr. Stephen Sherblom, Dissertation Chair — 3-24-17 Date

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Betsy Moog Brooks

Signature: Betsy Moog Brooks. Date: 3-24-17

Acknowledgements

First, and foremost, I need to thank Chris Gustus, my colleague and classmate without whom I would not be in the position to be writing this acknowledgement. Chris has been by my side, literally, for the past five years. Without Chris' support and encouragement, the completion of this paper would not have happened.

The Toddler teachers at the Moog Center for Deaf Education, Anne, Judy, Laurie, Mariana, and Rhonda, inspired and supported me, as well. This incredible group of women tolerated my ideas for change that led to the implementation of real-time embedded coaching. They took a chance on my behalf and changed the manner in which they interacted with the parents of the children with whom they were working. I owe great thanks to all of these women for trusting my instincts and believing in my ideas.

Several professors throughout this journey have supported and helped me in different ways. Thank you Dr. Henschke, Dr. Isenberg, Dr. Sherblom, and Dr. Long.

A special thank you to my daughter, Madeline, who patiently explained technology to me and who helped me during the writing process. Thank you to my friend and colleague, Amy Birath. Amy's questions and comments helped me to convey clearly my thoughts and ideas. My mother, Jean S. Moog, encouraged me to pursue my doctoral degree. She has been a mentor to me both as a mother and in my professional career. She has encouraged me and allowed me, throughout my life, to take my own path. In the case of teaching toddlers with hearing loss to talk, she afforded me the opportunity to set new standards, raise expectations, and develop best practice. Thank you, Mom.

Finally, to my husband Mike, who has eaten most dinners alone for the past five years. Thank you for allowing me to accomplish this goal.

Abstract

The purpose of this study was to explore the application of andragogical principles to real-time embedded coaching of parents, when teaching their children with hearing loss to talk. The research population included parents of children with hearing loss from 10 months-of-age to three years old. These participants engaged in parent support sessions at the Moog Center for Deaf Education using real-time embedded coaching during face-to-face sessions. The research population also included the teachers of the deaf, employed at the Moog Center, who provided the real-time embedded coaching with the application of andragogical principles during parent-child sessions. At the conclusion of the six-month study period, the five caregiver participants engaged in in-person interviews, and the five teachers at the Moog Center participated in a focus group. The interviews provided caregiver perspectives, while the focus group provided information about the teachers' perspectives about the application of andragogical principles to real-time embedded coaching. All responses were analyzed for emerging themes. Caregiver responses during the individual in-person interviews, related to their experiences as coaches during real-time embedded coaching, revealed three main themes: establishing a climate conducive to learning, readiness to learn/motivation to engage in coaching sessions, and the coaching experience. Teachers' comments, related to their experiences as coaches, provided during the focus group, revealed four main themes: changes to the implementation of providing coaching, teachers' perceptions of their roles as coaches, changes in teachers' attitudes, and changes in caregiver behavior. Teachers' perspectives, as expressed in the focus group, were in agreement with the caregivers' perspectives. Secondary data came from routine data collected at the Moog Center and

provided information about the children's receptive and expressive vocabulary growth. Data for both groups indicated the same growth for receptive vocabulary. Data for expressive vocabulary growth indicated the study children made more expressive vocabulary progress than those children whose parents did not receive andragogical real-time embedded coaching. The implementation of real-time embedded coaching with the application of andragogical principles to coaching caregivers, when helping their children with hearing loss learn to talk, increased caregiver engagement.

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Chapter One: Introduction

"Hearing loss occurs in 5 out of every 1000 newborns. Over 90% of deaf children are born to hearing parents" (Center for Hearing and Communication, n.d., p. 1). Controversy existed between those who believed that children with hearing loss should learn sign language and those who believed that children with hearing loss be provided the opportunity to learn to talk. For those children with hearing loss who learned American Sign Language, learning to read was challenging, as American Sign Language did not follow English grammar rules, and as a result, "An 18-year-old deaf student reads on average at a 3rd grade level" (Sparks, 2010, para. 3). Learning to talk affords children with hearing loss the opportunity to succeed socially, academically, and economically, and may enhance their ability to become full participants in the world at large.

Advances in technology have been effective in helping children with hearing loss learn to talk. This improved technology, coupled with the younger age at diagnosis, created the potential for a major positive impact on children with hearing loss learning to talk. Gaining access to sound, and in particular to speech, could make it possible for very young children who are deaf to learn to talk with greater ease. Further, their learning to talk could progress at a faster rate. Maximum realization of the potential benefits of early diagnosis and early amplification was dependent on educators and audiologists. The critical time for learning language was between birth and five years-of-age (Kuhl, Conboy, Padden, Nelson, & Pruitt, 2011; Ruben, 1997). Quality early intervention services, for children with hearing loss who were learning to talk, included intensive oral instruction that focused on direct teaching and education of parents regarding what they could do at home to help their children learn to talk.

During the decade previous to this writing, there was much discussion in the field of Early Intervention about how to engage parents effectively in order to achieve better outcomes for children related to overall academic performance and general life experiences. Research indicated the importance of coaching parents in a manner that would empower them to work with their children to improve their children's language skills (Hanft, Rush & Shelden, 2004; McWilliam, 2010; Rush & Shelden, 2011; Stober & Grant, 2006). However, there was little information in the research literature about the effective coaching of parents of children with hearing loss to improve their children's language outcomes.

This qualitative study explored the application of andragogical principles to real-time embedded coaching when working with parents of children with hearing loss who were learning to talk. Real-time embedded coaching involved the teacher/coach providing suggestions, comments, and support to the parent of a child with hearing loss, while the parent and child were engaged in an activity designed to provide vocabulary and language stimulation. Although many professionals in the field of oral deaf education perceived themselves to be providing services of the highest quality to the families with whom they worked, it may be that the application of andragogical principles, coupled with embedded coaching, are the keys to success. Much information existed in the literature about the increase of parent engagement that included the application of embedded coaching during parent-child activities (Dunst, 2007; Hanft et al., 2004; Roberts, Kaiser, Wolfe, Bryant, & Spidalieri, 2014; Rush & Shelden, 2005, 2011; Wilson, Holbert, & Sexton, 2006). However, no information existed in the literature about the application of andragogical principles to embedded coaching with

parents of children with hearing loss. Applying andragogical principles to coaching parents of children with hearing loss may result in enhancing parent-child interactions and promote the child's development of spoken language. Findings from this study may influence the manner in which professionals provide support to parents of children with hearing loss.

Background

Professionals provided parent support, parent education, and parent coaching for centuries. Moreover, the manner in which professionals in the field of oral deaf education provided support to parents of children with hearing loss changed over the years, and varied from professional to professional. Coaching of parents has existed for some time; however, most often it came in the form I refer to as traditional coaching. Throughout the 33 years of my career, I have provided support to parents, and have provided parent support and parent coaching for 29 of those years. In order to learn strategies and techniques for working with parents, I spent six months observing my mentor and participated in hours of conversations with her about how to increase parent involvement and how to address each individual's needs. Upon becoming the Coordinator of the Family School at the Moog Center for Deaf Education, my job involved developing the Parent Education program. Even that name has since changed, as we moved from perceiving the job of the professional as not only imparting information, but also supporting and guiding the parent. The parent-child sessions, now referred to as parent support sessions, more closely describe the focus of the sessions.

Traditional coaching of parents, student teachers, and others was a process of talking, observing, and then talking again. Teachers and other professionals considered

themselves coaching another individual when they engaged in a discussion prior to an activity and laid out the expectations. It was common practice to direct the parent by explaining a list of goals for the lesson or session. Then, observation of the parent/coachee occurred for some period. During this observation, the coach took notes as she observed, but typically did not share them during the observation, so as not to interrupt the coachee or the flow of the lesson. Upon completion of the adult-child interaction, the professional reviewed the session for the parent, stating aspects of the session that went well and those that needed improvement, including suggestions for improvement, and sometimes ideas for future sessions or follow-up. For many years, I followed this format, but it never felt good — it never felt right. It always seemed that it could be better, that I could help parents in a more efficient way.

Beginning in 2006, I spent about 18 months visiting other oral deaf education programs around the United States, in search of a program doing something different from traditional coaching, something better. I anticipated finding an organization or two that would be implementing some aspect of parent education, or providing parent support, in a manner different from what we were already doing at the Moog Center. I was in search of discovering something we could add to or change in our already well-developed program. After observing at a variety of reputable programs, none of which practiced any novel approaches, I decided to implement change within the Family School Program at the Moog Center for Deaf Education, where I was the Director of the School and Family School.

After working with some families myself and ultimately with the Family School staff, who provided the parent support sessions, real-time embedded coaching was

implemented. Practitioners began providing feedback to parents real-time, while parents were actively engaged in activities with their children designed to provide vocabulary and language stimulation. Although getting the teachers to implement real-time embedded coaching was challenging at first, when real-time embedded coaching became a part of their service delivery, the staff recognized the benefits and embraced the model.

It was not until years later that I learned about andragogy, the art and science of helping adults learn (Knowles, 1980), and andragogical principles. Although not dissatisfied with the implementation of real-time embedded coaching, there was always room for improvement. In hindsight, I recognized that I was already promoting the use of andragogical principles; I just had not attached a fancy label to the techniques and strategies. Then, as I read the work of others, I learned about additional strategies for engaging parents. Although I had developed an effective manner in which to engage with parents, in order to help them teach their children with hearing loss to talk, along the way I discovered a theoretical framework referred to as andragogy. As I engaged in coursework in the field of andragogy, it occurred to me that the application of andragogical principles to parents of children with hearing loss who are engaged in real-time embedded coaching might result in enhancing parent-child interactions and promoting the child's development of spoken language. This realization led me to this study.

Purpose of the Study

The purpose of this study was to explore the application of andragogical principles to real-time embedded coaching of parents when teaching their children with hearing loss to talk. The research population included parents of children with hearing

loss from 10 months-of-age to three years old. These participants engaged in parent support sessions at the Moog Center using real-time embedded coaching during face-to-face sessions. The research population also included the teachers of the deaf, employed at the Moog Center for Deaf Education, who provided real-time embedded coaching with the application of andragogical principles to parents of children with hearing loss between birth and three years-of-age.

The interviews with the parent participants provided depth and detail about their perspectives and feelings of receiving real-time embedded coaching with the application of andragogical principles. The focus group with the teachers of the deaf from the Moog Center for Deaf Education, who provided real-time embedded coaching with the application of andragogical principles during the coaching component of parent support sessions, explored the attitudes of the teachers who engaged in changing the manner in which they provided coaching. In addition, I examined the teachers' perspectives on the change in parent behavior related to the influence of real-time embedded coaching with the application of andragogical principles. The secondary data collected from the *MacArthur-Bates Communicative Development Inventories: Words and Gestures* (MacArthur-Bates CDI) (Fenson, Marchman, Thal, Dale, Reznick, & Bates, 2007a), presented a comparison of vocabulary progress of the children whose parents received real-time embedded coaching with the application of andragogical principles to the vocabulary progress of the children whose parents did not receive coaching in that manner (see Appendix B).

The results of this study may be important to early intervention practitioners in the field of oral deaf education, interested in enhancing parent-child interactions to

increase spoken language outcomes. Early Hearing Detection and Intervention (EHDI) programs, other state programs, or legislators interested in the language acquisition of children with hearing loss may be interested in the results of this study, as well. The findings of this study also may be important to other early intervention stakeholders, as the application of andragogical principles, combined with the implementation of real-time embedded coaching, may transfer to other disciplines.

Rationale

There was a gap in research literature regarding the application of andragogical principles to real-time embedded coaching with parents of children with hearing loss who were learning to talk. Research literature existed (Dunst, 2007; Peterson, Luze, Eshbaugh, Jeon, & Katz, 2007; Rush & Shelden, 2008, 2011; Shanley & Niec 2010) that described the increase of parental engagement when real-time embedded coaching was applied during parent-child activities; however, research was lacking in the area specific to the application of andragogical principals to real-time embedded coaching with parents of children with hearing loss. Approaching parents as adult learners and applying andragogical principles to coaching may address the unique learning needs of parents of children with hearing loss and help enhance interactions with their children to develop the children's spoken language.

There is value in understanding the interaction between the coach and the coachee. Although evidence existed that coaching was an effective strategy for supporting the learning of parents of young children with typical hearing (Peterson et al., 2007; Shanley & Niec, 2010), it was unknown whether parent coaching was an effective strategy for supporting the learning of parents of young children with hearing loss. In

addition, there existed no evidence regarding the application of andragogical principles to parent coaching to increase parent coachee learning when highly qualified professionals provided instruction in the development of spoken language by applying the principles of Listening and Spoken Language Specialists (LSLS) to parent coaching.

Research Questions

I investigated the following research questions for this qualitative study.

RQ1. How do andragogical principles apply to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (a) What is the coach's experience when applying andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (b) What is the coachee's experience when the coach applies andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk?

RQ2. How, if at all, has the application of andragogical principles to real-time embedded parent coaching contributed to a change in spoken language outcomes of children with hearing loss in relation to receptive and expressive vocabulary development?

Limitations

The sample size of this qualitative study was small, less than 10, due to the methodology, the context of this study, and the specificity of the research population. At the time of the study, there existed a limited number of children with hearing loss enrolled in the Family School Program at the Moog Center for Deaf Education, whose families received real-time embedded coaching. At the time of this writing, there were 39 independent schools in the United Stated providing spoken language instruction to

children with hearing loss. Only a small number of these programs practiced real-time embedded coaching. The results of this study may not transfer easily to other professionals, and may be challenging to implement, because the understanding of andragogical principles may be a critical factor influencing the results.

An additional limitation in this study included my relationship to the Moog Center and involved families. A potential threat to internal validity was my bias that the application of andragogical principles to real-time embedded coaching enhanced parent support sessions. Another threat was my role as the Executive Director of the Moog Center for Deaf Education. Furthermore, in this position, I was the first point of contact for the parents who enrolled their children in the Family School program, and I was the ongoing supervisor of the teachers and audiologists providing service to those children.

Definition of Terms

Andragogy. "Andragogy is the art and science of helping adults learn" (Knowles, 1980, p. 40).

Auditory-Oral education. "Auditory-Oral education is designed to help children with hearing loss learn to talk well enough to communicate confidently and accurately solely through the use of speech" (Moog, 2007, p. 131). For the purposes of this study, the term 'oral deaf education' is used interchangeably with 'auditory-oral education.'

Child with hearing loss. For the purpose of this study, child with hearing loss is defined as a child with any degree of hearing loss, including unilateral loss, or any type of hearing loss — sensorineural, conductive, or mixed.

Coaching.

> Coaching is an evidence-based adult learning strategy used for talking with parents and other care providers to recognize what they are already doing that works to support child learning and development as well as building upon existing or new ideas. Rather than telling the other person what he or she needs to do or doing something only to/with the child, individuals using coaching start with what the other person knows and is doing in order to develop and implement a joint plan that meets the needs and priorities of the person being supported through coaching. Coaching involves asking questions; jointly thinking about what works, does not work, and why; trying ideas with the child; modeling with the child for the parent; sharing information; and jointly planning next steps. (Rush & Shelden, 2008, p. 1)

Cochlear implant. "A cochlear implant is a device that provides direct electrical stimulation to the auditory (hearing) nerve in the inner ear" (American Speech-Language-Hearing Association, 2014, para. 1).

Demonstration and return demonstration. For the purpose of this study, demonstration refers to the time when a teacher engages in an activity with a child while the child's caregiver observes with a specific intent or learning objective. Return demonstration refers to the subsequent time when the caregiver engages in the same activity and illustrates his/her learning of the targeted objectives.

Early Hearing Detection and Intervention. There existed EHDI state programs in all 50 states, the District of Columbia, and eight commonwealth or territories of the United States (National Center for Hearing Assessment and Management, 2016). These

programs were responsible for the implementation of Newborn Hearing Screening, as recommended by the National Institutes of Health.

Early intervention.

> Early intervention was defined as the experiences and opportunities afforded infants and toddlers with disabilities by the children's parents and other primary caregivers that are intended to promote the children's acquisition and use of behavioral competencies to shape and influence their pro-social interactions with people and objects. (Dunst, 2007, p. 162)

Expressive language. For the purpose of this study, expressive language refers to the words a person uses to express oneself.

Joint Commission on Infant Hearing. "The Joint Commission on Infant Hearing is made up of representatives from national organizations dedicated to ensuring early identification, intervention and follow-up care of infants and young children with hearing loss" (Centers for Disease Control and Prevention, 2015, para. 3).

MacArthur-Bates Communicative Development Inventories. The *MacArthur-Bates Communicative Development Inventories* are designed to be completed by parents. The inventories require parents to rate their children's comprehension and production of vocabulary and language by reporting on a checklist (Fenson, et al., 2007b, pp. 7-8).

Newborn hearing screening. For the purpose of this study, newborn hearing screening refers to the practice of screening all newborns at birth for hearing loss.

Parent support. For the purpose of this study, parent support refers to the act of a professional interacting with a parent/caregiver of a child with hearing loss in order to

provide strategies, techniques, and/or information to facilitate enhancing communication between the parent/caregiver and the child.

Real-time embedded coaching. For the purpose of this study, real-time embedded coaching is the act of providing suggestions, comments, and support to a parent/caregiver while the parent is engaged in an activity with her child.

Receptive language. For the purpose of this study, receptive language refers to the understanding of spoken words.

Summary

The purpose of this study was to explore the application of andragogical principles to real-time embedded coaching of parents when teaching their children with hearing loss to talk. I believed that the application of andragogical principles to real-time embedded coaching had the possibility to improve parent engagement during routine daily activities with her child and might in turn increase the child's development of receptive and expressive single-word vocabulary. Through the application of andragogical principles to real-time embedded coaching, parents had an opportunity to receive suggestions and positive feedback in real-time during their interactions with their children in a safe and welcoming environment. Coaching sessions also provided parents with an opportunity to engage in reflection and feedback in the context of an open dialogue with their coaches. The findings of this study may be important to any early interventionist, as the application of andragogical principles, combined with the implementation of real-time embedded coaching, may be useful in enhancing parent-child interactions. The results of this research study added to the literature concerning

best practice for coaching parents of children with hearing loss who were learning to use spoken language as their primary means of communicating.

Chapter Two: The Literature Review

Andragogy, the art and science of adult learning, was a topic about which many people have written over the several decades previous to this writing. Coaching adults to enhance their interactions with children was a more recent topic than andragogy. The then-current literature explored a variety of topics related to coaching; however, I found no research, which investigated how, if at all, the application of andragogical principles to parent coaching contributed to a change in spoken language outcomes of children with hearing loss. To study the integration of the two concepts, andragogical principles and parent coaching related to spoken language outcomes of children with hearing loss, several topics were explored in the literature: language development, including language development of typical developing children with normal hearing and language; development of children with hearing loss; coaching parents of hearing children; coaching parents of children with hearing loss; andragogy; and the influence of andragogical techniques on parent coaching.

Language Development

Language development in children, described in terms of developmental milestones, provided benchmarks for evaluating language progress. Although there was variation in terms of the age at which children understood and used spoken English, this range provided some guidelines and benchmarks to typical language development. In general, children were able to understand more than they could say (Brooks, 2009, p. 103). "Children in every part of the world, regardless of the degree of grammatical or phonological complexity, acquire the major components of their native language by the time they are three or four years old" (Gleason, 1997, p. 101).

The goal for children with hearing loss was to develop language commensurate with their hearing peers. Therefore, understanding the differences in language development of typical developing children with normal hearing compared to language development of children with hearing loss was important.

Language development of typical developing children with normal hearing. Language milestones for children from birth to age three, depicted on Table 1, illustrates general language progress for children from birth to age three. These benchmarks, compiled from a variety of sources, provided a general description of receptive and expressive language development of typically developing children with normal hearing. Receptive language was a term that referred to the child's understanding of language and expressive language referred to the child's language production (Kozak & Brooks, 2001, p. 102).

Language development of children with hearing loss. "In the year 2000 a National Institutes of Health-funded study found that children with hearing loss who began receiving treatment at an early age demonstrated language skills that were comparable to their hearing peers, regardless of the degree of hearing loss" (National Center for Hearing Assessment and Management, 2016, p. 1). The Joint Committee on Infant Hearing (2007, p. 898) endorsed early detection of infants with hearing loss before one month of age, and recommended that all infants with confirmed permanent hearing loss should begin receiving intervention by age six months. Research indicated that children with sensorineural hearing loss achieved comparable language skills to their hearing peers when initiation of intervention services occurred early.

Table 1

Typical Language Development

Age of Child	Receptive Language	Expressive Language
0-3 months	-quiets or smiles when spoken to -seems to recognize primary caregivers' voices	-makes noises other than crying -produces different cries when tired, hungry, or in pain
3-6 months	-looks directly at speaker -responds to change in tone of speaker's voice	-coos and laughs -vocalizes in response to speaker -vocalizes pleasure and pain
6-9 months	-looks at objects, family members, and pictures when named	-babbles -may "sing along" with some familiar songs without using true words
9-12 months	-understands, "no, no" -knows own name -appears to understand some new words each week -begins to respond to requests such as "Come here" and "Want more?" -recognizes words for most common items	-jargons -sounds as if child is using his own language -says at least 3 words -gestures or vocalizes wants and needs -vocalizes to get attention
12-18 months	-understands simple commands -can listen and understand two key words in a sentence	-says at least 20 words -begins repeating words overheard in a conversation -uses new words each month
18-24 months	-understands several hundred words -recognizes names of at least five body parts -can listen and understand two key words in a sentence -responds to yes/no questions by shaking head or nodding -follows two related commands such as "Pick up the ball and give it to me."	-says at least 50 recognizable words -combines two words such as "more juice" -refers to self by own name -begins using some pronouns -repeats or imitated words heard in a conversation -uses new words each week
24-30 months	-understands at least 500 words -answers "What" and "Where" questions	-says at least 200 words -asks simple "What" and "Where" questions -uses some prepositions
30-36 months	-understands at least 1000 words -understands two unrelated directions such as "Take off your coat then go get your book."	-says at least 500 words -speaks in short, simples sentences of 2-3 words -relates experience in detail -carries on meaningful conversation -uses pronouns

Note. From Apel & Masterson (2001); Brooks (2009); Bzoch, League, & Brown (2003); Gleason (1997); National Institute on Deafness and Other Communication Disorders (2014); Voress & Maddox (1998).

A study in which the receptive and expressive language abilities of children with hearing loss, who were identified by six months-of-age, were compared to children with hearing loss, who were identified after six months-of-age, showed results, which demonstrated significantly better language scores on the *Minnesota Child Development Inventory* (MCDI) for the group identified early (Kopparthi, McDermott, Sheftel, Lenke, M., Getz, & Frey, 1991). The study population included 72 children identified by age six months and 78 children identified after age six months. All of the study children began receiving early intervention services within two months of identification. The language advantage was consistent for all children with normal cognitive abilities, regardless of degrees of hearing loss, socioeconomic status, gender, minority status, or the presence or absence of additional complicating factors. Results from this study indicated that early identification and early intervention led to significantly better language development (Yoshinaga-Itano, Sedey, Coulter, & Mehl, 1998, pp. 1168-1169). The *Minnesota Child Development Inventory* (Ireton & Thwing, 1972) included statements that described young child behavior and asked parents to respond either affirmatively or negatively, as it related to their child, to each behavior listed. Kopparthi et al. (1991, p. 217) assessed the validity and reliability of the MCDI and found a strong correlation between the MCDI and the Mental and Psychomotor scales of the *Bayley Scales of Infant Development* (Bayley, 1969).

In order to examine the relationship between age at onset of intervention and language outcomes at age five, for children with hearing loss, Moeller (2000) investigated the vocabulary skills of 112 children with hearing loss at age five. All of the study subjects enrolled in comprehensive intervention programs; however, the age of

enrollment varied, with the earliest at age 10 months. For a subgroup of 80 of these children, an evaluation of verbal reasoning skills occurred. Participants' single-word receptive vocabulary was measured using the *Peabody Picture Vocabulary Test* (Dunn & Dunn, 1981). This instrument, commonly used to measure receptive English vocabulary, was standardized on children with normal hearing; however, its use extended to other populations, including children with hearing loss, for assessing English receptive vocabulary (Moog, 2002; Moog & Geers, 1999). Verbal reasoning skills were evaluated using the *Preschool Language Assessment Instrument* (Blank, Rose, & Berlin, 1978). This instrument, designed to evaluate children's ability to answer questions ranging from simple to complex, provided information about the children's verbal language and reasoning skills. Additionally, assessment of the level of family involvement in the intervention program for the study children used a rating scale developed for the purpose of this study. Without relation to degree of hearing loss, the children who began receiving intervention earliest demonstrated significantly better vocabulary skills and verbal reasoning abilities at age five than those children who were later enrolled. The early-enrolled children also attained vocabulary and language scores that approximated those of their hearing peers. Data analysis indicated that the two factors, which explained the significant variance in the language scores gathered at age five, were family involvement and age at onset of intervention. Although early enrollment benefitted children with all degrees of family involvement, the children whose families were judged to demonstrate high levels of family involvement and who were enrolled early in intervention services were the most successful children in this study. Positive language outcomes were highly correlated with high levels of family involvement, suggesting that

greater success was dependent on the combination of early identification, early intervention, and actively engaged family involvement.

Dornan, Hickson, Murdoch, Houston, and Constantinescu (2010) conducted a study that compared 29 children with hearing loss to a matched control group of children with typical hearing, to describe language development in children with hearing loss as comparable to that of typical developing children with normal hearing. At the onset of the study, the children ranged from 2 years-of-age to 6 years-of-age. Study results included 19 of the original pairs of children whom the researchers followed for 50 months. Assessment of language was in the form of pretest and posttest vocabulary testing, using the *Peabody Picture Vocabulary Test* (Dunn & Dunn, 1997). Both groups showed significant growth in receptive vocabulary over the study period; however, growth differences related to receptive vocabulary between the groups were not significant. A contributing factor to the child's language progress was parent involvement (Dornan, Hickson, Murdoch, Houston, & Constantinescu, 2010, p. 361).

In another study, specific to children with profound hearing loss who were cochlear implant users, the investigators examined the benefits of earlier cochlear implantation related to language development. These researchers hypothesized "that children implanted at the youngest ages will exhibit a language advantage over children implanted somewhat later, even when they are compared at the same duration of implant use" (Nicholas & Geers, 2007, p. 1051). The study population consisted of a reference group and a study group. The reference group was composed of children with normal hearing, 12 of whom had a mean age of 3 years, 5 months, 25 days, and 12 of whom had a mean age of 4 years, 5 months, 20 days. All participants in this group were within

normal limits related to their chronologic age, in the areas of receptive vocabulary and communication skills as measured by the *Peabody Picture Vocabulary Test* (Dunn & Dunn, 1997), and the Communication scale of the *Vineland Adaptive Behavior Scales* (Sparrow, Balla, & Chicchetti, 1984). The *Peabody Picture Vocabulary Test* measured an individual's single-word receptive vocabulary for children 2.5 years-of-age through adulthood. The Communication scale of the *Vineland Adaptive Behavior Scales* was an inventory, completed by a parent or caregiver through an interview process, on behalf of a child from birth through adulthood. The Communication scale of the *Vineland Adaptive Behavior Scales* measured receptive and expressive language skills. These two tools, used with regularity in the field of language disorders and in the assessment of spoken language for children with hearing loss, provided an analysis of language and communication skills (Klin, Saulnier, Sparrow, Cicchetti, Volkmar, & Lord, 2007; Moog, 2002; Moog & Geers, 1999). Children with severe to profound hearing loss who received a cochlear implant comprised the study group. These 76 children received a cochlear implant between the ages of 12 months and 24 months (±2 months) and enrolled in a spoken language educational program upon receiving their cochlear implants. These participants all demonstrated intelligence within the average range, as measured by a nonverbal intelligence test or the Daily Living Skills and Motor domains of the *Vineland Adaptive Behavior Scales* (Sparrow et al., 1984). The nonverbal intelligence tests, designed to measure the child's cognitive skills involving tasks not related to language ability, provided a measure of the child's problem solving and nonverbal reasoning skills. The Daily Living Skills and Motor domains of the *Vineland Adaptive Behavior Scales* addressed the child's self-help skills and fine and gross motor skills. A comparison of the

language skills of the children with cochlear implants to those of their hearing age mates at 4.5 years-of-age using the *Preschool Language Scale* (PLS) was conducted (Zimmerman, Steiner, & Pond, 1992); and language samples were obtained at 3.5 and 4.5 years-of-age for these same 76 children. Study results indicated that children who received a cochlear implant at the youngest ages achieved language scores on the PLS similar to those of their hearing age mates by 4.5 years-of-age. However, results also indicated that the language skills of children who received a cochlear implant after age 24 months did not catch up with their hearing peers. Study researchers concluded that children who received a cochlear implant prior to developing a significant language delay, between 12 and 16 months-of-age, were more likely to attain age-appropriate language.

Meinzen-Derr, Wiley, and Choo (2011) conducted a retrospective investigation of children with hearing loss to examine the role of early intervention on language development over time and to evaluate the relationship between enrollment in an early intervention program by 6 months-of-age and early language development. The study included a sampling of children who participated in monitoring of their language development over time as part of their enrollment in the state of Ohio's Early Intervention Program during a three-year period. All participants had permanent hearing loss. Study participants included 328 children, 270 of whom had bilateral hearing loss. The median age at identification for the group was 3.4 months-of-age and the median age of enrollment in the state early intervention program was 6.5 months-of-age. Language skills were measured by using language quotients, which were derived by the researchers who used a calculation, which included units completed on the *SKI*HI Language*

Development Scale (Tonelson & Watkins, 1979) and the child's chronologic age. This parent-report observation scale, designed specifically for children with hearing loss, rated the receptive and expressive language skills of children aged birth to 5 years-of-age. This instrument, used commonly to assess receptive and expressive language in children with hearing loss, measured language skills in young children using spoken or signed English (Watkins, Pittman, & Walden, 1998). The study divided participants into groups by degree of hearing loss and examined language outcomes in individual groups. In every case, the study evaluated the significance of early enrollment in early intervention, prior to 6 months-of-age, and later enrollment in early intervention, at or after 6 months-of-age. Also considered were mode of communication — sign language or spoken language. The researchers found that children who engaged in early intervention prior to 6 months-of-age had higher language skills at the onset of the study period than children who engaged in early intervention at or after 6 months-of-age, and they maintained age-appropriate language skills over time. The researchers also found that for all groups, regardless of degree of hearing loss, the children who engaged in early intervention at or after 6 months-of-age had lower language skills at the onset of the study period; however, they made significant language progress while enrolled in early intervention. "Early enrollment in an appropriate intervention program for children who are deaf or hard of hearing is an effective strategy for the development of age-appropriate language in infants and toddlers" (Meinzen-Derr, et al., 2011, p. 587).

Benchmarks, established for the language development of typical-developing children with normal hearing, were useful for monitoring language progress in all children. Although children with hearing loss may demonstrate delayed language

development compared to hearing children, children with hearing loss were able to develop language skills within the average range when appropriate intervention was available and implemented. The language progress of children with hearing loss may follow the same trajectory as that of children with normal hearing, only at a delayed rate. It was reasonable to expect children who were identified early, received appropriate amplification early, and received early intervention to develop spoken language skills commensurate with their hearing age mates by 5 years-of-age and successfully transition to the mainstream educational system for kindergarten (Nicholas & Geers, 2007, p. 1061)

Coaching

The term 'coaching' was ubiquitous. It did not mean anything specific, as coaching was a term used to describe a variety of activities within a variety of contexts. Although the term was widely used across a variety of disciplines, the term coaching had different meanings in different contexts. A variety of definitions of coaching existed in the literature. Cox and Ledgerwood, (2003) wrote that coaching was "helping people increase their sense of self-direction, self-esteem, efficacy and achievement" (p. 1). Other authors stated, "Coaching is a helping and facilitative process that enables individuals, groups/teams and organizations to acquire new skills, to improve existing skills, competence and performance, and to enhance their personal effectiveness or personal development or personal growth" (Ellinger, Hamlin, & Beattie, 2008, p. 4). Berg and Karlsen, (2007) described coaching as "the process of challenging and supporting a person or a team to develop ways of being and ways of learning" (p. 4). Rush and Shelden (2005) categorized coaching as an adult learning strategy used to help develop the skills of a parent or primary caregiver in order to utilize existing abilities,

develop new skills, and increase the depth of one's understanding of the practices he or she uses during parent-child interactions (p.1). For the purpose of this study, it was important to define coaching more rigorously in order to provide a clear understanding of the term coaching and the intent of its use related to this work. Coaching was defined as a relationship-based process between the coach, the professional, and the coachee, the parent or caregiver. The goal of coaching was to improve existing skills and develop new skills while building the competence and confidence of the coachee in an effort to achieve desired or intended outcomes (Rush & Shelden, 2011, p. 3). The definition that most closely described the work of this study was:

> Coaching is an evidence-based adult learning strategy used for talking with parents and other care providers to recognize what they are already doing that works to support child learning and development as well as building upon existing or new ideas. Rather than telling the other person what he or she needs to do or doing something only to/with the child, individuals using coaching start with what the other person knows and is doing in order to develop and implement a joint plan that meets the needs and priorities of the person being supported through coaching. Coaching involves asking questions; jointly thinking about what works, does not work, and why; trying ideas with the child; modeling with the child for the parent; sharing information; and jointly planning next steps. (Rush & Shelden, 2008, p. 1)

Coaching parents of young children could be successful when applied for a variety of purposes. It had the potential to increase then-current knowledge and practices and offered the opportunity to develop and practice new skills. The capacity of parents

and caregivers to create situations in which they and their young children mutually engaged in an activity made a difference. When parents or caregivers were able to gain and maintain the child's attention to an activity and interpret the child's emotional cues and respond to them within a reasonable amount of time, their interactions tended to be successful. The positive result of this was that the relationship between the adult and the child was likely to promote the healthy development of the child across all developmental areas (Shonkoff & Phillips, 2000, p. 28). In addition, coaching supported learning and ongoing self-evaluation of parents and others related to providing and supporting child learning and child development. Coaches created an environment that was supportive and encouraging in which the coach and coachee worked together to evaluate and reflect on the learner's then-current practices, application of new skills and competencies based on feedback, and use of problem-solving strategies to work through challenging situations. It was the coach's role to assist the learner in acquiring the targeted skills with sufficient confidence to be able to apply self-reflection and self-correction along with new skills and techniques in other situations (Flaherty, 1999).

The concept of providing support included helping the parent or caregiver increase her awareness of her then-current knowledge and increase her ability to evaluate her performance related to parent-child interactions. In addition, support included the development of alternative ideas and strategies along with the formation of a plan for increasing one's knowledge and performance in combination with the help of one's coach, as needed. Helping the coachee reflect in a manner conducive to conducting an evaluation of her knowledge, skills, and performance, with the assistance of the coach

providing feedback as needed, was critical until the coachee demonstrated competence and felt confident enough to achieve her personal goals (Rush & Shelden, 2011, p. 4).

"Coaching of parents can promote their confidence and competence in supporting child learning and development" (Rush & Shelden, 2011 p. 4), especially when the coach was able to enhance the interaction between the parent and child when facilitating that interaction. The coach's role was to acknowledge the priorities the parents have identified for their child's development, establish parents' existing knowledge and determine what they are already doing in relation to the development of their child. Additionally, the coach's role was to provide new ideas and new information, and to work with the parent to encourage the child's participation during daily routine activities when opportunities for learning arise (Rush & Shelden, 2011, p.4).

Coaching parents of children with typical hearing. Coaching parents of children with typical hearing was examined in decades recent to this writing, and much information existed in the literature which presented strategies for providing parent support in order to enhance parent-child interactions (Cox & Ledgerwood, 2003; Dunst, 2007; Hanft et al., 2004; Rush & Shelden, 2005, 2008, 2011; Shanley & Niec, 2010; Wilson, 2005; Wilson et al., 2006). Reviewing parent coaching of children with typical hearing who presented with language delays provided insight into the effectiveness of caregiver coaching as a model for improving language outcomes. In a study titled, "Effects of the Teach-Model-Coach-Review Instructional Approach on Caregiver Use of Language Support Strategies and Children's Expressive Language Skills," Roberts et al. (2014) investigated the influence of the Teach-Model-Coach-Review instructional approach on caregivers' use of four enhanced milieu teaching (EMT) language support

strategies on their children's use of expressive language. EMT was a naturalistic model of language intervention in which the child's interests and communicative intents were opportunities for the adult to model and prompt language during daily routines and everyday activities. Participants consisted of four caregiver-child dyads, in which the children ranged in age from 24 to 42 months and had language impairment. All child participants had cognition within the normal range, as measured on the *Bayley Scales of Infant and Toddler Development*, (Bayley, 2006).

The interventionists applied the Teach-Model-Coach-Review instructional approach to teach the caregivers, three mothers and one grandmother, to implement four EMT strategies throughout 24 individualized sessions. These strategies included four components. The first component, matched turns, involved the adult's verbal or nonverbal response to the child's communicative turn. The second component, expansion, included adding words to the child's utterance or making a correction. The third component, time delay, included wait time and/or labeling or expanding the child's utterance using target language. The fourth component, EMT, consisted of a sequence of adult prompts implemented in response to a child's verbal or nonverbal communicative request (Roberts et al., 2014).

Baseline data related to each of the four EMT language support strategies. Caregivers were taught each of the four different EMT language support strategies individually, and incorporated each learned strategy in subsequent sessions. The caregivers attended seminars that focused on each of the strategies individually and observed an interventionist model the strategy with her child. Additionally, all caregivers received coaching during caregiver-child sessions while caregivers practiced the strategy

with their child. Subsequent to each session, the caregiver and interventionist-coach reviewed the session using self-reflection by the caregiver and feedback from the coach. At the end of each session, the interventionist-coach and the caregiver planned for the next session, and the interventionist provided instruction for using the target strategy throughout the day during daily routine activities in the home (Roberts et al., 2014).

The results of this study indicated that the Teach-Model-Coach-Review instructional approach might be an effective way to teach parents and other primary caregivers to use EMT language support strategies when engaging their children in play. However, adult study participants struggled to generalize and maintain their use of some EMT strategies, which indicated that ongoing teaching of caregivers across routines and over time was essential in order to achieve optimal outcomes. The application of EMT language support strategies during intervention did result in increased use of communication targets by the children and continued six months after the intervention (Roberts et al., 2014).

Coaching parents of children with hearing loss. For parents of children with hearing loss, not only did parent support sessions involve coaching the parents, but they also included providing information to the parents about hearing and hearing loss. Parents and other primary caregivers learned strategies to help their children learn to talk by stimulating listening and language development. Moog (2007) wrote, "Education and support is provided to the family . . . as they learn about hearing loss and its impact on their child's language learning and overall development" (p. 138). She added, "As they learn how to turn natural occurrences into 'teaching opportunities' for developing spoken language, they help accelerate their child's progress in learning to talk" (p. 138).

The AG Bell Academy of Listening and Spoken Language developed principles for LSLS, which were adhered to by professionals working with children with hearing loss and their families. Included in those principles were, "Guide and coach parents to become effective facilitators of their child's listening and spoken language development in all aspects of the child's life" (AG Bell Academy for Listening and Spoken Language, 2012, p. 1), supporting the concept that coaching was an integral part of working with parents. However, the guiding principles included neither a definition of coaching nor an explanation of how to coach, which left interpretation of the principle to the coach, resulting in an enormous variety of service delivery models among professionals. Many professionals adhered to the concept of coaching; however, they were implementing traditional coaching techniques that did not necessarily include the principles of andragogy.

Coaching was a term used to describe broadly the act of providing guidance or training to another individual. Then-current literature, as described previously in this chapter, referred to coaching in the context of a professional working with parents of young children as a tool for enhancing the cognitive, social, and emotional development of those children. The implementation of real-time embedded coaching provided opportunities to effect change in a parent's behavior, which in turn facilitated the development of the child.

Andragogy

Formal education in modern society, initially designed for educating children, resulted in a pedagogical model derived from the term pedagogy, which meant the art and science of teaching children. This practice of pedagogy implied that all decisions related

to what, when, and how a child should learn were made by the teacher (Knowles, 1996, p. 253). Defining education as it related to children was relatively clear, as it was easy to conjure up a picture of elementary education (which takes place in classrooms with young children), secondary education (which takes place in larger buildings on campuses with adolescents), and higher education (which takes place on campuses of colleges and universities). However, defining adult education was complex, as it involved all sorts of people, it took place in all sorts of buildings and locations, there existed no set curriculum, and it included a variety of labels, such as professional development, staff training, and continuing education, as well as others (Knowles, 1980).

The earliest use of the term andragogy was by a German teacher, Kapp, in 1833. Although Kapp used the term to describe elements of Plato's education theory of the lifelong necessity to learn, it was not widely accepted nor was the term used for any length of time (as cited in Henschke, 2009; Smith, 2010). Then, in 1921, a German social scientist Rosenstock used the term andragogy in his writings where he argued that the term referred to a collection of specific requisites related to adult education including special teachers, special methods, and specific philosophies (as cited in Henschke, 2009; Smith, 2010). Yet, at the beginning of the twentieth century when adult education began to evolve, the pedagogical model continued as the means by which adults were educated in the United States (Henschke, 2009, p. 3; Smith, 2010, pp. 1-2).

The concept of andragogy, introduced in the United States in 1926 by Lindeman, presented the first indication that a pedagogical model may not be suited for adults. In his writings, Lindeman suggested that adults were not just grown-up children, and that they learned in a manner different from children, stating that adults learned through

discussion, which is different from the manner in which children learned (as cited in Knowles, 1996). He proposed, "[adults] learned best when they were actively involved in determining what, how, and when they learned" (Knowles, 1996, p. 254). The American Association for Adult Education formalized as an organization in 1926, around the same time that adult education delineated as a field of its own (Knowles, 1980, p. 25).

Knowles (1980) defined andragogy as "the art and science of helping adults learn" (p.40). The term was further defined as, "a set of core adult learning principles that apply to all learning situations" (Knowles, Holton, & Swanson, 2005, p. 2). Knowles looked at leaders and leadership when developing his theories about adult learners. He wrote that creative leaders made positive assumptions about human nature, while controlling leaders made negative assumptions. As such, "Creative leaders have faith in people, offer them challenging opportunities, and delegate responsibility to them" (Knowles, 1979, p. 183).

The andragogical model was a process model. It differed from traditional education or coaching models in that the teacher or coach used a process for involving the learner, as opposed to deciding for the learner what knowledge or skills would be learned (Knowles et al., 2005). Six assumptions of adult learners and eight process elements were the basis for Knowles' concept of adult education.

The first of these assumptions was that adults had a need to know why they should learn something. Adults wanted a reason to learn that made sense to them. They wanted to know the benefit of learning something (Knowles, 1996).

Second was the idea that adults had a need to be self-directing. Adults wanted to be perceived as being in charge of their own lives and responsible for making their own

decisions. As such, when adults entered into an educational environment they had an underlying need for being in charge of their own learning (Knowles, 1996).

Third, Knowles explained that adults brought to any educational situation a greater volume and different quality of experience than children. Adults brought to any learning situation a plethora of life experiences that served as a rich resource for their own learning as well as the learning of others (Knowles, 1996).

His fourth assumption was adults became ready to learn when a need to learn arose. Adults were ready to learn when they experienced a situation in their life that resulted in a need to know or be able to do something in order to perform more effectively. "Adults learn best when they choose voluntarily to make a commitment to learn" (Knowles, 1996, p. 256).

Knowles described the fifth assumption as an orientation to learning. "Because adults are motivated to learn after they experience a need, they enter an educational activity with a life-, task-, or problem-centered orientation to learning" (as cited in Henschke, 2012, p. 10). In adult education, the content focused around tasks or problems associated with one's life.

The sixth assumption was motivation. Extrinsic motivators such as increased wages, better working conditions, or promotion-motivated adults. However, it was the internal motivators, such as increased self-esteem, greater self-confidence, recognition from peers, and greater responsibility, that were more persuasive (Henschke, 2012, pp. 9-10; Knowles, 1996, pp. 255-257).

Included in Knowles' andragogical model were eight process elements. Preparing learners was the first of these elements. Ironically, it was an add-on and was not included

with the original seven steps until 1995 when it appeared in response to Knowles' observation that adult learners entered into adult education with a pedagogical mindset and not as self-directed learners. Knowles recognized the need to prepare adult learners for taking responsibility for their own learning (Knowles et al., 2005).

The second process element was establishing a climate conducive to learning which included both the physical environment and the psychological climate. The physical environment included those things that potentially interfered with learning, such as the temperature, the chairs, the lighting, the acoustics, the size and layout of the room, and even the color of the room. The psychological climate referred to a climate of openness and genuineness. Significant to this element was the development of mutual respect and mutual trust along with a supportive and collaborative attitude (Knowles et al., 2005).

The third process element was planning. Creating a mechanism for mutual planning provided opportunity for the adult learner to take responsibility for her own learning. Mutual planning created buy-in. Applied behavioral science research found that people tended to be more committed to a decision or activity when they were involved in the planning, while people tended to feel uncommitted to decisions or activities they perceived as imposed on them (Knowles et al., 2005).

The fourth process element, as described by Knowles was diagnosing the needs for learning. Critical to this process was the learner's own perception of where discrepancies existed between current knowledge or skills and desired or needed knowledge or skills. The diagnosis of needs was developed by mutual agreement of both parties involved (Knowles et al., 2005).

Setting objectives was the fifth element and involved agreement between both parties of the facilitator-learner dyad. In order to meet the learner's needs during this process, discussion and negotiation were necessary. After mutual negotiation, objectives were determined (Knowles et al., 2005).

The sixth process element was designing learning plans. First, these plans involved selecting skills to address those identified by the learner. Then, these plans involved organizing the selected skills in sequence, based on the learner's readiness (Knowles et al., 2005).

Engaging in learning activities to promote learner development towards identified knowledge, skills, or competencies was the seventh process element. This process element involved the learner's active participation. This participation led to enhanced learning (Knowles et al., 2005, pp. 115-135).

The eighth process element was evaluation, which involved reflection and feedback; engaging learners in evaluation promoted higher self-reflection. During the evaluation process, there was mutual reassessment of the learner's needs and mutual evaluation of the learner's growth and progress. The purpose of evaluation was to improve one's skills and learning, which required that during the evaluation process it was critical to review the learner's desired competencies and reexamine the learner's newly developed levels of competencies (Knowles et al., 2005, pp. 115-135).

A main principle of adult learning and adult education was that adults should participate in planning their own learning activities. However, much controversy existed around this concept as there were many who continued to argue that the benefits of such participation lacked documentation. Rosenblum, the Director of Education and Training

at the New York State Psychiatric Institute, and Darkenwald, an Associate Professor of Adult Education and Director of the Center for Adult Development at the Graduate School of Education at Rutgers University, studied this ideology when they hypothesized that participation in course planning would result in greater participant learning and participant satisfaction (Rosenblum & Darkenwald, 1983). Their study involved two separate experiments. The first experiment involved 28 nursing supervisors randomly assigned to either experimental or control conditions. The supervisors in the experimental group participated in planning their course in supervision. The control group did not participate in the planning of their course, but rather completed the course as planned by the experimental group (Rosenblum & Darkenwald, 1983).

The second experiment was a replication of the original experiment and involved 26 support service supervisors. Results for both experiments were essentially identical and found that no significant differences existed between the experimental and control groups in either learning or satisfaction related to participation in the course design. This finding suggested that direct participation in itself had no effect, and in fact, the control group scored higher than the experimental group, the one that employed andragogical techniques (Rosenblum & Darkenwald, 1983).

Strawbridge (1999) investigated the effectiveness of andragogical instruction in the context of philosophy coursework at a private liberal arts college. The study population included 40 students enrolled in two evening Introduction to Philosophy courses. The researcher, who had previously taught the course, taught one term using traditional teaching methodology and the following term using an andragogical approach. At the onset of the course, the students' knowledge was measured using a pretest and at

the end of the course increased knowledge was based on two posttests. Additionally, the course evaluation tool measured student attitudes about instructional effectiveness.

When implementing the traditional teaching methodology the instructor determined the content and course objectives independent of the students, and the classroom teaching technique involved primarily lectures. The instructor dedicated some time, although limited, to question and answer periods following lectures, and some class discussion (Strawbridge, 1999). The students did not engage in planning any aspect of the course instruction or the objectives of the course. When implementing the andragogical teaching methodology the instructor determined the course objectives; however, the students developed learning contracts to guide other aspects of course instruction and evaluation (Strawbridge, 1999). The students' learning contracts included their specific learning objectives, resources they intended to use to reach those objectives, specific evidence used to confirm meeting those objectives, and criteria for evaluation. The teaching format included lectures by the instructor, many student and group presentations, opportunity for question and answer sessions, as well as discussion sessions (Strawbridge, 1999).

The findings indicated that there was no difference between the traditional group and the andragogical group on achievement, as measured by the two posttests, and no difference between the attitudes of the students, measured on the course evaluation, related to the method of instruction. Although this research did not demonstrate the advantages of an andragogical approach to teaching coursework, there is evidence that the application of andragogical principles to coaching adults can be beneficial (Strawbridge, 1999).

Applying Andragogy to Coaching

Jennings (1991) found that parents were able to make changes to their parenting strategies when provided assistance, which allowed them to get different results from their children (p. 1). Parents agreed that they were willing to apply strategies and suggestions when presented in a respectful manner.

> The key characteristics of family-centered practices include: treating families with dignity and respect; providing individual, flexible and responsive support; sharing information so families can make informed decisions; ensuring family choice regarding intervention options; and providing the necessary resources and supports for parents to care for their children in ways that produce optimal parent and child outcomes. (Trivette & Dunst, 2014, p. 1)

The degree to which coaching increased or decreased parenting confidence and competence related largely to the coaching model used during the coaching process. Coaching of parents and the sharing of information and resources in a manner that enhanced parenting capacity and not in such a way as to diminish it was critical. Programs providing parent support based on the concept that parents engaged in coaching sessions increased the likelihood they felt better about their parenting skills and resulted in parents engaging in activities with their children that enhanced their children's development (Trivette & Dunst, 2014, p. 2).

> A critical component of a parent-child session is for the parent to trust the provider. Gaining this trust is dependent on a relationship of mutual respect between the parent and the provider. These [parent support] sessions are most productive when the provider and the parent are truly partners. It is the provider's

> responsibility to demonstrate to the parent that she needs the parent's input, and that the parent's knowledge and information about her child is believed and is needed for maximum success. (Brooks, 2015, p. 2)

Andragogy referred to a specific adult learning experience applicable to a coaching relationship (Maddalena, 2015, p. 1). The coaching experience promoted life-long learning and increased internal motivation through successful experiences (Knowles et al., 2005; Maddalena, 2015). Then-current literature on coaching suggested five basic characteristics for successful coaching. These characteristics included (a) joint planning, (b) demonstration by the coach of a skill or activity, (c) observation of the coachee during an interaction with her child, (d) self-reflection by the coachee, and (e) feedback from the coach (Hanft et al., 2004; Rush & Shelden, 2011). Joint planning involved the coach and coachee agreeing on the actions taken by both during the demonstration by the coach and/or during observation of the coachee (Hanft et al, 2004; Rush & Shelden, 2011; Shelden & Rush, 2010). The coach's demonstration was of a skill or activity that builds upon what the coachee was already doing along with demonstration of new strategies and techniques. Observation of the coachee during an interaction with her child involved assessing the skills and actions of the coachee in order to develop new skills, strategies and techniques, or ideas. Subsequent to a demonstration or observation the coachee reflected on, discussed, or practiced a new skill. Reflection provided the coachee an opportunity to refine his/her skills through the process of describing what worked, what did not work, and what one would like to change or implement differently in the future. Feedback from the coach occurred after the coachee had the opportunity to reflect on his/her observations or actions (Rush & Shelden, 2011; Shelden & Rush, 2010).

The literature also indicated the inclusion of family-centered beliefs and attitudes, and practices for supporting parents and strengthening parent skills was significant (Dunst, 2002; Wilson, 2005; Wilson & Dunst, 2005). The coaching literature suggested that developing a climate of trust, mutual respect, working together, recognizing family strengths, and listening to families' priorities resulted in a positive coaching relationship (Dunst, 2002; Wilson, 2005; Wilson et al., 2006). The development of a positive coaching culture, as described here, had several parallels to Knowles' eight process elements described earlier. Trivette and Dunst (2014) stated that when parents received parenting support in a capacity-building manner it resulted in parents feeling better about themselves and their parenting abilities. This positive affect influenced interactions with their children in responsive and supportive ways promoting the social and emotional development of their children (Trivette & Dunst, 2014, p. 4). They concluded, "The extent to which help and assistance enhances or compromises parenting competence and confidence depends to a large degree on the ways in which help is offered and provided" (Trivette & Dunst, 2014, p. 2).

Summary

Although there was much theory about adult learners and the rationale for implementing an andragogical approach when engaging adults, the research reviewed provided results that were inconsistent. Studies indicated that the application of an andragogical approach to teaching adults in university settings and training programs did not provide the anticipated results. However, research in the field of coaching parents of young children demonstrated that the application of andragogical principles was effective in enhancing parent-child interactions and helping parents support child learning and development.

Chapter Three: Methodology

Described in this chapter are the methods I used to explore the application of andragogical principles to real-time embedded coaching of parents when teaching their children with hearing loss to talk. Also, included in this chapter are a statement of the research questions, a description of the Moog Center for Deaf Education, a description of the population and justification of the sample size, as well as descriptions of recruitment procedures for obtaining research participants and participant confidentiality. This research study included qualitative data collected from a focus group of teachers and individual interviews of the parents and one grandparent of the children. Presented, as a narrative, is secondary data related to child outcomes in the area of vocabulary development. In addition, descriptions of the instruments used for data collection and analysis procedures are included in this chapter.

Research Questions

This study explored the application of andragogical principles to real-time embedded coaching of parents when teaching their children with hearing loss to talk. Following are the research questions investigated using qualitative methods:

RQ1. How do andragogical principles apply to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (a) What is the coach's experience when applying andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (b) What is the coachee's experience when the coach applies andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk?

RQ2. How, if at all, has the application of andragogical principles to real-time embedded parent coaching contributed to a change in spoken language outcomes of children with hearing loss in relation to receptive and expressive vocabulary development?

Data gathered during the focus group with the teachers addressed Research Question 1 and sub-question (a). The individual caregiver interviews provided data to answer Research Question 1 and sub-question (b). The comparison of children's spoken language outcomes, collected from secondary data on the MacArthur-Bates CDI (Fenson et al., 2007a) of children whose parents did not receive andragogical real-time embedded coaching to children of parents who did receive andragogical real-time embedded coaching, provided data to answer Research Question 2.

Location

The Moog Center for Deaf Education, established in 1996, is a private, non-profit school, serving children with hearing loss. At the time of this writing, the Center was located in Town and Country, Missouri, within the Parkway School District, in West St. Louis County. The Center was located on approximately five acres of land on the edge of a wooded suburban neighborhood. Annually, the Moog Center served an average of 65-to-70 children from birth to 3 years-of-age and their families in a home-based and/or center-based educational environment, an average of 40 school-aged students 3 years-of-age to 9 years-of-age in a center-based educational environment, and approximately 118 of its 220 alumni through audiology services (The Moog Center for Deaf Education, 2016b, p. 1).

The mission of the Moog Center was to teach children with hearing loss to talk and to teach others how to do it, too (The Moog Center for Dear Education, 2016a, p. 1). One focus of the program was to teach young children with hearing loss to talk and to learn the academic skills needed for successful participation in the regular education setting. The goal was for children with hearing loss to be able to compete academically and socially with their hearing age mates. Another focus of the program was on supporting parents in a manner that facilitated parent or caregiver interactions with their children. The Moog Center for Deaf Education had five main programs: The Family School, The Moog School, Teleschool, Audiology, and Outreach/Consulting (The Moog Center for Dear Education, 2012, p. 1). This study recruited participants from the Moog Center Family School program.

The Family School program at the Moog Center for Deaf Education began working with a family as soon as the family's child received a diagnosis of hearing loss. The Family School enrolled children from birth to three years-of-age, and their parents and/or primary caregiver/s, in educational programming referred to as parent support. During this critical time for learning, especially learning to talk, families were taught how to help their children learn to understand and use spoken English. The Moog Center Family School program utilized an approach referred to as real-time embedded coaching during parent-child sessions referred to as parent support sessions. Parent support sessions, scheduled at least once a month, for 30 minutes or 60 minutes, depending on the age of the child and the type of session, could take place in the family's home or at the Center (B. Brooks, personal experience, 2000).

Parent support sessions, scheduled for 60 minutes, occurred in the home and included a variety of activities, one of which was at least 20 minutes of real-time embedded coaching. Parent support sessions, for children who were younger than 18 months-of-age and not yet enrolled in the onsite Toddler Class occurred at the Center for 60 minutes or occurred for 30 minutes for children who were 18 months to 3 years-of-age and who attended the Toddler Class (B. Brooks, personal experience, 2000). This study took place during routine parent-child sessions at the Moog Center for Deaf Education and/or in the participants' homes.

Research Participants

The research participants in this study were caregivers of children with hearing loss and teachers employed at the Moog Center for Deaf Education. Secondary data included the MacArthur-Bates CDI: Words and Gestures (Fenson et al., 2007a) administered at the onset of the study period, as well as at the end of the six-month study period, in the form of a parent-teacher conversation. Additional secondary data included results from the MacArthur-Bates CDI (Fenson et al., 2007a) administered to children enrolled in the Toddler Class at the Moog Center for Deaf Education prior to the implementation of real-time embedded coaching or the application of andragogical principles during parent support sessions.

Five caregiver subjects, the mothers of four children and one maternal grandmother, participated in this study. The grandmother of one child participated in parent support sessions with her grandson, which included real-time embedded coaching, and she participated in an individual interview at the conclusion of the six-month study period, at the request of her daughter. At the time of consent to participate, the children

were between 10 months and 23 months-of-age. In all cases, the child with hearing loss was each adult participant's first child with hearing loss. This was also each adult's first experience participating in real-time embedded coaching.

Other study participants included five teachers of the deaf from the Moog Center for Deaf Education who were employed in the Family School program and who provided parent support sessions. Illustrated in Table 2 are the qualifications and certifications of these teachers. All of the teachers held Master's degrees and certifications in Deaf Education. All of the teachers involved in this study, employed in the Family School program at the Moog Center for Deaf Education, provided parent support for at least 15 years, and all were credentialed Early Intervention providers through the state of Missouri Early Intervention Program.

Table 2

Provider Qualifications and Certifications

Teacher	1	2	3	4	5
Teacher of the Deaf	X	X	X	X	X
Early Intervention Credentialed Provider	X	X	X	X	X
Elementary Education Certification	X		X		X
Listening and Spoken Language Specialist, Certified Auditory-Verbal Educator		X		X	X
Early Childhood Certification			X	X	
Behavior Disorders Certification					X
Learning Disabilities Certification					X

Three of the teachers held certifications in elementary education, three teachers were Certified LSLS, two held certification in Early Childhood Education, and one held certification in Behavior Disorders and Learning Disabilities. Although only two of the five teachers provided parent support to the families of children in this research study, all of the teacher participants provided parent support using real-time embedded coaching since the 2007-2008 academic year. The application of andragogical principles as a formal concept was introduced and subsequently embedded into the real-time embedded coaching technique at the time I began my doctoral studies in January 2012.

Sample Size and Selection Criteria

The sample size of this study was small, less than 10, due to the methodology of this study, the context in which this study occurred, and the specificity of the research population. There were a limited number of children diagnosed with hearing loss and enrolled in the Family School Program at the Moog Center for Deaf Education, where the practice of applying andragogical principles to real-time embedded coaching existed. At the time of this study, there were 39 independent schools in the United Stated providing spoken language instruction to children with hearing loss (M. deHahn, personal communication, 2016). Only a small number of these programs practiced real-time embedded coaching, and it is unknown whether those programs practiced the application of andragogical principles. I used a purposive sample, one in which researchers "use their judgment to select a sample that they believe, based on prior information, will provide the data they need" (Fraenkel, Wallen, & Hyun, 2015, p. 101).

The participants, recruited from the families with children 8 months to 30 months-of-age, who enrolled in the Family School Program at the Moog Center for Deaf

Education after the start of this research project, constituted the study population. Analysis of individual interviews with study participants and information gathered during a single focus group with teachers, who provided real-time embedded coaching with the application of andragogical principles, provided qualitative data in the form of emerging themes. All student participants (children with hearing loss) were the source of secondary data, along with data from students whose parents engaged in traditional coaching prior to the implementation of real-time embedded coaching and the application of andragogical principles. Secondary data were collected and described as a narrative. All study participants were fluent in English. No study participants were mentally disabled, nor did any study participants have difficulty giving informed consent.

Relationship to Participants

I did not have a relationship with the parent participants in the study. I was the initial point of contact for participants in order to introduce them to the services of the Moog Center for Deaf Education. This initial contact involved an approximately 15 to 45-minute phone call shortly after the family received the child's diagnosis of hearing loss. At that time, I introduced myself and invited the parents to tour the Moog Center. Subsequent to the phone conversations, the parents visited the Moog Center, at which time I met with them for approximately 45 to 90 minutes in order to provide a description of the services of the Moog Center and to introduce them to the Moog Center staff. I did not provide any ongoing services to study participants. Some participants spent time at the Moog Center when bringing their children to appointments or to the Toddler Class, at which times I may have engaged in informal conversations with them.

The Moog Center for Deaf Education employed the teachers who provided services to the parent participants. I directly supervised each of these teachers. All teacher participants had a long-standing relationship with me, of at least 15 years, and we had established mutual respect. All teacher participants had engaged in evaluations of their work, with me, during this more than 15-year period, in routine conversations and meetings. When real-time embedded coaching was introduced to these teacher participants, I spent approximately two years engaging in discussions with them in order to gain buy-in and ensure full understanding of the purposes and benefits of real-time embedded coaching. The introduction of andragogical principles evolved similarly, in that the teachers and I again engaged in dynamic discussions about the application of andragogical principles. By the onset of this study, all teacher participants stated understanding of andragogical principles and demonstrated the ability to implement such principles during parent coaching sessions.

Internal and External Validity

Fraenkel et al. (2015) wrote that internal validity "means that any relationship observed between two or more variables should be unambiguous as to what it means rather than being due to something else" (p. 167). A threat to internal validity was my bias that the application of andragogical principles to real-time embedded coaching enhanced parent support sessions. Another threat was my role as the Executive Director of the Moog Center for Deaf Education. I spent two years working with the teachers to encourage them and support them in implementing real-time embedded coaching. I then spent another 18 months educating them and encouraging them to include the application of andragogical principles to the real-time embedded coaching already in practice. As an

insider looking at practices that I instilled as part of the practice of the Moog Center for Deaf Education, there existed an inherent threat to the validity of this study.

Furthermore, in this position, not only was I the first point of contact for the parents who enrolled their children in the Family School program, but I was the ongoing supervisor of the teachers and audiologists providing service to those children. Parent participants may have provided responses to the interview questions to demonstrate their approval of the parent support sessions and the application of andragogical principles to real-time embedded coaching. Teacher participants may have responded to questions during the focus group in a manner that would influence my perception of their performance and/or increase my respect. Consequently, subject participants may have answered questions based on their beliefs of my desired outcomes or to gain my approval.

The Hawthorne Effect was another possible threat to internal validity of this study. The Hawthorne Effect occurs when subjects participating in a study perceive that they are recipients of special attention or feel that someone cares about them (Fraenkel et al., 2015, p. 175). This may have occurred in this study since I provided regular attention to the teacher subjects and had a long, more-than-15-year relationship, with all of them. The teachers in this research study engaged in numerous conversations about the application of andragogical principles to real-time embedded coaching during years recent to the study, and this ongoing practice may be considered a threat, as well.

External validity refers to the extent to which the results of an original study can be generalized and applied to other samples, and ultimately to the population from which the original sample came. A threat to external validity exists when there cannot be any

generalizability (Fraenkel et al., 2015). This study occurred in one specific private oral program for children with hearing loss and involved a specific group of teachers, all of whom had more than 15 years of experience working with children with hearing loss and their families.

The nature of qualitative study often depends on the researcher's perspective. All researchers have biases. In order to check their perceptions and to be certain that they are not misinformed or misinterpreting what they see and hear, researchers can use a variety of instruments to collect data, referred to as triangulation (Fraenkel et al., 2015, p. 456). In this study, I used a teacher focus group, parent interviews, and secondary data in the form of a vocabulary checklist as a means of triangulation.

Instrumentation and Data Collection

I used structured interviews with four parents and one grandparent, a focus group that included five teachers of the deaf from the Moog Center for Deaf Education who provided parent-coaching sessions while implementing real-time embedded coaching with the application of andragogical principles, and the MacArthur-Bates CDI (Fenson et al., 2007a) to gather data. The Moog Center for Deaf Education implemented real-time embedded coaching during parent support sessions for more than eight years, and included the application of andragogical principles to real-time embedded coaching since 2012. The MacArthur-Bates CDI (Fenson et al., 2007a) was used routinely at the Moog Center to track children's word count for more than 15 years. It was a checklist, designed to be completed by parents, which evaluated a child's early developing vocabulary and language and was normed on typically developing normal hearing children, aged birth to 30 months.

Prior to the onset of the study, I met with Moog Center teaching staff to review and educate them on andragogical principles they were to apply to real-time embedded coaching. This meeting was held in the conference room at the Moog Center where this staff often gathers for meetings and discussions. This meeting lasted approximately 90 minutes, and throughout, the Moog staff participated in lively discussion about the application of the andragogical principles. Moog staff provided examples of previous applications of andragogical principles allowing staff opportunities to comment, reflect, and provide suggestions for additional and/or improved application of the principles.

At the onset of the study period, and prior to participating in parent support sessions or real-time embedded coaching, the parent for each parent-child dyad completed the MacArthur-Bates CDI (Fenson et al., 2007a) on her child in conjunction with input from the teacher assigned to provide parent support. At the conclusion of the six-month coaching period parent participants engaged in an individual post-coaching experience in-person interview with me. In addition, parent participants completed the MacArthur-Bates CDI (Fenson et al., 2007a) on their children at the conclusion of the six-month study period, again with input from the teacher with whom the family was working.

Teachers of the deaf, who worked in the Family School at the Moog Center for Deaf Education, and who practiced real-time embedded coaching with the application of andragogical principles, participated in one focus group session conducted by me. I met with teacher participants at the Moog Center in the conference room at an agreed-upon time and asked a series of questions of the Moog Center staff. All teachers were

encouraged to participate and respond to all questions, as appropriate, during the focus group.

Secondary data, gathered on students whose parents did not participate in andragogical real-time embedded coaching, is described in the study. This data came in the form of the MacArthur-Bates CDI (Fenson et al., 2007a). The Moog Center for Deaf Education routinely uses the MacArthur-Bates CDI (Fenson et al., 2007a), as well as the recording of notes related to student vocabulary progress. The teacher of the deaf, who was the assigned service provider for the student, gathered this data. The results of the MacArthur-Bates CDI (Fenson et al., 2007a), for those children whose parents did not receive andragogical real-time embedded coaching, were included and described as a narrative.

Procedure

From July 2015 to November 2015, I identified five subjects for the study, four of whom were parents of children with hearing loss aged 10 months to 23 months-of-age, and one maternal grandmother who participated in parent support sessions on a regular basis. I met with each parent participant prior to the onset of the study period. I explained the research project to potential participants and answered questions during an in-person meeting. At that time, I explained the research project and gained informed consent from the four mothers who constituted these adult subjects/parents. Parents completed the MacArthur-Bates CDI (Fenson et al., 2007a) on their children, with input from the teachers assigned to their family, prior to the beginning of receiving services. One maternal grandmother was included, at the suggestion of her daughter, because the

grandmother participated in more parent support sessions than her daughter did. The grandmother provided informed consent prior to participating in the in-person interview.

Parent participants engaged in six months of face-to-face real-time embedded coaching with the application of andragogical principles provided by a teacher of the deaf at the Moog Center for Deaf Education. Real-time embedded coaching included four main components: joint planning, demonstration and/or return demonstration, reflection, and feedback (Rush & Shelden, 2011). Coaching sessions were typically at least 20 minutes; however, they may have lasted up to 45 minutes when they occurred as part of a home visit parent-child session.

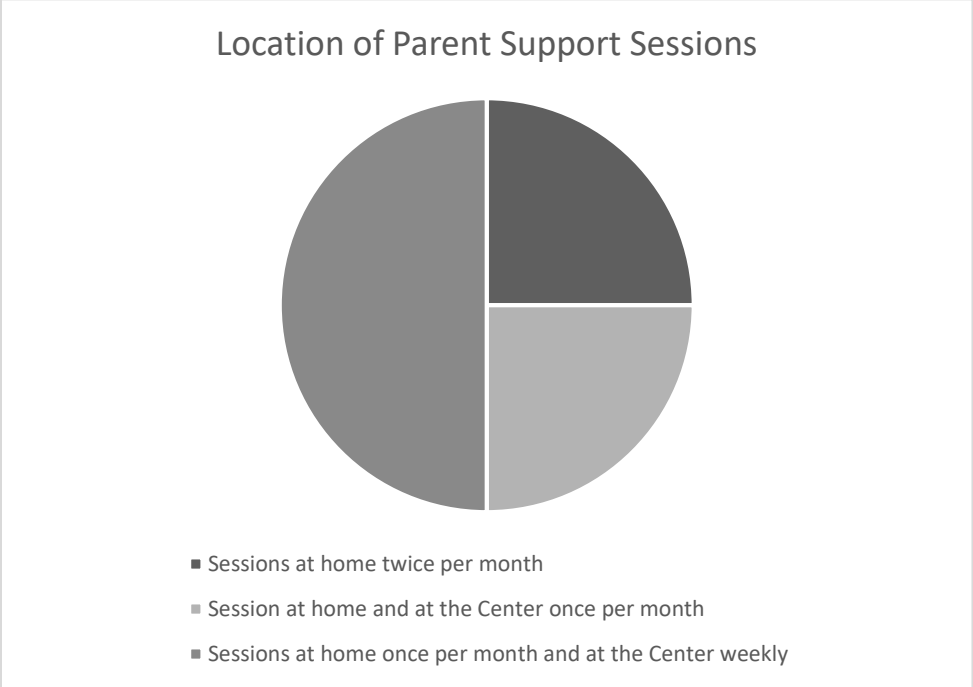

Figure 1: Location of parent support sessions.

For one child and her family, the coaching sessions, which were scheduled two times per month in the family's home throughout the study period and lasted at least 20 minutes each, were appropriate. For another of the study children, and his family, the sessions, scheduled one time per month in the home and one time per month at the

Center, were appropriate. The families of the two children already enrolled in the Toddler Class at the onset of the study period scheduled weekly sessions at the Center for 30 minutes and once a month in their homes for 60 minutes throughout the study period, as depicted in Figure 1. The number of sessions scheduled per month related directly to the child's age and enrollment in the Toddler Class, which was typical of all children enrolled in the Moog Center Family School program.

Table 3

Six Assumptions of Adult Learners

Assumptions of the Adult Learner	Andragogical	Application to Moog Real-Time Embedded Coaching
Need to Know the Reason for Learning Something	A reason that makes sense to the learner	Moog coach explains principles of real-time embedded coaching
Concept of the Learner	Increasingly self-directing	Parent becomes increasingly independent
Role of Learner's Experience	Rich resource for learning by self and others	Parent becomes a resource for her own learning and the learning of others
Readiness to Learn	Develops from life tasks and problems	Parent becomes increasingly able to stimulate language during routine daily activities
Orientation to Learning	Task or problem centered	Parent becomes increasingly able to stimulate language during all life activities
Motivation	By internal incentives, curiosity	Parent is increasingly internally motivated to provide language stimulation as child is responsive and demonstrates progress

Note. From Knowles (1984, 1995).

Prior to the onset of this study period, I met with the teachers who provided parent support during a group meeting scheduled for the specific purpose of reviewing and

explaining the study. I explained the research project to the potential teacher participants, answered their questions and gained informed consent from these adult subjects/teachers.

Table 4

Eight Process Elements of Adult Learners

Process Elements of Adult Learners	Andragogical	Application to Real-Time Embedded Coaching
Preparation of Learner	Gain insight and understanding of what is to come	Moog coach explains the coaching process
Setting the Climate	Relaxed, trusting, mutually respectful, informal, warm, collaborative, supportive	Moog coach establishes and maintains a supportive climate
Planning	Mutually by learner and facilitator	Joint planning by Moog coach and parent
Diagnosis of Needs	By mutual assessment	Joint planning by Moog coach and parent
Setting of Objectives	By mutual negotiation	Joint planning by Moog coach and parent
Design Learning Plans	Learning contracts, learning projects, sequenced by readiness	Joint planning by Moog coach and parent
Learning Activities	Inquiry projects, independent study, experiential techniques	Joint planning by Moog coach and parent
Evaluation	By learner-collected evidence validated by peers, facilitators, experts, criterion-referenced	Reflection by parent and feedback from Moog coach

Note. From Knowles (1984, 1995).

I met again with Moog Center teaching staff at a subsequent time to review the assumptions of adult learners and the processes of adult learners using andragogical principles when applied to real-time embedded coaching (see Tables 3 and 4) and to confirm each teacher understood the application of the andragogical principles to real-

time embedded coaching. Real-time embedded coaching was one component of a parent support session that typically lasted 60 minutes, when provided in the home. These sessions included some/all of these components: a summary of the child's progress since the last meeting, information provided to the parent about a topic related to hearing/hearing loss, direct child instruction/therapy, a demonstration of providing vocabulary and language stimulation during a daily routine activity, a coaching session, and/or a summary of the session, and questions. Parent support sessions, provided at the Center for those children not enrolled in the Toddler Class, were typically 45 to 60 minutes and included activities similar to the 60-minute sessions in the home. However, when parent support sessions provided at the Center were in conjunction with enrollment in the Toddler Class, the sessions were 30 minutes in length and the coaching sessions typically lasted at least 20 minutes.

At the initiation of each family's participation in the research study, parents completed the MacArthur-Bates CDI (Fenson et al., 2007a) to provide baseline information about their child's vocabulary skills at the onset of the study period. The teacher of the deaf, who was providing parent support sessions, explained the MacArthur-Bates CDI (Fenson et al., 2007a) to the parents at a parent support session and provided instructions related to the completion of the form. Parents completed the MacArthur-Bates CDI forms either during a parent support session with the assistance of the teacher of the deaf or at a separate time and returned the forms to the teacher of the deaf upon completion. These same parents completed the MacArthur-Bates CDI (Fenson et al., 2007a) again at the end of the six-month study period in order to measure growth related to their child's vocabulary skills over the study period. This vocabulary data, reported on

children with hearing loss whose parents received real-time embedded coaching with the application of andragogical principles, were compared to secondary data related to vocabulary data provided on children with hearing loss whose parents received traditional coaching and without the application of andragogical principles. These inventories provided information about vocabulary development for both groups.

At the conclusion of each caregiver participant's six-month coaching period, caregiver participants engaged in a post-coaching experience in-person interview with me (Appendix A). Caregiver interviews were conducted either in the conference room at the Moog Center or in the parent's home at an agreed-upon time convenient to the caregiver. The grandparent of one child was interviewed at the request of the child's mother.

At the conclusion of the six-month research study period, five teachers at the Moog Center for Deaf Education participated in a focus group conducted by me. At this time, the Moog Center staff responded to a series of questions (Appendix B). This focus group provided information about the teachers' perspectives about the application of andragogical principles to real-time embedded coaching.

Data Analysis

The primary data were analyzed using an inductive process. I conducted individual caregiver interviews at the end of the six-month study period. These interviews provided caregiver-participants' perspectives about the application of andragogical principles to real-time embedded coaching. I posed a series of seven primary questions to all caregiver participants. Interviews were approximately 45 to 60 minutes in length and were audio recorded on an iPad, transcribed, coded, and analyzed for emerging themes.

Teachers of the deaf at the Moog Center for Deaf Education, who were providing real-time embedded coaching with the application of andragogical principles, participated in a focus group conducted by me. I asked teachers a series of five primary questions. The focus group lasted approximately 45 minutes and was audio recorded on an iPad, transcribed, coded, and analyzed for emerging themes.

The five individual interviews and the focus group were audio-recorded on an iPad. I dedicated my attention to the focus group prior to beginning the analysis of the interviews. However, the process for developing categories and relationships was essentially the same for the data analysis for the focus group and the interviews. First, I listened to the audio recordings and wrote notes about categories and relationships related to emerging themes. Next, all of the audio-recordings were transcribed. Then, I read each transcription thoroughly while writing notes and memos about the data. I grouped the topics into categories by looking for relationships that connected the statements made by the focus group participants and the caregiver interviewees. The recurring thoughts, comments, and perceptions expressed by the participants became themes.

The MacArthur-Bates CDI (Fenson et al., 2007a), used to assess the single-word vocabulary development of the children in the study, provided a means to compare the language outcomes of the study participants' children and those children whose parents did not receive the application of andragogical principles during their parent support sessions. Each parent completed the MacArthur-Bates CDI (Fenson et al., 2007a) at the onset of the study and again at the end of the six-month study period in order to measure growth related to their child's vocabulary skills over the study period. This vocabulary data, reported on children with hearing loss whose parents received real-time embedded

coaching with the application of andragogical principles, were compared to secondary data related to vocabulary data provided on children with hearing loss whose parents received traditional coaching and without the application of andragogical principles. I have described as a narrative all secondary data gathered from the MacArthur-Bates CDI (Fenson et al., 2007a), as well as comparisons between collected data samples.

Summary

I used qualitative data to explore the experience of the application of andragogical principles on real-time embedded coaching of parents of children with hearing loss. The data provided perceptions of both the caregiver participants and the teachers, about the benefits and challenges of real-time embedded coaching with the application of andragogical principles. Secondary data, in the form of children's vocabulary data, described the progress children made when comparing those whose parents received real-time embedded coaching with the application of andragogical principles to those whose parents received coaching without the application of andragogical principles.

In Chapter Four, I provide the results of the study and evaluate the data collected from the parent and teacher participants in the form of individual parent interviews and a teacher focus group. The secondary data related to child vocabulary skills are presented as a narrative. I examined all available qualitative data, evaluated it for common themes, and presented it to the reader in an effort to respond to each of the research questions of this study.

Chapter Four: Results

The purpose of this study was to explore the application of andragogical principles to real-time embedded coaching of parents when teaching their children with hearing loss to talk. The research population included four mothers and one maternal grandmother of children with hearing loss who were engaged in parent support sessions using the application of andragogical principles to real-time embedded coaching, during face-to-face sessions. The children with hearing loss ranged from 10 months-of-age to 30 months-of-age. The research population also included five teachers of the deaf employed at the Moog Center for Deaf Education who provided real-time embedded coaching to parents of children with hearing loss from birth to 3 years-of-age. Secondary data included results from the MacArthur-Bates CDI (Fenson et al., 2007a) for the children of the parent participants who received real-time embedded coaching with the application of andragogical principles, and from children enrolled in the Moog Center Toddler Class whose parents received parent support prior to the implementation of real-time embedded coaching or the application of andragogical principles.

Research Questions

I investigated the following research questions for this qualitative study.

RQ1. How do andragogical principles apply to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (a) What is the coach's experience when applying andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (b) What is the coachee's experience when the coach applies andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk?

RQ2. How, if at all, has the application of andragogical principles to real-time embedded parent coaching contributed to a change in spoken language outcomes of children with hearing loss in relation to receptive and expressive vocabulary development?

The four mothers and one maternal grandmother, referred to as caregiver participants, participated in individual in-person interviews. These interviews, analyzed for emerging themes, constituted the caregiver participant data. The caregiver interviews included seven main questions and three sub-questions (Appendix A). Caregivers' responses provided during the individual interviews, related to their experiences as coachees, revealed the following themes: establishing a climate conducive to learning, readiness to learn/motivation to engage in coaching sessions, and the coaching experience.

Establishing a Climate Conducive to Learning

The caregivers who engaged in real-time embedded coaching with the application of andragogical techniques were the parents or grandparent of young children recently diagnosed with hearing loss. The families of these young children with hearing loss agreed to participate in this study within one month of their enrollment at the Moog Center for Deaf Education. All caregiver participants commented about the climate created by the teacher with whom they were working. Four patterns appeared within the emerging theme of Establishing a Climate Conducive to Learning, which included 1) Establishing a relationship, 2) mutual respect, 3) being non-judgmental, and 4) feeling supported.

Establishing a relationship. All caregiver participants referenced the importance of the relationship with their coach. Caregiver One's comments illustrated the significance of establishing a relationship with one's coach, in order to successfully participate in real-time embedded coaching sessions, when she said, "So much of the success of this for us has been the development of the relationship at the beginning. . . . A key factor for me was relationship building." She went on to explain:

> Establishing a relationship with Laurie was the first and most important thing. . . . As I got to trust her and know her, it was easier to receive input from her . . . . That relationship was really a key foundation for us in starting [the coaching].

Caregiver One explained how developing a relationship with the teacher provided opportunities for learning about other aspects of her child's development when she stated:

> [Developing a relationship] also allowed us to look at other things that Laurie was doing. So even if we had a question [about] something that was happening at home . . . it made me feel comfortable to come and talk to Laurie about that.

Building mutual respect. All caregivers referenced the concept of building mutual respect. One of the parents expressed that the teacher entered into the coaching relationship already demonstrating respect for her and that the teacher was working to establish trust that the parent would do what she needed her to do. Caregiver One said, "I felt respected and I absolutely respect her as a professional and as a person . . . . I absolutely felt that from the beginning." Caregiver Two commented:

> I think there is mutual respect. I respect her opinions as an expert. I view her as an expert, and I'm always open-minded to see the tips that she has for me. She

> returns that to me and respects my decisions as a parent and what I think is best for our family.

Caregiver Three stated:

> I think the respect was quickly established. I think within that first session that was probably there because she was able to explain what the goal and purpose of what we were going to be doing and then demonstrated it for the very first time we were with her.

She added, "It was in our own home, so it felt more comfortable to start. I think it's easier to build some respect than going to an unknown place. That was helpful to me." Caregiver Four remarked, "I definitely feel like she respected us, but she wasn't afraid to tell us [what to do]." Caregiver Five stated, "She didn't make me feel like she was the expert [or] that she was making me inferior at all. But, I did know that she was the expert."

***Being non-judgmental*.** Caregiver Five remarked, "She never made me feel like [I didn't] know what [I was] doing . . . . She was very praising." Caregiver One stated, **"**As I grew in [my] relationship with [my coach, I became] more authentic and transparent . . . [admitting] that we don't always have it all together. [It] became a little [easier] knowing that she cared about L also." Caregiver Two stated, "Mariana has always been very open with me and open to my opinions. . . . It's comfortable whenever we meet." She added, "She listens to my opinions. She's actually seen me cry. . . . I feel like she's empathetic and understands rather than somebody outside of the field or someone without children."

Feeling supported. Four of the caregivers commented about the support they received from the teacher with whom they were working. Caregiver Five commented about receiving positive support throughout an activity.

> [The coach] would say, "You're doing really good." Yeah, she did encourage me . . . and if I did things not right she would say, "Well, this would be a better way" and I would say, "Oh yeah, that makes sense." It was fun. A few times, I would do a few things and she would say, "Whoa, that was really good. That was a good way to do that." Like I said, if I do something she will say, "That was good. That was great." There's a lot of praise, [which] has made me feel more comfortable as time went on. She would be like, "You're really catching on," and I knew I was catching on.

Caregiver Three said, "I think [my coach] did a really good job when I sat there and . . . [didn't] really know what I [was] doing." She elaborated on how she felt supported when she explained:

> [My coach] would say, "Okay, What's your goal? What are you trying to get him to do? Are you trying to get him to repeat what you are saying? Are you trying to get him to say something spontaneously on his own?" . . . Each time [my son] did whatever goal we established in the beginning . . . she would [say], "There, see he's doing it. You're on the right track. Keep going." Or, [she would say], "Move on to the next one." If he wasn't doing what we were doing and I would [say], "He's not doing it!" [The coach] would [say], "It's okay. Just move on to the next thing. He's not [saying] that one word, but that's okay." She was very reassuring . . . Even when I didn't know if he was doing any of it [correctly], or

> he didn't want to participate, or was distracted, [the coach] was always able to point out there was something positive that happened.

Caregiver Five had her coaching sessions at the Center. She mentioned having the same experience as Caregiver Three when she explained:

> Whenever we first get there, . . . I would show [the coach] my [activity] and she would say, "Now, what is your goal?" She would always ask me what my goal was, and sometimes . . . I would [say], "I don't know what my goal is. I mean, I just want him to talk and to do it." So then she'd [ask] me, "Do you want him to say two words . . . to [say] a sentence?" [Then], I was like, "Oh, we are teaching him nouns and verbs." Maybe I would say, or she would say, "This would be a good goal." And I would be like, "Yeah, that's a good goal." So it was helpful because I really don't think I knew how to teach C how to do what he's doing.

In reference to ideas and suggestions provided by the coach, Caregiver Four stated, "[The coach] would reinforce [me] and [say], 'That's great!' . . . . She would say, 'Yes, that's perfect!'" She also referenced specific guidance the coach would provide during the activity and expressed conflicting feelings about receiving that instruction during the coaching session when she commented:

> It feels good, but then it makes you feel dumb like you don't know how much your child is really able to do and that you are enabling him. It does make you feel dumb that you are not pushing your child . . . . Also, sometimes it's really cool when she says he knows all of these words and shows you the entire list and you look at all of the words and . . . I didn't even know he knew that word.

Caregiver One elaborated on the influence her relationship with [her coach] had on her learning and how she felt supported, when she said:

> He wasn't just [any] kid . . . sitting in the chair at that moment. She genuinely knew him and cared about him. [She] knew us and cared about us as a family. . . . As the relationship grew, it just made learning a lot easier.

She further described her feelings of being supported when she remarked:

> We are in this together. We are doing this together. [Feeling supported] then leads to that ability to come back to the table the next time. We are doing this [together] as opposed to trying to do this [alone] and I can't ever get it right.

The depth of support was described by Caregiver One in these statements:

> I don't feel like the support ends when I walk out the door. [Laurie] seems to generally care when I tell her what L is doing outside of the classroom. I feel like the support is truly about L as a person, fellow human. That's a totally different experience than feeling like, well, the teacher did her job. It really felt like Laurie really cared about L as a person. I don't feel like the support ever ended in the [session], it was always throughout the week.

Caregiver Three agreed when she commented:

> I know when we first [started] she [said], "If there's anything, if you have any questions you can always send me a message or leave me a message and I will get back to you." She literally called me at 9 o'clock at night . . . which I didn't expect. I expected her to call me back during business hours the next day . . . so I feel like she has always been able to answer our questions quickly.

Caregiver Five confirmed the comments of others when she stated, "Anytime you needed a question answered she would come right out and tell us . . . She always tells us what she knows.

Readiness to Learn/Motivation to Engage in Coaching Sessions

There were several factors listed as the motivation for engaging in coaching sessions; however, the overriding reason stated by the caregivers was the well-being of their child. Caregiver Two commented, "Mostly the well-being of my child is what motivates me and also what keeps me open-minded to critique because if I am not doing something consistently or correctly then it doesn't benefit [my child] at home." Caregiver One stated:

> There were just little things that I didn't know . . . . Teaching children was something that I already knew, but . . . I didn't ever think about intentionally teaching certain language concepts. . . . There were things that I just didn't know . . . as well as concerns that I had about L and the speed in which he was learning . . . . For me, it was learning the little tricks that I didn't know, as well as the importance of talking all the time . . . . [Being reminded of] the importance of him hearing the words over and over again, as well as the reassurance that we are headed in the right direction.

Caregiver Three expressed her reason for engaging in the coaching sessions when she said, "I feel like we are doing something and it's helping . . . . Just seeing the progress [is motivation]." Caregiver Four remarked, "You want the best for your child and you want him to excel. . . . [We participate in the sessions] so that we are pushing him." Caregiver Five explained her motivation to attend sessions when she stated, "I do think that I am

learning different things, and I do think that it's good for C. . . . I look forward to Thursday. It's our teaching day." She continued, "I think that when I come I do come more to learn . . . . I want to learn exactly how I should do this [so] that when I go home I know how."

Experiencing Coaching

The coaching sessions at the Moog Center for Deaf Education consisted of four main components: joint planning, demonstration and/or return demonstration, reflection, and feedback. All families enrolled in the birth to three program participated in coaching sessions. Caregiver experiences of the coaching sessions varied, based on caregiver perspectives and caregiver engagement. Five patterns surfaced within the emerging theme of Experiencing Coaching, which included 1) caregiver responsibility and accountability, 2) collaboration, 3) assessment of learning, 4) benefits of real-time embedded coaching, and 5) challenges of real-time embedded coaching.

Four of the caregivers commented about engaging in the coaching sessions and how that experience felt and how it evolved. Caregiver Three remarked, "At first [the real-time embedded coaching] felt really awkward. [I was supposed to] play with [my] child and make it natural, but I had a goal in mind." She added, "We were playing and it was the things that we do everyday, [so] it wasn't supposed to be different, but at the same time [I] was like, 'Am I doing this right? Am I doing what she wanted me to do?'" Caregiver Five stated:

> At the beginning, I was very nervous, because of my own learning. It's hard for me . . . so I felt that I was on the spot. Laurie made me feel very comfortable. [She was] very non-threatening. I felt threatened because of my own insecurities,

> I guess. . . . It's scary and intimidating to me even today . . . . I'm getting better now that I know her and I am getting comfortable, so that's better. Now, I feel a lot more comfortable, I can just go in there and be myself and not be thinking that I'm on the spot.

Caregiver One stated:

> It was a learning experience to get into [the real-time embedded coaching] . . . expecting Laurie to give information in that moment. So that was new and . . . something I haven't done before. Being able to have [Laurie] interrupt what we were doing [during an activity] and suggest slight changes in what we were doing became easier as we went along . . . . I think the best way to say it is [to explain that] from the beginning of the process to [now] the types of suggestions [have] changed, which is hopefully because I learned more. The level of suggestions I got at the beginning were bigger changes, and now that we've been in it for a while, they're smaller. [The suggestions now are about] how I can add to what I'm [already] doing. [Since the coach knows] that I'm looking at where [my son] is and I'm actually looking at what words we're working on and how we can really reinforce that at home . . . then her suggestions [have become more] focused and she was able to make those suggestions quickly and more subtly than we did in the beginning.

Caregiver Two described her experience during an activity as, "[My coach] might give me tips on where to position the book and where to position R, or she might say that's how I would do it and point out [specific techniques]." Caregiver Three stated, "At first Laurie did some modeling of behavior so I had an idea of what she was trying to

teach me . . . . Then, as the sessions moved on she handed over more [to me and I] chose what to do."

Caregiver Three received services from a provider outside of the Moog Center who did not implement real-time embedded coaching with the application of andragogical prinicples so she was able to compare the two experiences. She stated:

> [The coach at Moog] would just every once in a while briefly model one thing or [say], "Try this" and then back out and let me do it. I didn't ever feel like she was taking over for me. We have a speech therapy educator that I do feel does [take over and] . . . I'll just watch. [Laurie] can see when I get stuck and helps prompt me on the next thing and then she will sit back and if I'm still stuck she might prompt me another time and then back up. Then, usually by [then] I can figure it out.

Caregiver Three summarized this coaching experience when she remarked, "It helped to have a goal and it was definitely useful to use things that were in our home."

Caregiver responsibility and accountability. Caregiver One mentioned the initial challenge she felt in being responsible for selecting the activity and the objectives for the coaching sessions. She expressed that sometimes the responsibility of selecting the activity seemed overwhelming, but that she recognized the benefit of doing that when she said:

> Bringing the toy from home, at first was a little [difficult] . . . . I'm still not sure exactly what to bring. . . . It's so much easier if someone just shows up, brings [the toy], you do the activity, and you go home. The reality is that you would never ever play with that toy again, so it may not have really been useful time.

> [Selecting a toy and] being able to say, "Okay, we play with this at home. How can we add more language to this?" I felt like me bringing something in . . . from home, that we would actually use [at home] and learn how to add more language to that over time [was beneficial]. . . . I was able to do that, as well as learning different ways to keep [my son] engaged.

Caregiver One also stated that her perception of being responsible for planning the activity and bringing the items needed for the activity changed overtime. She stated:

> At the beginning, it was kind of annoying because of the extra responsibility of thinking . . . about the language related to the toy. So to bring something [my son] wants to play with and to bring something with a purpose [was challenging] . . . . As I grasped the purpose of [playing with the toy with L outside of the session to reinforce the vocabulary and language] I totally appreciate it, but it is a challenge. It's one more thing to do, but it absolutely has a purpose.

Caregiver Three referenced feeling accountable when she explained:

> [The coach] would always let us pick our own thing that we were comfortable with. That way each session I [could] plan ahead and think, "Okay, I understand that last [activity] was too complicated there was too much going on in that activity so let's pick something more simple so I can come up with a simpler goal."

Caregiver Five remarked about how she prepared for the sessions ahead of time. She said:

> [The night before] I am just thinking maybe we will work on this or I want to see how this will go. I'll just pick something, and put it in my bag, and bring it.

> When we get there, I'll show [the coach] and then she'll ask me my goals. I've gotten to the point where . . . I find myself wanting to bring stuff that I feel [we] are going to be able to stick with [or that is] going to be fun for him. That's how I've been choosing.

***Collaboration*.** All of the caregivers mentioned collaboration, an andragogical technique presented as joint planning, as part of the coaching sessions. Caregiver Two described joint planning when she remarked:

> At the beginning of the session, Mariana asks me to give her information so she knows where R is so when she goes to coach during the session she has a good perspective of what's going to happen and what she should be expecting.

However, she added, "I don't feel like I am ever as much of the leader as [the coach] in what we are trying to accomplish." She continued by affirming the collaboration that occurred during joint planning when she explained:

> We always discuss what we want to do before we start. [If it is] something that I want help with, like how do I go for a walk with [R] and make that something where she can [be exposed to] language rather than me just being behind her . . . . [Mariana] might have multiple [suggestions] for me and then I can just pick and choose what works as long as I stay consistent with how I do it and [stay focused on] the goal.

Caregiver Four remarked, "She asks us to bring his toys . . . [and] she always asks what the goals are at the beginning." Caregiver Five stated:

> I always brought my toy and a lesson objective from home. That's [what] I was supposed to bring. Then, [the coach] would say, "This would be a good way to work with him with this." And, I would be like "Oh yeah, I can see that."

Caregiver Three commented,

> I think that [the sessions] were collaborative. I think that in the beginning, with our very first sessions, we were getting sort of an overall [perspective of] what we are looking for. [The coach] was modeling something most of the time and then having me try it, but in my own way. I didn't have to do exactly what she was doing. She was giving me examples of things to do.

Caregiver Two stated:

> [There's] definitely collaboration and it probably starts with me . . . sitting with Mariana on the floor . . . and [talking] about where [my child] is and what she knows and what we can expect. . . . Then, once she starts [an activity] we do it together . . . . We both sit here and do it.

Caregiver One described the collaboration between coach and coachee when she said:

> I never felt like it was just dictated to me how things [would go]. It was always a conversation . . . . Laurie was totally open to anything that we wanted to do. If we say this is something that we want to work on, that is what we work on. [Then] she adds to how we are doing language with whatever [activity] we are doing.

One child struggled with separation. His mother, Caregiver One, described the importance of collaborating with her coach due to the challenge of engaging her child in the coaching sessions. She said:

> She and I had to work together on how we do this in a way that he will actually sit in the chair and continue to work with us after he sees me. . . . She and I had to collaborate on how we are going to make this a functional time for him, instead of him screaming . . . . So, being able to talk to her about [what might work for my child emotionally] made it into a productive time for us.

Caregiver Four indicated that the sessions were collaborative, but stated, "[They] were definitely led by [the coach]." She explained, "If [the coach] came to our house then we would pick his favorite [activity]. . . . Sometimes we forgot when we were coming to the school. When she came here we picked whatever his favorite thing was." She explained the joint planning as:

> Usually at the beginning she asks, "What is your goal?" . . . . And, then she would always say, "Why don't we try to take it a step further?" . . . . So, she always would ask us what we wanted and then say, "Why don't we try and add one more element to it?" . . . . She would always try to make us take it one more step further.

Assessment of learning. Four of the five caregivers mentioned assessment of learning, an andragogical technique presented in the context of coaching as reflection and feedback, as part of the coaching sessions. Caregiver One stated:

> Laurie always tried to [assess my learning and L's progress] at the end of the session. She always took a few minutes at the end to talk about what we had done. [We talked about] what we did during the session, anything we did address during the session she would talk about it [again]. Typically, [she would review

by saying], “This is what we did. This is how you changed it. Did you see how this was better?” Or, we would talk about, “Okay next time let’s look at this.” Caregiver Three reported, “Usually we would end the [activity] portion and we would . . . debrief what happened. [We talked about] what went well and what our goal for next time would be.” She continued, “We always reflect back on the goal we set in the beginning [of the session] and [talk about whether I felt] he was meeting that goal, or making progress toward that goal in some way.” Caregiver Four stated that the assessment of learning was typically about the child. She commented, “[We talk about] what he’s learning or ways to help him learn.”

The importance of assessing one’s learning through reflection and feedback at the end of the session was noted by two of the caregivers. One parent said, “I think it encourages me to have confidence to continue [working with my child] at home.” Another comment was, “It leads to that teamwork feeling that helps us to want to come back.” Caregiver Two did not comment about reflection or feedback. She stated, “I don’t know if I can expand upon that. It’s just so informal I think I might miss it if [we] do it.”

Another aspect of assessing one’s learning was described by some caregivers as their expectation to share what transpired during a coaching session with their spouse and other family members. Caregiver One stated, “I was supposed to go home and tell his dad . . . and tell his brother and sister, ‘This is what we did and this is why we are doing it,’ so that they would do the same things.” Caregiver Two described her perspective of assessing her learning when she expressed:

[The] assessment [of my learning] is based on me relaying what happened that day to my husband and other family members, [and my] explaining what we did

> and how we can work together to make sure we keep doing the same things to help the development of [R's] language.

Caregiver One acknowledged that summarizing the session at the end was helpful to her. She said:

> I think in the midst of focused time with a toddler it can be a little stressful when you have a goal of doing [specific] things, especially when somebody is coaching you as you are doing it. That's not [the] typical relational set-up, so it can be a little stressful. Having time at the end takes that stress out of it.

One parent noted, "The reflection was always two-way. It was never just Laurie telling me. It was us discussing [the session] together."

Benefits of real-time embedded coaching. All of the caregiver participants agreed benefits to participating in real-time embedded coaching with the application of andragogical techniques existed. Caregiver One described her experience being coached in real-time.

> I think being able to change [what I was doing] in that moment and then see the results right away is huge. To be able to hear the input, implement the input, and see the results, just makes you want to do that more frequently. I think as humans we want to do what we know works, and when we don't know what works we are a little wary to move forward on that, or to receive suggestions. But, to be able to have input, implement that input, and see the positive result right way, it just naturally makes you want to do that again.

Caregiver Two stated, "I think [the real-time embedded coaching] makes a difference . . . . I think that this set up is helpful to keep me accountable and keep me engaged,

[especially] helping me develop [my daughter's] speech." She added, "I do think that this has all been helpful having the [coaching] sessions because even as a first-time parent without a kid with a hearing issue it would be helpful. I think it sped up her language [development]." Caregiver Five remarked, "I feel like in the beginning [the coaching sessions were] especially [meaningful] because I could see how it really was working and how it was helping us at home and how he should do things." She added, "It's taught us what to do at home and we learned what C is [able to do]. I guess if we never had the sessions we wouldn't know how he was doing." Caregiver Two also commented, "Even after [Mariana] is gone if I'm applying some of the things [she explained during the session then] seeing [R] learn from what I've been taught is beneficial." This same caregiver continued by explaining that having Mariana provide ideas and suggestions for stimulating her child's language has:

> [kept] me thinking about [her language] and working on it. I [know that] I need to be talking to her all the time and I need to be doing these things to help her . . . My goals for her are probably higher [than for another person].

Prior to enrolling in the birth to three program at the Moog Center for Deaf Education, Caregiver Two had experienced being coached by a professional who did not use real-time embedded coaching. She compared the experiences when she explained:

> The benefit is getting feedback right away. . . . As far as trusting her knowledge . . . before I don't think I had that. The teacher that I worked with I didn't have the same respect for her as I do for my current teacher. [She] was a new person completely, it was totally different, and Mariana's experience makes a big difference for us.

Caregiver Three commented on her similar experience with a provider who did not employ real-time embedded coaching. She clarified, "[Real-time embedded coaching] is more participatory for me. I'm feeling like I'm a participant whereas in the other style I am just the observer. There is much more observation in the other style." She continued:

> Because we are not participating, we just sit back and [the provider] does [her] thing and we are checking our phones and doing whatever. We are not engaged at all . . . . You almost feel like if you do try to help that you're sort of getting in the way of what's going on. She's very clearly got a goal, but I don't always know what that goal is.

Caregiver Three concluded, "My husband has brought up [whether or not] we really even want to continue both because the other one wasn't really providing us with that much." Caregiver Four stated:

> I do think [participating in the coaching sessions] is beneficial. I just wish that it could be more consistent . . . . Sometimes [it's] hard to understand [what C can do], but when you are actually having the face time with [the coach] and she is really showing you . . . [then] you understand.

Challenges of real-time embedded coaching. Four of the five caregivers remarked on the challenges of engaging in real-time embedded coaching, referring to it as awkward and anxiety-producing. Caregiver Two remarked, "I could see if you don't have an open mind there would be a lot of challenges." She continued, "Since it's not about me and my ego or anything like that . . . it's about the benefit [to] my child, I could see people having challenges, but I don't." Caregiver Three agreed:

> I think the biggest challenge in the beginning is getting over that anxiety. Every session might be a little awkward in the beginning to [ask for help]. [I know] I want to use this [particular] toy, [but I need help understanding the goal] with this toy. [I need help understanding how] to get him to do something different than before.

Caregiver Five stated, "If I don't know what I am going to do that day or have a plan . . . then I feel anxious." Caregiver One described her perspective of the challenges of real-time embedded coaching.

> I think that [real-time embedded coaching] is very abnormal from the way we are used to functioning, and so it feels very abnormal. In the beginning it feels, I'm not even sure what the right word is, obtrusive, which is why I think the relationship building is important. When someone who is a stranger is obtrusive, it is totally different than when someone you know cares is obtrusive. So the challenge was [that] in the beginning it did feel obtrusive and abnormal, and for some it might even seem insulting. [A parent may feel that] this is my kid I should know how to talk to my kid. [It is] the abnormality of [the real-time embedded coaching with the application of andragogical techniques] compared to how we normally function in our culture.

Caregiver One summarized the coaching experience when she remarked:

> So much of our life is relational and getting people to do things. It's about how you make them feel. Getting someone to feel comfortable in that context [of real-time embedded coaching] is tricky because . . . it is such an abnormal context in

> our culture. Laurie did a good job of enabling us to feel comfortable. . . . So it worked.

Caregiver Four remarked that scheduling sessions was a challenge. She stated, "Some of our sessions have been a little bit limited on the actual coaching . . . because of time." She confirmed that she is not engaging in coaching during all of her sessions, and commented, "My mom does do them once a week." She added, "It's all rushed lately. It's very rushed." She stated, "We want to come in and be as involved as we can, but I guess it's just hard with our schedules." She continued:

> It's really hard though with time. If I were a stay at home mom it would be so much easier to come every Thursday, do [the sessions], and be more involved. And, with her having to come out to our house as well . . . [it's a challenge] finding a time when we can both meet. It's very hard. I do wish that I was a stay at home mom or I could come up to the school more often, but you know I just can't do that.

Caregiver Five agreed that scheduling the sessions could be a challenge. Caregiver Four expressed her perspective of the challenge in receiving feedback during the sessions when she remarked, "The bad I would say [is] hearing sometimes that I don't know how to be a good parent." She added:

> Even when she can just redirect him so easily, [it makes me feel bad]. [There are times when] I'm having a hard time and he's throwing a fit and she's just like, "Ah, ah, ah, no," then it's really cool, but [I wonder] "How did you do that?" So, it's a benefit [that she can demonstrate how to get him to behave], but also a con. It's like he acts so much nicer for [her].

Caregiver Four concluded, “Even though sometimes it’s hard to hear that you are not doing the right thing it is good to know what the right thing is.”

Caregiver responses during the in-person interviews provided information about the application of andragogical principles to real-time embedded coaching designed to help caregiver coachees help their children with hearing loss learn to talk. All of the interviewees agreed that establishing a climate conducive to learning, including establishing a relationship with the coach, developing mutual respect, interacting with a non-judgmental coach, and feeling supported were important to a successful experience. The dominant factor caregivers stated as their motivation to engage in coaching sessions was the well-being of their children. Caregiver comments about the coaching experience indicated that all participants perceived the coaching sessions to be beneficial to their learning and the learning of their child.

The five teachers of the deaf at the Moog Center for Deaf Education who implemented real-time embedded coaching with the application of andragogical principles participated in a focus group. This focus group, analyzed for emerging themes, constituted the teacher participant data. The focus group included five main questions (Appendix B). Teachers’ comments provided during the focus group, related to their experiences as coaches, revealed the following emerging themes: 1) changes to the implementation of providing coaching, 2) teachers’ perceptions of their roles as coaches, 3) changes in teacher attitudes, and 4) changes in caregiver behavior.

Changes to the Implementation of Coaching

The teachers in the Family School Program at the Moog Center for Deaf Education provided coaching to caregivers of children birth to 3 years-of-age for more

than 15 years. However, the implementation of real-time embedded coaching and the application of andragogical principles was new and different. The five teacher participants agreed that several components of the coaching experience changed. Prior to the application of andragogical principles, teachers selected the activities and brought the necessary toys and materials to the caregiver-child sessions. Additionally, teachers selected the goals and outcomes for each caregiver-child activity and explained the expectations of their plans prior to the onset of an activity. One teacher explained the necessity of change when she stated:

> Since we were bringing the toys . . . sometimes [the parents] didn't have that toy at home or they didn't play [the way we were showing them or suggesting] with their child . . . . They never told us because we were telling them, "This is what you should be doing." They would never try . . . . Also some parents were buying [the toys] . . . . They would go and try to buy the same toys we were bringing, but that's not the idea. . . . It's what [the parents] do with [their children] at home and what's natural for [them]. [It's] how [they] like to play with [their children that's important]. And, then [trying] to help [the parents] use language and promote language through that frame.

Two other teachers added, "We would bring toys that were maybe too big that they weren't going to buy or get if they didn't have one." "They couldn't duplicate [the activity or] the process. A fourth teacher stated:

> We had the toy, we [told] them what to do, then as soon as they weren't doing it exactly how we told them to do [it] we were jumping in and . . . taking over.

> Now we're not doing that [and instead] we are [providing] positive feedback. We are giving them [positive feedback] now.

"[We were] jumping in and being like 'No, no, no hold it this way. Don't do that!' And now it's more like, 'Well, what are you going to do? How would you manage their behavior in this situation?'"

"Now we have turned the tables and just started helping [the parents use language when engaging in activities with their child]." "I never asked them what they were doing before. I just said, 'This is what we are going to do. Do it this way.'"

> If we go back to our original meeting, there was a discussion about [not taking] toys anymore . . . . [Betsy explained to us] we need to get these parents . . . these families to be responsible for having something to do. If you have to help them a little bit, like having a discussion . . . preplanning, that's fine . . . joint planning . . . but they have to do it. Stop taking toys to the home.

The mandate for the teachers to discontinue bringing toys to the sessions or planning activities for the caregivers resulted in changing the format of the sessions, whether in the home or at the center.

> I always started out with some kind of demonstration . . . . Now I start out with more of a discussion about what they think they should do with that toy. Together we talk about how we could incorporate [what we are currently working on] into whatever activity they have brought with them.

"[The parents] became responsible for figuring out what to do with the toy or book."

"We've developed more [as] a team. . . . Whereas, before I think we almost had this hierarchy where we were up here."

> I think all of us . . . would have said what [the parents] are [going to do] and then we would have told them what to do next. Versus now they're telling [us] what they are doing and then [we] are . . . guiding them to figure it out on their own. [Guiding them to determine] what should happen next, which we never did before. We never gave much opportunity for guidance.

One teacher expressed how the expectations of the parent support sessions are different now when she stated. "We set them up differently to start. I say, 'Here are the expectations for parent support. What are your expectations? These are my expectations. . . . I think we set it up differently." The other teachers agreed. "We do set it up differently." "We are sure they bring something." "Well, there was a time [during the parent support sessions at the Center when] they didn't bring the child in because I remember Betsy in a meeting saying, 'Are any of you bringing the children in?'" "And everyone looked at the floor. That went on for about two years."

The teachers stated that challenges existed in conjunction with the implementation of real-time embedded coaching. The teachers found making suggestions within the context of the activity and providing positive feedback challenging at first. One teacher commented, "It was hard to find ways of saying what I had to say, keeping it short. . . . That was hard for me . . . like finding the right way of saying it." Another teacher continued, "And [being] short and concise."

> When the switch happened . . . I actually sat across the room for a while because I would jump in too much, and . . . offer suggestions. I would take over . . . for me it meant that this was going to be hard for me. . . . It was hard."

"Another challenge is not interfering too much when you are trying to get them to tell you what their goal might be [and] not telling them what the goal should be . . . . [Knowing] how to guide them at first [is challenging]." "I think the old way I used to tell them what the goal was, which I think we all did."

One teacher shared her emotional perspective when she commented, "Even from the beginning I felt good about it." Other teachers continued along that same line of thinking. "I think it was not fair to [the parents] to not include them as much, now that I think about. It's much better that they contribute." "It just seems more natural . . . than what was happening before." "It's a lot more natural" and "less structured."

Teachers' Perceptions of Their Roles as Coaches

The five teachers who provided real-time embedded coaching with the application of andragogical principles were the same teachers who provided coaching sessions prior to the implementation of these processes and techniques. These teachers described how they viewed their roles as coaches during traditional coaching sessions without the application of andragogical techniques versus sessions that implemented real-time embedded coaching with the application of andragogical techniques, and how they believed the caregivers perceived the teachers' roles in both situations. Two patterns appeared within the emerging theme of Teachers' Perceptions of Their Roles as Coaches, which included 1) teachers as experts and 2) changing attitudes about teaching adults.

***Teachers as experts*.** The teachers agreed they viewed themselves as experts and they perceived the caregivers also viewed them as experts. One teacher expressed the feelings of the group when she commented:

> I think [the parents] used to look at [me] as the one who knew how to do it . . . . There was something really special about the way [I was] doing it. They were very happy to just sit back and let me do all the work. So they would come to parent [education], happily, and they would sit there and smile and they would want me to show off what I could get their child to do. They were afraid to jump in and try and a lot of them were just very comfortable [saying], "Okay, show me."

"[The parents] would bring something and be like, 'I don't know how to do this.' So it's like, 'Oh, let me show you.'" One teacher expressed her perspective of her role as the expert when she stated:

> One of the big things that I feel helped me . . . is when we went from [labeling the sessions] parent education to parent support. There's a whole different meaning when we call it support versus education because I think for me it was us looking down on them like they needed to be taught. They needed to learn. They already know a lot of stuff because they're the parents. They know more about their kid than we do.

The same teacher added a comment about her perception of the caregivers feeling judged when she said:

> They were way more nervous [before we applied andragogical principles] because they thought they were going to do something wrong . . . like we were judging rather than coaching. [I'd say,] "This is how you do it." And she'd be like, "Did I say it right? Did I move the toy right?"

Two teachers followed with statements. "They were being judged and now they're not." "[Now, the parents feel] there's no judgment or testing." Comments from another teacher referred to the caregivers' knowledge. "They didn't know how [to select a toy and provide appropriate vocabulary and language stimulation]. How could they possibly know how?" Another teacher said, "I think we didn't give them enough credit."

***Attitudes about teaching adults*.** The change in coaching technique occurred when the teachers' attitudes about themselves and their ability to teach the caregivers also changed. One teacher expressed this when she commented:

> I think we didn't know how to help [the parents teach their children to talk], so it was just a comfort level for us, too. We knew how to do it, and they weren't comfortable trying yet. I think we were not comfortable teaching other adults. I think we were very comfortable teaching children and so it was easier for us to teach the child than to try to teach the parent . . . . I remember [at] the beginning when [Betsy] said, 'We need to do this,' [and] everybody looked down at their shoes. I think once we got over that fear of can we really teach the parents, and can we make a difference, then I think . . . we empowered the parents. We felt good about what we were doing, and then it all snowballed.

The same teacher continued to express the feelings of the group when she said:

> It was a big hump to get over for us, to believe that we could be teaching another adult. Even though we taught student teachers, we just thought they have a background in what we're doing [and the parents do not]. . . . The hardest part . . . was having the confidence to tell the parents that they were going to be in charge, and letting go because I like to be in charge.

Two other teachers further reiterated this perspective. One added, "[We] had to believe that [we] were capable, and that [the parents] could do it." The other said, "I had to develop the confidence to [make suggestions to guide the parents].

One teacher expressed the changed perspective of the group when she commented, "What [the parents] are doing at home is just as important, if not more important, [as] what we are doing [when we are with their children]. The teachers' comments referring to their roles as coaches adds to this sentiment. The teachers' descriptions of caregiver behavior prior to the application of andragogical principles explains the change in caregiver behavior.

Changes in Teachers' Attitudes

The full implementation of real-time embedded coaching took about two years. Then, it took additional time to include the application of some of the andragogical principles. Although the teachers began applying andragogical principles with the onset of real-time embedded coaching, it took some time to include all of the techniques. In order to implement new techniques effectively when providing parent support, the teachers' attitudes toward the caregivers also had to change. Two patterns surfaced within the emerging theme of Changes in Teachers' Attitudes, which included 1) establishing a climate conducive to learning and 2) developing a trust of the learner.

***Establishing a climate conducive to learning*.** Establishing a climate conducive to learning referred to both the physical climate and the emotional climate. The teachers did not comment about the physical climate or the need to be comfortable in a particular space. One person's comment about creating a safe and comfortable emotional climate represented comments from the group as a whole. "By creating that [supportive] climate,

and saying, ‘We’re here to help you,’ we’re empowering them, and then we are creating this respect.”

The teachers described some of the challenges they experienced creating a climate conducive to learning when they talked about caregivers who were hesitant to engage in the parent support sessions. “There are some parents who [don’t want to participate] . . . I think somehow, I’ve not given that person the confidence to want to try.” “Some parents latched on to this idea and some parents were just like, ‘I want no part of it.’” “I . . . have . . . people that would still rather try to make me do it.” One teacher explained that, “It’s a family that I only see once a month, so I don’t have as many opportunities to coach them.”

A technique used in real-time embedded coaching was providing positive feedback.

> I think what everybody is saying is one of the most important things that we do is be positive and not make a big deal about what they are not doing because you can just watch them sit up a little bit straighter and say, ‘Wow, that’s really good.’ Or, when you point out at the end of the session all of the good things that they did and they learn to grow.

One component of real-time embedded coaching was reflection and feedback. “I think that the reflection piece is a huge piece of [creating a positive climate].” “That reflection piece is probably helping to build their confidence.” “They are seeing the positive on their own.” Another teacher agreed when she said, “I think that the reflection piece is a huge piece of it because [the parent might comment about what didn’t go well] and [I can] go on about the positive things that happened.” A third teacher provided the

example, “Say [the parents] were thinking, ‘Oh that was terrible.’ [But], then you are saying, ‘No look at this and this and this. This is all great. It’s made them feel good, so they want to try again.’”

Developing a trust of the learner. The application of andragogical principles led to changed attitudes within the teachers. The teachers conveyed that to effectively implement real-time embedded coaching they had to learn to trust that the caregivers could take an active role in the parent support sessions and successfully help their children. “I didn’t think [the parents] could do it, and I didn’t have the confidence that I could help them do it successfully.” One teacher explained the consensus of the group when she shared:

> Once I got over that fear of letting them be in charge, then I think it was amazingly easy to find things to compliment them about . . . . I was surprised that it was so obvious the things that they were doing well, that they had no idea that they were doing well. I think [supporting them] came pretty easily. And, once you see them smiling then it reinforces you, so that you want to keep doing more.

Another teacher expressed the challenge of trusting the caregiver’s success when she stated, “I think I still find that with new parents they don’t know what they should be doing.” The previous teacher followed the comment with:

> I think I feel badly when they can’t come up with [the correct language]. You gotta let go of that. [The parents] can’t come up with that because they don’t know. So that’s my job to step in and help them and help them a little bit at a time. And maybe next time will be better, and the next time a little bit better. I think we set the bar very high for ourselves and if they don’t have the answer we

> shouldn't view that as we have failed. We should view that as . . . [the place] where we need to start, and this is where we will work toward. But, that is a scary moment when they don't say anything.

In describing the teachers' abilities to trust the caregivers to take responsibility for planning activities and bringing the materials, the teachers expressed the conundrum that was created by their planning the activities and bringing the toys. Their actions created a challenging situation for the caregivers and was expressed by a question asked by one teacher, "Why [would the parents] even bother to practice what we just did, when [we] are going to bring something different [the] next time?"

Changes in Caregiver Behavior

The implementation of real-time embedded coaching led to observable changes in caregiver behavior as reported by the teachers. The teachers expressed that the caregivers were more willing to engage in the parent support coaching sessions and were more participatory during the caregiver-child activities than caregivers who did not participate in real-time embedded coaching with the application of andragogical principles. Three patterns surfaced within the emerging theme Changes in Caregiver Behavior that included, 1) caregiver responsibility and accountability, 2) demonstrating a readiness to learn, and 3) feeling empowered.

Caregiver responsibility and accountability. One change that the teachers observed with the implementation of real-time embedded coaching and the application of andragogical principles was the increase in caregiver accountability. "They've taken ownership of [helping their child] a little bit more, and they feel comfortable." "I think that they feel responsible for making it happen . . . . I think that they have ownership over

some of the education for the baby." Other teachers concurred. "I would say the same." "They didn't [feel responsible or take ownership] before because . . . [we] were telling them what to do." "They put it all on us."

Another change that the teachers noted was the caregivers' ability to make decisions about what activities to do with their children and the language skills on which they would focus.

> Instead of waiting for me to tell them what to do, they started thinking on their own about what kinds of language they could use with that activity and how that related to what they were hearing their child say at home.

"I agree with that and I think it made them try to start [using strategies for improving their child's language] around other parts of the day, rather than just the part when they were coming to [a] session." One teacher commented that, "Instead of being really passive and sitting, now [the parents] are being more active and participating." Another teacher added, "Before they were more observers than participators."

> They [started] using more options, like [bringing] two toys. They realize that . . . some things are not going to work, or they aren't going to go as planned, or things are not happening like they thought they would, and they're thinking [ahead], so they bring two or three options.

Another teacher compared the level of caregiver responsibility for the child's learning before the application of andragogical principles to caregiver accountability with the application of andragogical principles when she said:

> Remember when [the mom] brought a dinosaur and said, "I don't know how to play with it?" I came up with some way of playing and then I said, "Okay, now

> it's your turn." And she just imitated what I just had done, instead of planning together . . . Well, today what happened was the family brought a toy and . . . said, 'I noticed that you were working on 'to' . . . so I brought . . . a book that has vehicles and maps [to practice], "I am driving to" She just thought of that because I had been working on it.

In reference to working with the caregivers prior to the implementation of real-time embedded coaching with the application of andragogical principles one teacher commented, "Instead of making [the parents] responsible, [we allowed them to] bring something new [each] time versus go home and [practice], come back, and do it again. That did start happening [when we changed our coaching approach]."

***Demonstrating a readiness to learn*.** Teachers remarked that since the implementation of real-time embedded coaching with the application of andragogical principles the caregivers appeared more focused on their own learning and came to the sessions more prepared to engage in learning. "I've noticed that . . . if they don't have confidence [to try something on their own] they are not afraid to ask. They seem . . . much more comfortable to ask questions . . . . So, they're not afraid to ask, instead of just blundering through it." "I think they are a little bit more curious . . . and they're not as intimidated . . . to ask [questions], as opposed to way back when [the parents] would just sit back [and let us be in charge of the session]. One teacher described her observation of caregiver engagement in the learning process when she stated:

> I think the parents are reading the notes [sent home from the center-based Toddler Class] more because I've had a couple of different parents say, "Oh, I've noticed you've been working on" or "You wrote on the note . . . so I thought we could

> [practice] it with this." So they're . . . doing their homework before they show up, too.

Another teacher confirmed the caregivers' readiness to learn, adding, "It's easier now because I think they sort of have a handle on what they want to work on because they are reading the notes." However, one teacher did mention a caregiver who did not present with a readiness to learn. She explained:

> She's not ready to learn what I have to say. . . . She doesn't believe what I'm [saying]. . . . She doesn't think that he should be talking yet, so she's not ready [to encourage him to talk]. . . . So, I think she's not ready to learn.

These comments were followed by another teacher who said:

> So, that's when it doesn't work. It's not effective if you're coming to the session assuming that all of these [andragogical] principles are in place and [the parents] show up and one of [the principles] isn't in place, then it can't be effective because they aren't coming to the situation with the same expectation that you were . . . . They're just not ready. It's like they are emotionally not ready. It's just emotionally they're not in a place to say, "I need to learn this." And, so it can't be effective.

Another teacher added the comment, "Adults will learn only what they feel they need to learn." Another added, "I think it's wrong to say they don't want to learn . . . . The truth is . . . they don't know that they are supposed to want to learn." Her comment was followed by a third teacher saying, "We now have enough experience that we feel comfortable . . . in these situations and we believe . . . the adults want to be there. And I think we start off slowly and do what we can do to make them feel comfortable."

> If the parents don't present as wanting to learn, and they don't think there is something to learn, [then] they are not willing to engage because they don't [think they] need to learn by doing. But it's certainly the minority.

Teachers commented that prior to the implementation of real-time embedded coaching with the application of andragogical principles caregivers were not expected to bring a toy or an activity to the parent support session. This was explained in an exchange of comments during conversation among the teachers. "Bringing the toy and telling them what they were going to do was almost counter to developing their readiness to learn." "They had no opportunity to practice ahead of time." "They couldn't practice . . . . [They] didn't have that [toy]." "That would be more intimidating than what we are asking them to do now."

> Think about how counter that would be to empowering them to be able to do the activity. We would just show up, and we would bring the toy, and we would say, "And now you should . . . do x, y, and z with it," but they have five seconds [to figure out the language and the activity.]" You can't be bringing the toy in, because there is no way for the parent to prepare for any of it if we bring the toy in. And, then we thought giving a demonstration and passing [the activity] over [to the parent] was the way to do it. But the truth is, you can't be doing that. No, that is really horrible.

One teacher summarized the caregiver experience before the implementation of real-time embedded coaching with the application of andragogical principles when she said, "We threw them on their butts." Followed by another teacher stating, "That was pretty mean of us."

Feeling empowered. The implementation of real-time embedded coaching with the application of andragogical principles increased caregiver confidence and developed a sense of empowerment as observed by the teachers. One teacher explained helping the caregivers move toward independence when she stated, "It's a combination of [the parents] using what they know about their child's language and [the teacher] adding something new that [she has] been working on in therapy." Another teacher agreed when she remarked, "I think there is more of a confidence level among all the parents that . . . they're feeling like they can do this." Additional teacher comments further reiterated this idea:

> You said before that [the parents are] more confident [now]. That confidence just kept building and building and so what happens now is they don't look at us very often [to tell them what to do] and we are able to just add little comments to tweak what they are doing. They feel much better about what they are doing than they ever did before. I think when we were [demonstrating] all the time they were afraid to try.

"I think [the embedded coaching] also in a way empowers them. They have [more] confidence or something. It carries over [to other activities]."

> [The parents] don't look at us [as] much [when it] isn't going well, or the child isn't doing what [he is] supposed to be doing. They . . . try to work it out. I was at our little friend's house but [his] mom never looked at me, like fix this.

The caregivers' positive sense of self and feeling of empowerment was mentioned by three of the teachers. One teacher explained her perspective when she stated, "One of my parents said, 'You always tell me [I] look like a pro.'" She continued by explaining that

a mother with whom she works shared a story with her about how she, the mother, overheard the child's grandmother interacting with the child and the mother found herself saying, "If Judy were here, she would say, 'You look like a pro!'" The teacher then conveyed, "They are internalizing positive things that we say to them over and over again, and then carrying that over to other members of their family and coaching them." A second teacher told this story:

> The mom is here for parent support and then in the home I do it with the dad. The mom will always excuse herself to go to another room, but she hears, or she's passing by and sees Dad not doing something that . . . we've done, and she will jump right in there and almost be like me to him.

The third teacher added:

> I have the same experience. I have a family that I'm just supposed to be coaching the dad [in the home]. It's supposed to be his time, but the mom is in the other room and if she hears him do something she doesn't like, she will come back in the other room and tell him what to do.

Comments made about the caregivers' knowledge of their children's skills also indicated the caregivers' level of confidence. "They even ask questions about parts of language once in a while." "And they will say, '[He's] not saying [the] endings . . . .'" They are really paying attention to things." "I think [the parents] are much more analytical than they ever were before." "I think we are making them smarter." "We empowered them by saying we're here to support you. We're here to support you. I say that a lot to my parents."

Summary

The implementation of real-time embedded coaching with the application of andragogical principles was described by the teachers as effecting change in caregiver behavior. One teacher explained it when she said, "Something must happen that . . . makes that change, because if we stick with it, it does seem like there is a change." The caregiver interviews and the focus group with the teachers indicated the caregivers and the teachers perceived a difference in the style of coaching with the applications of andragocical principles, as well.

Chapter Five: Discussion

The purpose of this study was to explore the application of andragogical principles to real-time embedded coaching of caregivers when teaching their children with hearing loss to talk. Research literature existed that explained the increase of parental engagement when real-time embedded coaching was applied during parent-child activities (Dunst, 2007; Peterson et al., 2007; Rush & Shelden, 2008, 2011; Shanley & Niec, 2010). This study specifically investigated the application of andragogical principles to real-time embedded coaching with caregivers of children with hearing loss. Following are the research questions investigated using qualitative methods:

Research Questions

RQ1. How do andragogical principles apply to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (a) What is the coach's experience when applying andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk? (b) What is the coachee's experience when the coach applies andragogy to real-time embedded coaching designed to help parent coachees help their child with hearing loss learn to talk?

RQ2. How, if at all, has the application of andragogical principles to real-time embedded parent coaching contributed to a change in spoken language outcomes of children with hearing loss in relation to receptive and expressive vocabulary development?

I evaluated the application of andragogical techniques to real-time embedded coaching through individual caregiver interviews, a focus group, and secondary data composed of the children's receptive and expressive vocabularies. Data gathered during

the focus group with the teachers addressed Research Question 1 and sub-question (a). The individual caregiver interviews provided data to answer Research Question 1 and sub-question (b). The comparison of children's spoken language outcomes, collected from secondary data on the MacArthur-Bates CDI (Fenson et al., 2007a) of children whose caregivers did not receive andragogical real-time embedded coaching to children of caregivers who did receive andragogical real-time embedded coaching, provided data to answer Research Question 2.

Summary of Findings

Participants for this research study included four parents and one maternal grandmother, referred to as caregivers, of children with hearing loss enrolled in the Family School program at the Moog Center for Deaf Education. Also included were five teachers of the deaf, employed at the Moog Center, who provided real-time embedded coaching with the application of andragogical principles as part of the Family School program. At the onset of the study period and prior to the beginning of receiving services, parents completed the MacArthur-Bates CDI (Fenson et al., 2007a) on their children, with input from the teachers assigned to their family. Then, the caregivers engaged in six months of face-to-face real-time embedded coaching with the application of andragogical principles provided by a teacher of the deaf from the Moog Center for Deaf Education. The parents of the children completed the MacArthur-Bates CDI (Fenson et al., 2007a) again at the end of the six-month study period, in order to measure growth related to their children's vocabulary skills over the study period. This vocabulary data, reported on children with hearing loss whose caregivers received real-time embedded coaching with the application of andragogical principles, were compared

to secondary data related to vocabulary data provided on children with hearing loss whose caregivers received traditional parent coaching and without the application of andragogical principles.

Real-time embedded coaching included four main components: joint planning, demonstration and/or return demonstration, reflection, and feedback (Rush & Shelden, 2011). Coaching sessions occurred as a routine component of parent support sessions either at the Center or in the family's home and were typically at least 20 minutes. However, they could have lasted up to 45 minutes when they occurred as part of a home visit caregiver-child session. The number of sessions scheduled per month related directly to the child's age and enrollment in the Toddler Class, which was typical of all children enrolled in the Moog Center for Deaf Education Family School program.

Although real-time embedded coaching was expected to be one component of all parent support sessions, circumstances occurred which prohibited the teacher from implementing a coaching session, such as the child was asleep or the caregiver had other needs that overrode the coaching aspect of a particular session. In addition, some scheduled sessions did not occur due to illness of the child, the caregiver, or the teacher, or scheduling conflicts of the teacher or caregiver. The range of sessions cancelled during this study period varied from 0% to 32% across participants. During the sessions attended, participants engaged in real-time embedded coaching during 58% to 100% of the sessions. It appeared that one factor contributing to the number of sessions attended by caregivers, the number of sessions cancelled, and the number of sessions in which coaching occurred could be directly related to the caregiver's emotional status regarding her acceptance of her child's hearing loss.

Each of the five teachers from the Family School program at the Moog Center for Deaf Education who participated in this study provided support to caregivers of children with hearing loss, birth to 3 years-of-age, for more than 15 years. These teachers were coaching and guiding caregivers in their interactions with their children for the duration of that time.

For the 10 years previous to this writing, the coaching protocol included real-time embedded coaching; however, it was not until recent to this study that the teachers developed their skills in facilitating caregiver-child interactions to specifically include the application of andragogical techniques. Knowles' (1979, 1980, 1984, 1995, 1996) six assumptions of adult learners aligned with real-time embedded coaching as practiced and implemented at the Moog Center and illustrated in Table 5.

Caregiver responses during the individual in-person interviews, related to their experiences as coachees during real-time embedded coaching, revealed three main themes. These emerging themes were: establishing a climate conduce to learning, readiness to learn/motivation to engage in coaching sessions, and the coaching experience. Caregiver participants noted the influence of the application of andragogical principles to real-time embedded coaching.

Establishing a climate conducive to learning. In order for a teacher to be an effective coach she must first be an effective teacher. This means the teacher must have enough experience to have taught a plethora of students with a range of skills and implemented a variety of learning strategies. Only then would she be able to coach adults successfully to implement those teaching strategies that she already found effective.

Table 5

Alignment of Real-Time Embedded Coaching to Knowles' Six Assumptions

Knowles' Assumption	Practical Application	Alignment to Real-Time Embedded Coaching
Need to Know	The learner needs to know why one should engage in the learning process prior to involving oneself in it.	The coachee needs to understand the anticipated outcome of the coaching experience prior to engaging in it.
Concept of the Learner	As a person matures and gains life experience one becomes increasingly self-directing and independent.	Engaging in coaching experiences helps the coachee to become more self-aware, more self-directed, and increasingly independent.
Learner's Experience	As a person matures and gains life experience one accumulates a collection of experiences allowing that person to become a resource for one's own learning and the learning of others.	The coaching experience provides opportunities for the coachee to learn what changes need to occur and what additional learning needs to take place in the future.
Learner's Readiness to Learn	As a person matures and gains life experience, one's readiness to learn develops related to life activities and problems.	The coaching experience provides opportunities for the coachee to develop new skills as the necessity for those skills arises.
Learner's Orientation to Learning	As a person matures and gains life experiences one's perspective changes from one of postponed use of new knowledge and skills to one of immediate application of new knowledge and skills related to current life activities and problems.	The coaching experience provides opportunities for immediate application of skills coupled with self-reflection and feedback.
Learner's Motivation to Learn	As a person matures and gains life experience the motivation to learn becomes internal.	The coaching experience provides opportunities to apply learned skills to all aspects of one's daily routine and life activities.

Note. From Henschke (2012) and Knowles (1984, 1995, 1996).

When a teacher has had experience with a student with specific learning challenges or behavior challenges, she is able to convey strategies and techniques that worked in those situations to the caregiver she was coaching. Successful coaching also

requires the ability to articulate one's thoughts and ideas in a manner that is understandable to the person one is coaching. The ability to explain the specific procedures of an activity is a skill that develops over time and with experience. Establishing a climate conducive to learning is possible only when one approaches the task with confidence coupled with compassion, empathy, and life experience.

Establishing a climate conducive to learning is essential for effective learning, and will accelerate the learning process, when present. The analysis of the caregiver interviews revealed four patterns within the emerging theme of Establishing a Climate Conducive to Learning, which included 1) establishing a relationship, 2) building mutual respect, 3) being non-judgmental, and 4) feeling supported.

Establishing a relationship. All of the caregiver participants referenced the importance of the relationship with their coach. One caregiver explained her perspective on establishing a relationship when she said:

> So much of the success of this for us has been the development of the relationship at the beginning . . . . A key factor for me was relationship building. . . . Establishing a relationship . . . was the first and foremost thing. . . . As I got to trust [the coach] and know her, it was easier to receive input from her . . . . That relationship was really a key foundation for us in starting [the coaching].

My experience engaging in parent support sessions and parent coaching, as well as my experience in teaching others how to implement real-time embedded coaching, have given me the impression that the quality of the relationship between the coach and coachee influences the coachee's rate of learning and degree of satisfaction with the coaching experience. Comments provided by the caregivers suggested the quality of the

relationship between the teacher and the caregiver influenced the caregiver's degree of engagement in the coaching process and ultimately her learning.

Building mutual respect. All interviewees referenced the concept of building mutual respect. One caregiver stated, "I felt respected and I absolutely respect her as a professional and as a person. . . . I absolutely felt that from the beginning." Caregivers are more likely to engage in coaching activities and in the resulting learning process when they feel respected.

Being non-judgmental. My experience engaging in parent support sessions, implementing real-time embedded coaching, providing guidance to caregivers of children with hearing loss for more than 30 years, and the remarks elicited from the caregivers in this study, led me to believe that the more honest, open, and authentic a professional is, the more likely the caregivers are to be honest, open, and authentic. When caregivers feel safe asking questions, providing honest responses to questions, and sense their comments are not being judged, they are more likely to accept new ideas and try new activities than in circumstances when they feel judged. One caregiver remarked, "As I grew in [my] relationship with [my coach, I became] more authentic and transparent . . . [admitting] that we don't always have it all together." Another caregiver stated, "[The coach] has always been very open with me and open to my opinions. . . . It's comfortable whenever we meet."

Feeling supported. Some of the caregivers referenced the support they received while participating in joint planning prior to an activity. Some caregivers remarked about the positive reinforcement they received real-time while, engaged in activities with their children. Other caregivers commented on the support they felt beyond the coaching

experience. One caregiver stated, "She genuinely knew [my child] and cared about him. [She] knew us and cared about us as a family." Another caregiver said, "We are in this together. We are doing this together. [Feeling supported] then leads to that ability to come back to the table the next time. We are doing this [together] as opposed to trying to do this [alone]." It appeared that the support these caregivers received facilitated their learning and influenced their desire to participate in coaching sessions.

Readiness to learn/Motivation to engage in coaching sessions. The overriding reason stated by the caregivers as the motivation for engaging in coaching sessions was the well-being of their children. One caregiver commented, "Mostly the well-being of my child is what motivates me and also what keeps me open-minded to critique, because if I am not doing something consistently or correctly then it doesn't benefit [my child] at home." As described in Table 5, the coaching experience provided opportunities for the coachee to develop new skills as the necessity for those skills appeared and then to apply those skills to one's daily routine and other activities. Caregivers of children with hearing loss are intrinsically motivated to help their children in any way they can. As such, these caregivers not only have a readiness to learn but also have an eagerness to learn. The challenge is for the teacher to provide new information and teach new skills in a manner that benefits the caregivers and allows for learning.

Experiencing coaching. The coaching sessions at the Moog Center for Deaf Education consisted of four main components: joint planning, demonstration and/or return demonstration, reflection, and feedback. Caregiver experiences of the coaching sessions varied based on caregiver perspectives and caregiver engagement. Five patterns surfaced within the emerging theme of Experiencing Coaching, which included 1)

caregiver responsibility and accountability, 2) collaboration, 3) assessment of learning, 4) benefits of real-time embedded coaching, and 5) challenges of real-time embedded coaching. Four of the caregivers commented about engaging in the coaching sessions and how that experience felt and how it evolved. One caregiver commented, "At first [the real-time embedded coaching] felt really awkward." Another caregiver remarked:

> It was kind of a learning experience to get into [the real-time embedded coaching] . . . expecting [the coach] to give information in that moment. Being able to have [the coach] interrupt what we were doing [during the activity] and suggest slight changes in what we were doing became easier as we went along.

The act of engaging in real-time embedded coaching successfully requires a knowledgeable and experienced practitioner who has the skill to insert suggestions and positive comments during a caregiver-child activity in a manner that is not disruptive to the caregiver-child interaction while demonstrating respect for the caregiver.

Caregiver responsibility and accountability. One caregiver mentioned the initial challenge she felt in being responsible for selecting the activity and the objectives for the coaching sessions. She expressed that sometimes the responsibility of selecting an activity seemed overwhelming, but that she recognized the benefit of doing that when she said:

> Bringing the toy from home, at first was a little [difficult]. . . . I'm still not sure exactly what to bring . . . . It's so much easier if someone just shows up, brings [the toy], you do the activity, and you go home. The reality is that you would never ever play with that toy again, so it may not have really been useful time. I

> felt like me bringing something in . . . from home, that we would actually use [at home] and learn how to add more language to that over time [was beneficial].

My findings suggested that in order for the caregiver to get the greatest benefit from the coaching session, she must select the activity. When the caregiver chooses what she will do with her child during the coaching session, then she has an opportunity to think about the activity ahead of time and is able to plan session objectives and language goals. In addition, caregivers will be more likely to repeat activities and/or transfer the skills learned during a coaching session to other activities when they are able to replicate the activity practiced during the coaching session. Although caregivers may be hesitant to select an activity and/or objectives and language goals for a coaching session, it is my perception that when teachers guide them to do, so it will accelerate the caregivers' learning and increase their capacity to help their children.

Collaboration. All of the caregivers mentioned collaboration, an andragogical technique presented as joint planning, as a significant aspect of the coaching sessions. One caregiver stated, "I think that [the sessions] were collaborative." Another caregiver explained:

> We always discuss what we want to do before we start. [If it is] something that I want help with . . . [the coach] might have multiple [suggestions] for me and then I can just pick and choose what works as long as I stay consistent with how I do it and [stay focused on] the goal.

A third caregiver remarked, "I always brought my toy and a lesson objective from home. That's [what] I was supposed to bring." And another caregiver confirmed the collaboration when she commented, "She asks us to bring his toys . . . [and] she always

asks what the goals are at the beginning." When caregivers participate in the planning of the activities in which they will engage during the coaching session, they will have a greater desire to engage actively in those activities. Thus, explaining and demonstrating to the caregivers at the onset of each coaching experience that their input is important and valued increases the likelihood the caregivers will fully participate in the coaching session.

Assessment of learning. Four of the five caregivers mentioned assessment of learning, an andragogical technique presented in the context of coaching as reflection and feedback, as part of the coaching sessions. One caregiver stated:

> [The coach] always tried to [assess my learning and L's progress] at the end of the session. She always took a few minutes at the end to talk about what we had done. [We talked about] what we did during the session, anything we did address during the session she would talk about it [again]. Typically, [she would review by saying], "This is what we did. This is how you changed it. Did you see how this was better?" Or, we would talk about, "Okay next time let's look at this."

Another caregiver reported, "Usually we would end the [activity] portion and we would . . . debrief what happened. [We talked about] what went well and what our goal for next time would be." She continued, "We always reflect back on the goal we set in the beginning [of the session] and [talk about whether I felt] he was meeting that goal, or making progress toward that goal in some way." A learning need is not a need unless perceived as such by the learner, thus making it necessary to gain the caregivers input when determining the focus of coaching sessions. The andragogical process of reflection

provides opportunity for the caregiver to identify her learning needs and interests regarding the acquisition of knowledge and the development of new skills.

Benefits of real-time embedded coaching. All of the caregiver participants agreed there were benefits to participating in real-time embedded coaching with the application of andragogical techniques. One caregiver described her coaching experience in real-time when she said:

> I think being able to change [what I was doing] in that moment and then see the results right away is huge. To be able to hear the input, implement the input, and see the results, just makes you want to do that more frequently. I think as humans we want to do what we know works, and when we don't know what works we are a little wary to move forward on that, or to receive suggestions. But, to be able to have input, implement that input, and see the positive result right way, it just naturally makes you want to do that again.

Another caregiver agreed, "The benefit is getting feedback right away." A third caregiver stated, "I think [the real-time embedded coaching] makes a difference. . . . I think that this set up is helpful to keep me accountable and keep me engaged."

During the course of my career, I implemented traditional coaching and real-time embedded coaching. During traditional coaching experiences, I engaged in conversations with the caregivers prior to observing them interact with their children. I provided a demonstration of what I expected and included much explanation of my expectations. Following the demonstration and explanation, I then observed the caregiver interact with her child during an activity in which she intended to include my directions in order to fulfill my expectations. During the caregiver-child activity, I took notes but did not

provide any suggestions. At the completion of the activity, I reviewed my observations and assessed the caregiver performance, including what she did well and what needed improvement. For many years, this approach seemed appropriate; however, now I believe that it was a less-than-optimal approach to helping caregivers help their children with hearing loss learn to talk. One of the caregivers expressed this when she explained:

> [Real-time embedded coaching] is more participatory for me. I'm feeling like I'm a participant whereas in the other style I am just the observer. There is much more observation in the other style . . . . Because we are not participating, we just sit back and [the provider] does [her] thing and we are checking our phones and doing whatever. We are not engaged at all. . . . You almost feel like if you do try to help that you're sort of getting in the way of what's going on. She's very clearly got a goal, but I don't always know what that goal is.

It is my observation and experience that the implementation of real-time embedded coaching with the application of andragogical techniques resulted in increased caregiver engagement, accountability, and satisfaction.

Challenges of real-time embedded coaching. In the beginning, four of the five caregivers remarked on the challenges of engaging in real-time embedded coaching, referring to it as awkward and anxiety producing. One interviewee stated, "I think the biggest challenge in the beginning is getting over that anxiety. Every session might be a little awkward in the beginning." Another caregiver said, "If I don't know what I am going to do that day or have a plan . . . then I feel anxious." A third interviewee commented, "I think that [real-time embedded coaching] is very abnormal from the way we are used to functioning, and so it feels very abnormal." She continued, "Getting

someone to feel comfortable in that context is tricky because . . . it is such an abnormal context in our culture."

Based on my experience, I believe these feelings existed, because as adults and as caregivers we want to be perceived as capable and able to care for our children. However, for caregivers of children with hearing loss, there exists the additional responsibility of managing the aspects of caring for that child specifically related to that child's hearing loss. It appeared, the caregivers of children with hearing loss, in this study felt anxious because they did not anticipate needing help teaching their children to communicate. Additionally, engaging in real-time embedded coaching was a new experience; therefore, it felt awkward until they became familiar with the protocols and procedures. It was my impression a teacher's capacity to establish a climate conducive to learning also contributes to caregiver feelings of anxiety and awkwardness.

Two of the caregivers mentioned scheduling as a challenge to real-time embedded coaching. My perception is the scheduling struggle was not related specifically to the coaching activity, but instead to the act of engaging in parent support sessions in general. Sometimes underlying emotional factors affect a caregiver's ability to participate in activities designed to help her child because she is not emotionally ready to face the challenges presented by raising a child with a hearing loss.

Several factors contributed to the success of the real-time embedded coaching sessions from the caregiver perspective. The quality of the interaction, as well as the genuineness of the coach, made a difference in the caregivers' ability to develop new skills. Although challenges existed to participating in the coaching sessions, it is my

perception from caregiver statements, the benefits of engaging in real-time embedded coaching with the application of andragogical techniques were worthwhile.

Teachers' comments, related to their experiences as coaches, provided during the focus group revealed four main themes. These emerging themes were: changes to the implementation of providing coaching, teachers' perceptions of their roles as coaches, changes in teachers' attitudes, and changes in caregiver behavior. Teachers' perspectives as expressed in the focus group were in agreement with the caregivers' perspectives.

Successfully providing real-time embedded coaching required skill and expertise in both teaching the children and in teaching the adults. Getting the teachers to implement real-time embedded coaching was challenging at first. However, as teachers acquired competence and confidence in using real-time embedded coaching they recognized the benefits and embraced the model.

Changes to the implementation of providing coaching. Prior to the application of andragogical principles to real-time embedded coaching, teachers selected the activities and brought the necessary toys and materials to the caregiver-child sessions. Additionally, teachers selected the goals and outcomes for each caregiver-child activity. All of the teachers agreed that discontinuing the practice of determining the activities for the caregivers was a positive change. One teacher explained the rationale for not planning the lessons:

> Since we were bringing the toys . . . sometimes [the parents] didn't have that toy at home or they didn't play [the way we were showing them or suggesting] with their child . . . . They never told us because we were telling them, "This is what you should be doing." Also, some parents were buying [the toys] . . . . They

> would go and try to buy the same toys we were bringing, but that's not the idea. . . It's what [the parents] do with [their children] at home and what's natural for [them]. [It's] how [they] like to play with [their children that's important].

Other teachers added, "They couldn't duplicate [the activity or] the process."

> We had the toy, we [told] them what to do, then as soon as they weren't doing it exactly how we told them to do [it] we were jumping in and . . . taking over. Now we're not doing that [and instead] we are [providing] positive feedback. We are giving them [positive feedback] now.

Comments made by the teachers provide additional justification for including the caregivers on planning the activities for the sessions. "I never asked them what they were doing before. I just said, 'This is what we are going to do. Do it this way.'"

> I always started out with some kind of demonstration . . . . Now I start out with more of a discussion about what they think they should do with that toy. Together we talk about how we could incorporate [what we are currently working on] into whatever activity they have brought with them.

"We've developed more [as] a team. . . . Whereas, before I think we almost had this hierarchy where we were up here."

> Now they're telling [us] what they are doing and then [we] are . . . guiding them to figure it out on their own. [We are guiding them to determine] what should happen next, which we never did before. We never gave much opportunity for guidance.

It took more than two years for the changes described to occur. My perception was that although the teachers wanted to implement best practice and provide the best service to

the families, they did not believe they could change to meet my expectations. I think they did not have the confidence in themselves to believe they could conduct a worthwhile lesson without the advantage of planning. Expecting the caregivers to plan the activities meant the teachers could not plan that component of their parent support sessions. The teachers did not feel prepared to think in the moment at the beginning of the coaching session. I speculate the teachers were hesitant to apply andragogical principles to the coaching sessions because it meant interacting with the caregivers required a new and different perspective.

Teachers' perceptions of their roles as coaches. The five teachers who provided real-time embedded coaching with the application of andragogical principles were the same teachers who provided coaching sessions prior to the implementation of these processes and techniques. These teachers described how they viewed their roles as coaches during traditional coaching sessions without the application of andragogical techniques versus sessions that implemented real-time embedded coaching with the application of andragogical techniques. The analysis of the teacher comments during the focus group revealed two patterns with the emerging theme of Teachers' Perceptions of Their Roles as Coaches, which included 1) teachers as experts and 2) attitudes about teaching adults.

Teachers as experts. The teachers agreed they viewed themselves as experts and they perceived the caregivers did, too. One teacher expressed the feelings of the group when she commented:

> I think [the parents] used to look at [me] as the one who knew how to do it . . . . There was something really special about the way [I was] doing it. They were

> very happy to just sit back and let me do all the work. So they would come to parent [education], happily, and they would sit there and smile and they would want me to show off what I could get their child to do. They were afraid to jump in and try and a lot of them were just very comfortable [saying], "Okay, show me."

It was my impression that prior to the application of andragogical principles caregivers took a submissive role, because the teachers approached the parent coaching sessions as the single expert. One of the teacher's expressed how she viewed her changing role when she stated:

> One of the big things that I feel helped me . . . is when we went from [labeling the sessions] parent education to parent support. There's a whole different meaning when we call it support versus education because I think for me it was us looking down on them like they needed to be taught. They needed to learn. They already know a lot of stuff because they're the parents. They know more about their kid than we do.

I believe words have power, and this teacher's comments support the idea that a label has the potential to change one's perspective and attitude. This teacher stated changing the title of the sessions helped her have a better understanding of her role as a coach. Changing the label of the sessions also resulted in changed expectations for both the teachers and the caregivers.

Attitudes about teaching adults. The change in coaching technique occurred when the teachers' attitudes about themselves and their ability to teach the caregivers also

changed. Statements from the teachers provide perspective about how this change evolved:

> I think we were not comfortable teaching other adults. I think we were very comfortable teaching children and so it was easier for us to teach the child than to try to teach the parent . . . . I think once we got over that fear of can we really teach the parents, and can we make a difference, then I think . . . we empowered the parents. We felt good about what we were doing, and then it all snowballed . . . . The hardest part . . . was having the confidence to tell the parents that they were going to be in charge.

Two other teachers reiterated this perspective, remarking, "[We] had to believe that [we] were capable and that [the parents] could do it" and "I had to develop the confidence to [make suggestions to guide the parents]." These teacher statements accurately explained their reluctance to engage in real-time embedded coaching with the application of andragogical principles. Although it appeared the teachers did not have confidence in their own skills, I think the greater barrier was the teachers' concept the caregivers were not capable of being responsible for their children's learning.

Changes in teachers' attitudes. The teachers began applying andragogical principles with the onset of real-time embedded coaching. However, in order to implement new andragogical techniques effectively when providing parent support the teachers' attitudes toward the caregivers had to change. Two patterns surfaced within the emerging theme of Changes in Teachers' Attitudes, which included 1) establishing a climate conducive to learning and 2) developing a trust of the learner.

Establishing a climate conducive to learning. Teacher comments related to establishing a climate conducive to learning included creating a safe and comfortable emotional climate. One teacher explained, "By creating that [supportive] climate, and saying, 'We're here to help you,' we're empowering [the parents]." Another teacher described her perceived benefit of using positive feedback during real-time embedded coaching:

> I think what everybody is saying is one of the most important things that we do is be positive and not make a big deal about what they are not doing because you can just watch them sit up a little bit straighter and say, 'Wow, that's really good.' [It's also powerful] when you point out at the end of the session all of the good things that they did.

Other teacher comments suggested the coaching components of reflection and feedback influenced the climate. "I think that the reflection piece is a huge piece of [creating a positive climate]." "That reflection piece is probably helping to build their confidence." "They are seeing the positive on their own." "I think that the reflection piece is a huge piece of it because [the parent might comment about what didn't go well] and [I can] go on about the positive things that happened."

These comments suggested that reflection adds to the caregiver's learning differently than external feedback from one's coach. When caregivers are thoughtful and introspective, it encourages accountability. Engaging in reflection, an andragogical technique of parent coaching, provided the caregivers opportunity to express their learning needs in a safe and comfortable environment. The teachers perceived this

accelerated the caregivers' acquisition of strategies and techniques for helping their children with hearing loss learn to talk.

Developing a trust of the learner. The teachers' comments indicated that at first they did not believe the caregivers were capable of interacting with their children in a manner that would provide appropriate and necessary vocabulary and language stimulation and would contribute positively to the children's overall development. This sentiment, expressed when a teacher stated, "I didn't think [the parents] could do it, and I didn't have the confidence that I could help them do it successfully," represented the teachers' perspectives. It was my impression the teachers perceived without an education specific to teaching children with hearing loss to talk, the caregivers could not be successful. Additionally, the teachers conveyed they did not believe they had the skills to articulate their knowledge during coaching sessions successfully. It is my opinion that for teachers to be successful when providing parent support and during the coaching experience, it is necessary they have at least three years teaching experience. I hold this opinion because I believe one must have sufficient teaching experience to have the knowledge and possess the confidence necessary to convey accurately and succinctly the strategies and techniques used to teach children with hearing loss to talk, at a level that is understandable and in a manner that is non-threatening to caregivers. I also believe that one must have trust in oneself before one has the capacity to develop a trust of the learner. My opinion was supported by the consensus of the group when one teacher shared:

> Once I got over that fear of letting [the caregivers] be in charge, then I think it was amazingly easy to find things to compliment them about . . . . I was surprised

> that it was so obvious the things that they were doing well, that they had no idea that they were doing well. I think [supporting them] came pretty easily. And, once you see them smiling then it reinforces you, so that you want to keep doing more . . . . I think I feel badly when they can't come up with [the correct language]. You gotta let go of that. [The parents] can't come up with that because they don't know. So that's my job to step in and help them and help them a little bit at a time. And maybe next time will be better, and the next time a little bit better. I think we set the bar very high for ourselves and if they don't have the answer we shouldn't view that as we have failed. We should view that as . . . [the place] where we need to start, and this is where we will work toward. But, that is a scary moment when they don't say anything.

Changes in caregiver behavior. The implementation of real-time embedded coaching led to observable changes in caregiver behavior as reported by the teachers. The teachers expressed that these caregivers were more willing to engage in the parent support coaching sessions and were more participatory during the caregiver-child activities than caregivers with whom they previously had not implemented real-time embedded coaching with the application of andragogical principles. Three patterns surfaced within the emerging theme Changes in Caregiver Behavior that included, 1) caregiver responsibility and accountability, 2) demonstrating a readiness to learn, and 3) feeling empowered.

Caregiver responsibility and accountability. Teachers' statements described the increase in caregiver accountability in response to the real-time embedded coaching with the application of andragogical principles. "They didn't [feel responsible or take

ownership] before because . . . [we] were telling them what to do." "They put it all on us." "They've taken ownership of [helping their child] a little bit more, and they feel comfortable." "I think that they feel responsible for making it happen . . . . I think that they have ownership over some of the education for the baby."

Another change that the teachers noted was the caregivers' ability to make decisions about what activities to do with their children and the language skills on which they would focus.

> Instead of waiting for me to tell them what to do, they started thinking on their own about what kinds of language they could use with that activity and how that related to what they were hearing their child say at home.

One teacher added, "I think it made them try to start [using strategies for improving their child's language] around other parts of the day, rather than just the part when they were coming to [a] session." "Instead of being really passive and sitting, now [the parents] are being more active and participating." Another teacher added, "Before they were more observers than participators."

My perspective was that it is not appropriate for teachers to plan the activities and/or use their toys during coaching sessions because in doing so it is impossible for the caregiver to prepare in advance. When teachers provide the materials for an activity, it is unknown whether the caregiver has those materials at home and will be able to replicate the experience at a subsequent time with their child. It also sends a message to the caregiver that she is not capable of selecting materials and the teacher does not have confidence in the caregiver's ability.

Demonstrating a readiness to learn. Teachers remarked that since the implementation of real-time embedded coaching with the application of andragogical principles the caregivers appeared more focused on their own learning and came to the sessions more prepared to engage in learning. "I've noticed that . . . if they don't have confidence [to try something on their own] they are not afraid to ask. They seem . . . much more comfortable to ask questions." "They're not as intimidated . . . to ask [questions], as opposed to way back when [the parents] would just sit back [and let us be in charge of the session]. These comments were followed by another teacher who said:

> It's not effective if you're coming to the session assuming that all of these [andragogical] principles are in place and [the parents] show up and one of [the principles] isn't in place, then it can't be effective because they aren't coming to the situation with the same expectation that you were . . . . They're just not ready. It's like they are emotionally not ready. It's just emotionally they're not in a place to say, "I need to learn this." And, so it can't be effective.

Other teachers added, "Adults will learn only what they feel they need to learn." "I think it's wrong to say they don't want to learn . . . . The truth is . . . they don't know that they are supposed to want to learn." "We now have enough experience that we feel comfortable . . . in these situations and we believe . . . the adults want to be there. And I think we start off slowly and do what we can do to make them feel comfortable."

> If the parents don't present as wanting to learn, and they don't think there is something to learn, [then] they are not willing to engage because they don't [think they] need to learn by doing. But it's certainly the minority.

Prior to the implementation of real-time embedded coaching with the application of andragogical principles, teachers planned the activities for the parent support sessions. When teachers plan the activity and bring the materials to the session it may prohibit the caregivers from coming to the session with a readiness to learn. This idea was confirmed by teachers' statements. "Bringing the toy and telling them what they were going to do was almost counter to developing their readiness to learn." "They had no opportunity to practice ahead of time." "They couldn't practice . . . . [They] didn't have that [toy]." "That would be more intimidating than what we are asking them to do now."

> Think about how counter that would be to empowering them to be able to do the activity. We would just show up, and we would bring the toy, and we would say, "And now you should . . . do x, y, and z with it," but they have five seconds [to figure out the language and the activity.]" You can't be bringing the toy in, because there is no way for the parent to prepare for any of it if we bring the toy in.

One teacher summarized the caregiver experience before the implementation of real-time embedded coaching with the application of andragogical principles when she said, "We threw them on their butts." These teachers' statements support that in order to develop a readiness to learn in caregivers participating in real-time embedded coaching, it is important that caregivers participate in the planning of the activities, goals, and objectives of the session so they have opportunity to think and prepare prior to the session.

Feeling empowered. The implementation of real-time embedded coaching with the application of andragogical principles increased caregiver confidence and developed a

sense of empowerment as reflected in teachers' comments. "I think there is more of a confidence level among all the parents that . . . they're feeling like they can do this."

> You said before that [the parents are] more confident [now]. That confidence just kept building and building and so what happens now is they don't look at us very often [to tell them what to do] and we are able to just add little comments to tweak what they are doing. They feel much better about what they are doing than they ever did before. I think when we were [demonstrating] all the time, they were afraid to try.

"I think [the embedded coaching] also in a way empowers them. They have [more] confidence or something. It carries over [to other activities]." "[The parents] don't look at us [as] much [when it] isn't going well, or the child isn't doing what [he is] supposed to be doing. They . . . try to work it out."

Comments made about the caregivers' knowledge of their children's skills also indicated the caregivers' level of confidence. "They even ask questions about parts of language once in a while." "They are really paying attention to things." "I think [the parents] are much more analytical than they ever were before." "I think we are making them smarter." "We empowered them by saying we're here to support you."

Based on the evidence of this qualitative research study, the application of andragogical principles to real-time embedded coaching of caregivers when helping their children with hearing loss learn to talk increased caregiver engagement and accelerated caregiver learning. The andragogical process of joint planning demonstrated mutual respect and trust of learners which empowered the caregivers. The andragogical process of reflection provided opportunities for the caregivers to identify their learning needs and

interests regarding the acquisition of knowledge and the development of new skills. The application of andragogical principles to the feedback component of coaching sessions provided guidance to the caregivers in a meaningful and beneficial manner.

Secondary data.

Secondary data, which consisted of children's receptive and expressive vocabulary growth, represented child outcomes. Parents completed the Words and Gestures form of the MacArthur-Bates CDI (Fenson et al, 2007a) at the onset of the study period and again six months later. Parents marked the words their children understood and the words their children produced, and age equivalents for receptive and expressive vocabulary words were identified. The total number of words understood for each child, were counted and applied to the Table of Percentile Scores for Words Understood in the *MacArthur-Bates Communicative Development Inventories: User's Guide and Technical Manual* (Fenson et al., 2007b, p. 117). This table provided a percentile rank for words understood for hearing children on whom the inventory was normed. The number of words known by the study children was located on the table at the 50th percentile and the corresponding age in months was used to determine an age equivalent.

The total number of words produced by each child was counted and applied to the table of Percentile Scores for Words Produced in the *MacArthur-Bates Communicative Development Inventories: User's Guide and Technical Manual* (Fenson et al., 2007b, pp. 119, 125). This table provided a percentile rank for words produced for hearing children on whom the inventory was normed. The number of words produced by the study children was located on the table at the 50th percentile and the corresponding age in months was used to determine an age equivalent.

Receptive vocabulary growth for the eight children whose caregivers did not receive andragogical coaching ranged from 2 months to11 months. Receptive vocabulary growth for the four study children whose caregivers received andragogical coaching also ranged from 2 months to 11 months. Expressive vocabulary growth for the eight children whose caregivers did not receive andragogical coaching ranged from two months to six months. Expressive vocabulary growth for the four study children whose caregivers received andragogical coaching ranged from five months to seven months.

Figure 2 illustrates results for children whose caregivers did not receive andragogical coaching and includes any data collected at the Moog Center for Deaf Education over a six-month period during routine data collection prior to the implementation of andragogical real-time embedded coaching.

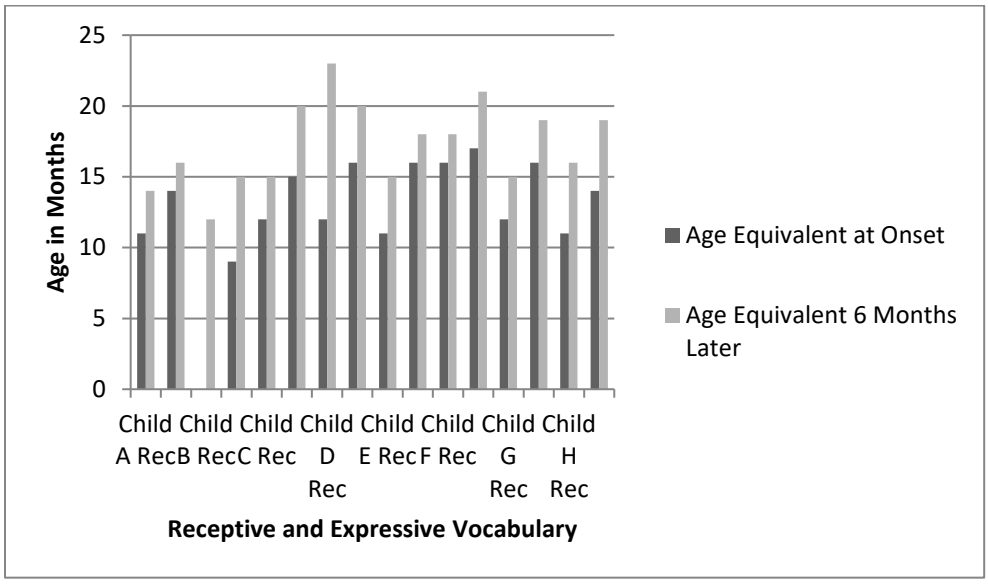

Figure 2: Vocabulary age equivalents for children whose families did not receive andragogical real-time embedded coaching.

Figure 3 illustrates results for the study children whose parents received real-time embedded coaching with the application of andragogical principles. Both Figures 2 and 3

depict each child's receptive and expressive vocabulary age equivalents in months, over a six-month period.

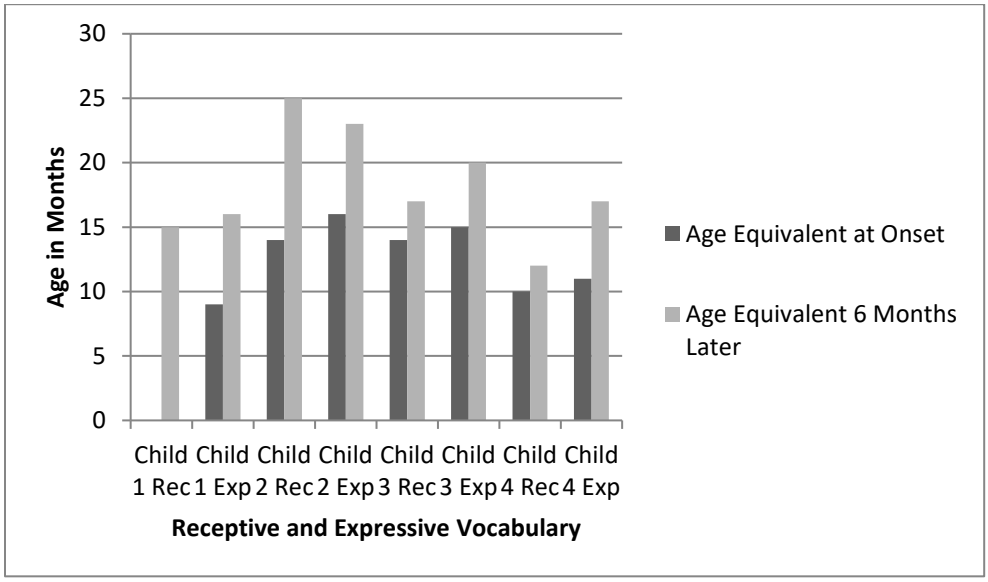

Figure 3: Vocabulary age equivalents for study children.

Unexpected Findings

The teacher participants in this study were experienced, each with more than 15 years of working with families of children with hearing loss. I found the group of teachers to be cohesive and collegial, and to have great respect for one another and for me. Although changes made to the parent support sessions initially were met with some resistance, it was my impression that all of the teachers implemented coaching sessions as agreed by the group.

I was surprised to learn through the caregiver interviews that teachers sometimes brought activities to the coaching sessions. One caregiver stated, "[The coach] does come with her toys, usually. And, a lot of the times they are the same as they were the week before [so then I know] what we can expect R to say." Another caregiver

commented, "[At the beginning, the coach] always brought some activity, and usually we started with that." A third caregiver reported:

> [The coach] would say, "I have stuff," because I would bring my stuff [to sessions at the Center] but then [C] . . . would be looking at her stuff and really not be very interested in my stuff and then . . . she would [say], "Do you want to do this today?" Then she would let him do it.

I speculated the teachers who continued to bring toys to the sessions or plan the activities for the caregivers did so because they were anxious the caregivers would not prepare an appropriate activity. Another contributing factor may be the teachers maintained some lack of confidence in their abilities to provide sufficient support for the caregivers in the context of the activity, when they themselves had not been afforded the opportunity to prepare. In past discussions, the teachers mentioned that the caregivers may not select an activity, selected activities that are too difficult for their children, or activities that did not lend themselves to practicing vocabulary or language. So, it could be the teachers experienced that when interacting with a specific personality of caregiver, and facilitating the activities for this set of caregivers, the caregivers presented in such a manner it necessitated that the teachers plan and bring an activity in order to encourage the caregivers to engage in the coaching activity.

It was interesting to learn that some teachers continued to have difficulty articulating their expectations and guiding the caregivers by using words to describe what to do, instead of inserting themselves into the caregiver activity and demonstrating. One caregiver stated, "She will take over and you know, I'm always happy for her to, and show me again what we are doing." An effective technique for helping caregivers

understand the expectations during an activity was demonstration-return demonstration. This technique involves the teacher engaging in the activity with the child while the child's caregiver observes, providing her an opportunity to observe the implementation of the learning objectives of the session. Then, the caregiver engages in the same activity following the example provided by the teacher. However, the examples provided by the caregivers in which the teachers inserted themselves into the caregiver-child dyads during an activity do not employ andragogical principles.

Secondary data provided information about the children's receptive and expressive vocabulary growth. Data for both groups indicated the same growth for receptive vocabulary. Data for expressive vocabulary growth indicated the study children made more expressive vocabulary progress than those children whose parents did not receive andragogical real-time embedded coaching. However, the differences in vocabulary growth were not as anticipated at the onset of the study. I anticipated that the children whose caregivers received real-time embedded coaching with the application of andragogical principles would result in greater progress when compared with those children whose caregivers did not.

Personal Reflections

I am proud that the teachers at the Moog Center for Deaf Education were able to implement real-time embedded coaching with the application of andragogical principles. Although, I was surprised to learn that some aspects of the parent coaching sessions were not implemented as planned, the teachers embraced this methodology and were successful. Also, I must keep in mind that the caregiver comments may not be accurate

recounts of what the teachers said or did. My experience taught me that caregivers sometimes perceive information or actions in ways other than those intended.

There are components of the dissertation process and the data collection that could be improved. In general, my interview skills lacked the ability to draw complete information from the caregivers. Although some of the interviewees were more forthcoming with information than others; overall, I found getting information from the caregivers challenging. Oftentimes, they did not respond to the questions as I had anticipated, requiring that I ask follow-up questions to elicit more information. Sometimes, my subsequent questions were not open-ended leading the caregivers to respond with short answers, making it difficult to get the caregiver perspective. This was in sharp contrast to the experience with the focus group. During the focus group the teachers' comments dovetailed off one another and the conversation flowed. For the interviews, I felt that I was 'pulling' information. The difference in the two processes may be related to the relationship I had with the teachers versus the relationship I had with the caregivers. I believe the caregivers felt anxious during the interviews, and I did not sufficiently employ appropriate strategies for reducing their discomfort.

The secondary data came from routine data collected at the Moog Center from the MacArthur-Bates CDI (Fenson et al., 2007a). The study period was only 6 months, which may be too short a period to measure significant changes in vocabulary development in children under 3 years-of-age. In hindsight, I wish I had compared the vocabulary growth of the children whose families did not receive the implementation of andragogical real-time embedded coaching with all children whose caregivers did receive real-time embedded coaching with the application of andragogical principles, instead of

only the four children whose parents were research participants. This might allow for a more accurate account of the influence of the coaching methodology. In addition, I would increase the length of the study period to provide more measurable vocabulary growth.

Proposed Changes

Each of the teacher participants in this study has provided parent support and engaged in parent coaching sessions for more than 15 years. During that time, the protocol for implementing parent support and parent coaching sessions evolved. Results from this study indicate that a review of current practices is appropriate. I intend to share results from this study with the teacher participants in order to elicit candid and lively discussions about information revealed during the research process. My expectation is that in doing so, I will learn why some teachers continued to plan activities and bring toys to the parent coaching sessions and what challenges they continued to face. If, in fact, some teachers still plan activities and bring materials to the sessions, I hope to have honest dialogues that will further my learning about why this happens and/or teacher's perceived it as necessary. From these discussions, I intend to continue to make changes to the protocols of the parent support sessions and parent coaching sessions, as necessary, in order to provide better service to the families of children with hearing loss served at the Moog Center for Deaf Education.

Conclusion

I chose to study the application of andragogical principles to real-time embedded coaching because I wanted to know if my speculation that it would influence caregiver participation and child outcomes was accurate. In researching this topic, caregiver

responses to the individual interviews revealed three major emerging themes: establishing a climate conducive to learning, readiness to learn/motivation to engage in coaching sessions, and the coaching experience. Teacher comments during the focus group revealed four major themes: changes to the implementation of providing coaching, teachers' perceptions of their roles as coaches, changes in teachers' attitudes, and changes in caregiver behavior. Analysis of the secondary data demonstrated vocabulary growth for all children but did not indicate that real-time embedded coaching with the application of andragogical principles influenced child outcomes.

The implementation of real-time embedded coaching with the application of andragogical principles to coaching caregivers when helping their children with hearing loss learn to talk increased caregiver engagement, as evidenced in the comments provided during the caregiver interviews and the teacher focus group. Although the teacher participants and caregiver participants provided useful qualitative information to this study, conclusions cannot be drawn that apply globally, because the number of research participants was too small and the study period was too short. Other factors not addressed in this study may also have contributed to outcomes, such as age of children, degree of children's hearing loss, caregiver education levels, and number of sessions attended. Nevertheless, results of this study indicate that the application of andragogical principles to parent coaching was beneficial when working with caregivers of children with hearing loss and it may be applicable for working with caregivers of all children receiving early intervention services.

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Appendix A

Interview Questions for Parents at the Conclusion of the 6-month Coaching Period

1. Describe the climate that was established during the real-time embedded coaching sessions that applied andragogy. Follow-up question: include discussion of mutual respect, trust, collaborative supportive

2. In what ways were you motivated to attend and participate in the sessions?

3. In what ways, if at all, do you feel you guided the session and/or had input into the focus of the coaching sessions? How did you perceive the opportunity to provide input?

4. In what ways, if at all, were you able to assess your learning and the progress of your child?

5. How did you perceive the opportunity to assess your learning?

6. In what ways, if at all, did you feel supported by the teacher?

7. What, if any, are the benefits of real-time embedded coaching when andragogy is applied?

8. What, if any, are the challenges of real-time embedded coaching when andragogy is applied?

Appendix B

Focus Group Questions for Providers Implementing Real-Time Embedded Coaching When Applying Andragogical Principles

1. How do you perceive the parents benefited, if at all, from the application of andragogical principles during real-time embedded coaching?

2. What were the challenges of applying andragogy to real-time embedded coaching?

3. How did you develop a climate of mutual respect?

4. How did you develop the parents' readiness to learn?

5. Describe any situation in which you perceive the application of andragogy during real-time embedded coaching was not effective.