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Enhancing Parent Participation in Early Intervention Through Tools That Support Mediated Learning

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The Ready to Learn parent–infant education program of the Lexington School for the Deaf in New York is a family-centered early intervention program. The staff used two new measurement instruments to scaffold their efforts to establish a collaborative relationship with parents who represent a variety of cultures and socioeconomic levels. The results demonstrate that these instruments can effectively measure changes in parents' interactive behavior with teachers and with their children, as well as their active participation as mediators of their children's learning opportunities over time. Specifically, the results indicate that parents contributed to setting goals for their children and the domains of the goals were consistent with the cognitive and family-centered focus of the program. Further, parents made significant gains in their ability to share information with staff, address their children's hearing and communication needs, participate in meetings, and collaborate during assessment and team meetings over time.

Keywords: mediated learning experiences; early intervention; deaf children; parental involvement; assessment

Although there is ample research to suggest that parents play an important role in determining children's educational well-being and success, fostering active parent collaboration with early intervention programs or schools remains a complex process (Bailey et al., 2006; Odom & Wolery, 2003; Patrikakou, Weissberg, Redding, & Walberg, 2005b). Research and clinical practice have indicated that children's developmental outcomes, including school achievement, motivation to learn, and self-esteem, are significantly enhanced when parents

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are actively and constructively involved in facilitating their children's development and education (Bronfenbrenner, 1979; Dunst, 1999; Hart & Risley, 1995; McWilliams, Tocci, & Harbin, 1998; Moll & Greenberg, 1990; Patrikakou, Weissberg, Redding, & Walberg, 2005a). Yet enticing parents to take a more meaningful role in their children's early intervention and education has proved to be a significant challenge, particularly with parents who have limited education, limited financial resources, and diverse cultural affiliations (Epstein, 2001; Patrikakou et al., 2005b; Reynolds, 1992).

BACKGROUND

In order to generate a positive working relationship with parents, early intervention programs and schools must make a sincere and systematic effort to acquire parents' trust and motivate them to participate in partnership relationships. Achieving this goal may be facilitated by models that clarify the process. One model, proposed by Laosa (1999), emphasizes the importance of recognizing how the interplay between culture, cognition, social and emotional processes determines the ultimate success of any partnerships between parents and professionals.

Another model of the parental involvement process, advanced by Hoover-Dempsey, Walker, and Sandler (2005), clarifies how the actions of the institutions, as well as the professionals in the institutions, have a direct impact on the level of motivation and engagement parents demonstrate. They argue that there are direct actions schools can take to increase parents' active participation in their children's education. Among the steps they recommend that schools can take are to: (a) communicate to parents the importance of their role in their children's educational success, (b) inform parents about which of their behaviors significantly contribute to their children's academic success, and (c) find ways to welcome and invite parents to engage with the school staff and the education of their own children.

A third model is proposed by Moll and Greenberg (1990) and explores the transmission of knowledge and skills in Hispanic households. Observing and analyzing teaching and learning behaviors, from a Vygotskian perspective, they have focused on the importance of building mutual trust ("confianza" p. 321) and understanding how "funds of knowledge" are conveyed between adults and children during authentic learning activities. They emphasize the importance of reciprocity as opposed to trying to impose knowledge without understanding the needs, beliefs, culture, and especially the funds of knowledge that parents and children already possess.

A fourth model, proposed by Bailey et al. (2006), emphasizes the importance of evaluating family outcomes in order to assess program effectiveness. Using an evidence-based process and extensive input from different groups of stakeholders, they identified five family outcomes that could be used to assess the effectiveness of family-centered early intervention programs. These outcomes are: "(a) families understand their child's strengths, abilities, and special needs; (b) families know their rights and advocate effectively for their child; (c) families help their child develop and learn; (d) families have support systems; and (e) families are able to gain access to desired services and activities in their community" (p. 227, 243). They noted, however, that measurements for assessing these family-outcomes are seriously lacking.

Programs that seek to enhance children's success as learners, especially family-centered early intervention programs, need to find tools and action plans for successfully engaging parents, expanding their participation in their children's education and intervention, and

measuring changes in family outcomes that result from these efforts. The research being reported here reflects an effort by the Ready to Learn (RTL) staff of the Lexington School for the Deaf to promote a working partnership with parents, on behalf of their infants and toddlers, through the use of instruments and procedures that structure, support, and document parent–teacher and parent–child mediated learning interactions.

THE INTERVENTION PROGRAM

The goal of the RTL program is to promote and increase parents' participation and interactive skills while working with their children and the RTL teachers. The RTL program is based on the theory of mediated learning experiences (MLE) and the Reciprocal Consultation Model, which are described below. Parents and teachers meet at the Lexington School for the Deaf for 1 and 1/2-hour sessions twice a week. During those sessions the teachers mediate the parents' acquisition of knowledge and skills. Teachers demonstrate and inform parents about child development in general and their own child's development in particular. They coach parents in the use of interaction strategies that are important for communication with deaf and hard of hearing children, as well as guiding parents' observations of their infants'/toddlers' interactions during daily routines (e.g., snack) and during play. Parents who attend the weekly play group sessions are able to interact with other parents and caregivers. Play group sessions provide opportunities for parents to practice what they have learned during the individual sessions and to share their experiences and frustrations with other parents and staff members.

THEORETICAL FRAMEWORK

Mediated Learning Experience (MLE)

The construct of MLE was first introduced by Feuerstein, Rand, Hoffman, and Miller (1980) to describe the nature of the interactions adults, or more knowledgeable peers, use to enhance learning by mediating learning opportunities. Feuerstein, like Vygotsky (1978), believed that adults who are transmitting knowledge and skills to children need to guide them to recognize and understand the incoming stimuli. They also indicated that parents, or more knowledgeable others, are motivated to mediate by the need for intergenerational transmission of their culture. Mediators also need to assist children in formulating their responses whenever the task at hand is not one they are capable of mastering on their own. Feuerstein originally identified the essential components of MLE as being intentionality/reciprocity, meaning, and transcendence. Later, others added feelings of competence and regulation of behavior as essential components of a meditated learning experience. Subsequently, the list of criteria for a mediated learning experience was expanded (Feuerstein & Feuerstein, 1994).

Klein (1992) and Kahn (1992) independently adapted Feuerstein's constructs and parameters of MLE to interactions with infants and toddlers. Kahn (1995) developed the taxonomy of affective, cognitive, and enabling mediated learning strategies (MLS), which describes interactive behaviors that parents and caregivers use when mediating for their infants and toddlers. The mediated learning experience approach, used by the RTL teachers, focuses on developing quality interactions during parent–child play activities and daily routines using the constructs of intentionality/reciprocity, meaning, transcendence, feeling of competence, and regulation of behavior. The underlying assumption of the program is that mediation of

children's learning opportunities by adults, who are significant in children's lives, promotes and facilitates children's learning and motivation (Feuerstein et al., 1980; Fogel, 1993; Klein, 1992; Rogoff, 1990; Vygotsky, 1978). MLEs are introduced to evoke active learning and thinking on the part of infants and toddlers as they play and engage in daily routines. In the RTL program, the teachers demonstrate the MLSs for parents and coach them so they can enhance the impact of the MLE they provide for their children and expand their interactive skills.

The Reciprocal Consultation Model

The Reciprocal Consultation Model is a theoretical model for describing and documenting four phases of parent–teacher collaboration during family-centered early intervention. These phases are: (a) getting to know one another, (b) establishing a team effort, (c) enabling and empowering, and (d) self-sufficiency. The model describes goals and objectives as either independent or collaborative activities (e.g., acquiring child development knowledge, sharing information), and complementary roles that parents and teachers demonstrate (e.g., observer, mediator, advocate) as they progress to higher levels of participation and interactive skills (Kahn & the RTL Staff of the Lexington School for the Deaf, 2006b). The RTL program adopted and refined this model and used it as the basis for developing the Reciprocal Consultation Parent Assessment System (Kahn & the RTL Staff of the Lexington School for the Deaf, 2006b), the results of which will be described in this article.

CREATING AN INFRASTRUCTURE FOR PROMOTING AND MEASURING PARENT PARTICIPATION

Since it is essential to the RTL program that parents become actively involved in their children's intervention program, methods and materials had to be selected to facilitate and promote parents' engagement. Initially two tools, the Goal Attainment Scale (GAS) and the Reciprocal Consultation Parent Assessment System (RC*PAS), were incorporated into the program delivery model to provide a structure and context for provoking increased parent participation and reflection and for increasing their knowledge base and pedagogical skills. These tools are viewed as a means for teachers to scaffold parents' effort to become meaningful and competent mediators for their children. In keeping with descriptions of "scaffolding" by Wood (1988, p. 80), and Wood, Bruner, and Ross (1976), these two planning and assessment tools help teachers focus parents' attention on the relevant aspects of their interactions with their children and guide them to parse their goals and planned activities so these become manageable for their infants and toddlers.

The Goal Attainment Scale (GAS)

The GAS used by the RTL teachers was an adaptation (Kahn & the RTL Staff of the Lexington School for the Deaf, 2006a) of a quantitative instrument that had been used extensively in the fields of mental health and education (Kiresuk, Smith, & Cardillo, 1994) and that had been recommended for use in early intervention (Simeonsson & Sturtz McMillen, 2001). This instrument provided a format for engaging parents in setting goals that were developmentally appropriate and family friendly, as well as promoting parents' abilities to engage in planning strategies and activities that supported their mediation of learning experiences and facilitated their participation in implementing interventions.

From the start of the intervention program, parents are invited to generate the goals. These goals are used to promote their infants' development and enhance families' awareness of available resources as they relate to their child's well-being, socioemotional development, and intellectual progress. The four-step setting of goals ranging from unsatisfactory levels of behavior, knowledge, and skills to the ideal levels evokes a dialogue between the teacher and parent, or caregiver, that facilitates a sharing of existing expertise and information and allows for conjoint agreement on the targeted goals for the intervention sessions and when the targeted goal has been achieved (see an example of the goal attainment scale in Figure 1). Goals were reviewed during the twice-a-week sessions at the discretion of the teacher and parent. Goal attainment was determined collaboratively by the teacher and parent. The GAS tool also provided a means for documenting the partnership process and changes in parents' participation over time, which were used for summative and formative program evaluation purposes. A complete description of the GAS with operational definitions is available in the manual (Kahn & the RTL Staff of the Lexington School for the Deaf, 2006a).

*Reciprocal Consultation Parent Assessment System (RC*PAS)*

As the RTL teachers' relationship with parents shifted toward a more collaborative model, they noted significant changes in parents' interactive and mediating behaviors as they played with their young children. They expressed a need for a systematic and objective means of measuring the targeted changes in parents' behaviors and attitudes that they were observing during parent–child interactions at the school. As a result, the RTL teachers and their consultants developed a criterion-referenced instrument for assessing parents' outcomes as a result of participation in the RTL program. The goal was to find a tool that would measure parent outcomes but would not be susceptible to misinterpretations based on cultural differences (McCollum & McBride, 1997) or the nature of the child's disabilities (Barnett, Butler, & Vondra, 1999). Specific parent outcomes that have been recognized as valid in the field of early intervention, regardless of the nature of the children's disabilities (Bailey, et al., 2006), were selected and incorporated into the criterion- referenced tool that was generated. It was named the Reciprocal Consultation Parent Assessment System (RC*PAS) and was used to record changes in parents' behaviors that reflected their progression through the four phases of reciprocal consultation as predicted by the Reciprocal Consultation Model (Kahn & Berchin-Weiss, 2006; Kahn & the RTL Staff of the Lexington School for the Deaf, 2006b). Objectives for demonstrating parents' progress focused on the six collaborative activities listed in Table 1.

The RC*PAS documented progressive changes in how parents participated, interacted with, and mediated during parent–infant play sessions and daily activities. The RC*PAS also provided a means for systematically sharing parents' progress with them and provided clear and constructive feedback about skills parents needed to enhance in order to work more effectively with their children and the program staff. The instrument was administered at the beginning of each school year and again toward the end of the school year. The ratings were based on the teachers' observations over several sessions prior to the time of the rating process. Results were summarized and shared with parents through the use of a Parent Participation Profile form. A comprehensive description for determining the ratings and for how to share the results with parents, as well as the forms that were actually used, are contained in the manual (Kahn & the RTL Staff of the Lexington School for the Deaf, 2006b), which is

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READY TO LEARN Parent Infant/Toddler Intervention Program

Child's Name: _____J_____ ID#:_____

Caregiver's Name: _____T_____ Teacher's Name: _____ ID#:_____

LEVELS OF ATTAINMENT	Goal # 2 Domain(s) GM, L Source(s): **P** T O Entry Level: **U** L Date Initiated 6/05 Date Resolved 9/05 Disposition: **A** DD DL Attainment Level: I **M** T L	**GOAL ATTAINMENT SCALE** **Domains Integrated in Goal** FF = Family Functioning SE = Socio/Emotional SH = Self-Help L = Language SP = Speech FM = Fine Motor GM = Gross Motor C = Cognition A = Audition **Source(s)** P = Parent T = Teacher O = Other **Entry Level** U = Unsatisfactory L = Less **Disposition** A = Attained DD = Discontinued – Didn't work DL = Discontinued – Left program **Attainment Level** I = Ideal M = More T = Target L = Less
IDEAL LEVEL	J will be a good athlete. Maybe take dance or gymnastics.	
MORE THAN ANTICIPATED LEVEL	J will be able to stand up and walk all over the house, park, and school.	
TARGETED LEVEL OF ATTAINMENT	J will walk a few steps by herself	
LESS THAN ANTICIPATED LEVEL	J will pull up to stand and "cruise" around mom and dad's bed, coffee table.	
UNSATISFACTORY LEVEL	J now likes to crawl, but really loves when mommy holds hands and she takes steps all over.	

FIGURE 1. Actual excerpt of the Goal Attainment Scale.

available from the Center for Mediated Learning at the Lexington School for the Deaf . Table 1 provides an example for each of the collaborative activities from the RC*PAS. In the appendix we have provided excerpts from the Teacher's Reference for the Parent Participation Rating Scale, the actual Rating Form, and the Parent's Participation Profile.

A pilot study designed to obtain formative data on the utility of the GAS indicated that it was a useful diagnostic tool for measuring child outcomes, parents' increasing participation in implementing planned activities, and some aspects of parent–teacher collaboration (Kahn & Berchin-Weiss, 2006). Subsequently, a larger study was undertaken to evaluate the

TABLE 1. RC*PAS Sections and Example Items

	Collaborative activity	Example item
1	Sharing knowledge	Parent reliably reports changes and current status of the family
2	Addressing child's hearing status and communication needs	Parent recognizes child's behaviors as his or her early communicative efforts
3	Determining goals and implementing intervention	Parent identifies the difference between direct experience and mediated learning experience
4	Participating in RTL sessions and meetings	Parent demonstrates leadership skills during educational and social meetings
5	Integrating knowledge of the diverse needs of deaf, hard of hearing, and hearing people	Parent understands different perspectives of deafness (cultural and medical models)
6	Collaboration during assessments and team meetings	Parent understands the value and limitations of assessment tools

usefulness of the GAS and RC*PAS as tools for measuring: (a) child outcomes, (b) incorporation of MLS in intervention activities, (c) the progress parents made in developing their knowledge base, (d) parents' interactive skills, and (e) parents' participation in the program. The results of that study are reported later in this article.

METHODS

Sample

The RTL program serves families with infants from birth to 3 years of age who are deaf or hard of hearing. The families come from the New York City area. Culturally, they are a very diverse population (e.g., Russian, Chinese, Indian, African American, Hispanic, etc.). Several families require translators because the family members are not fluent speakers of English. Others utilize sign language to communicate with the teachers and their own children. The economic status of the families varies considerably, ranging from middle-class families to those who require economic assistance. Each year there are several children in the program who have various special needs in addition to their hearing loss. The hearing losses of the children vary from mild to profound, and they use a variety of assistive hearing technology (e.g., hearing aids, Baha systems, FM systems, and cochlear implants). The RTL staff members who are providing the direct services to the families are certified teachers of the deaf with considerable experience.

The RTL teachers recognized that fostering active parent–professional collaboration would be a challenging process, particularly with families who come from cultures that believe that professionals are the experts and that they (the parents) do not have much to offer the intervention program. Early efforts to engage parents in reciprocal relationships resulted in the awareness that there was limited time available for developing meaningful collaboration during a birth to 3 years program. Therefore, family-centered early

intervention could not just rely on good will and good intentions. An infrastructure was needed to scaffold the development of this collaboration. Once a relationship was established, the teachers would be able to work on accomplishing and evaluating their goals to actively engage parents, influence their attitudes, enhance their interactive behaviors, and provide them with essential child development information. Creating the infrastructure required a theoretical foundation with tools and procedures that could be used to structure the collaborative process and provide a context in which it could flourish in a timely manner.

Since the Lexington School for the Deaf was already applying the mediated learning theory, as described by Feuerstein, as the basis for teaching and learning throughout the school, the RTL team decided to adopt mediated learning components of the Brighter Beginnings Program (Kahn, 1991). The components they incorporated were: (a) the mediated learning approach that Kahn (1992) had adapted from the sociocultural theories of learning and the clinical work of Feuerstein et al. (1980), Rogoff (1990), and Vygotsky (1978), and (b) the Reciprocal Consultation Model, a theoretical model originally developed for the family-centered Brighter Beginnings Program (Kahn, 1991).

Procedure

The GAS instrument was administered as part of the RTL program. Together the teachers and parents determined when stated goals had been achieved and when to target new ones. This was an ongoing individualized process that allowed the teachers to mediate with the parents and to offer the parents increasing opportunities to determine the goals of the program for their child and the methods and materials to be used during the intervention activities. The goals were worked on by the parent, or other caregiver, who brought the child and participated in the program. In most cases it was the mother, but some fathers and grandparents also were represented. Although teachers occasionally suggested goals, and worked with parents to clarify goals, the focus was on getting parents to initiate, that is, to be the source of the goals and to state them in their own words. Once goals were established, they were reviewed during the twice-weekly session as much as possible so that when they were accomplished new goals could be generated. In some instances parents chose to maintain a goal and to strive for attainment at a level above the originally targeted level.

The RC*PAS was administered periodically on a specified schedule. All parents were assessed after the first month of the school year and again in the last month of the school year. The assessment was based on the parent, or caregiver, who generally accompanied the child to the school and who had the primary responsibility for implementing the intervention at home. Teachers filled out ratings for criterion-referenced items based on their recollections of observations and interactions that occurred since the last time the instrument had been filled out. If they were not certain how to rate some items, they spent the next session observing the behaviors they were uncertain about.

RESULTS

Within the context of goal setting, as measured by the GAS, we were interested in examining the number of goals set, the variety of the domains in which the goals were set, who was primarily responsible for setting the goals, and whether the goals were attained.

Goal Attainment Scale Results

A total of 169 goals were set by 33 parents working with teachers in the RTL program. The domains most frequently integrated into individual goals were language (58%) and cognition (45%), with the language domain covering specific developmental goals and objectives related to receptive and expressive spoken and signed language. (The speech domain covered objectives related to oral speech production.) The two domains of language and cognition represented the major thrust of the program. Fine motor (3%) and gross motor skills (6%) were the domains that were least integrated into the goals, in large measure because almost none of the RTL children had serious motor disabilities. In terms of the source of the goals, that is, the person who initiated the goal, parents more typically initiated the learning goals (56%). This was in keeping with the family-centered focus of the RTL program. With regard to attainment of goals, 86% of the sample attained their goals at or above the targeted level. Table 2 provides the complete results for the GAS.

The results in Table 2 suggest that parents, in keeping with the program expectations, determined and implemented goals, acquired strategies for mediating their children's learning experiences, and participated actively in the intervention efforts of the program.

Results indicated that parents were active participants in determining goals for their children and that there was a high percentage of goal attainment at the targeted and above levels. The domains incorporated in the goals reflected the needs of the populations served and the focus of the RTL program. It is important to note that goals often covered more than one domain and that all the domains addressed were represented in the data.

All the children in the RTL program have a hearing loss; therefore, many children have delays in language development. This accounts for the expected and demonstrated findings that speech and language domains were the focus of a majority of the goals. Audition was another domain which was expected to be included on the GAS, particularly for children who required assessment of their hearing status and whose parents had to demonstrate their ability to use devices and strategies for improving their child's auditory capacity (e.g., assistive hearing devices). Since a major thrust of the intervention had been to enhance active learning and thinking in the child, it was also expected that the cognitive domain would be heavily represented.

The domain of family functioning was reserved for goals that addressed issues pertaining to parent–child interactions, social welfare concerns, and family dynamics. The finding that this was represented as an important domain supported the family-centered orientation of the program and was further demonstrated by the high percentage of goals whose source was the parent. Since most of the children in this sample of families did not present with delays in fine or gross motor development, it was not surprising to find that these domains were only addressed in a few instances. The high level of attainment of goals at the targeted or above-targeted level, and parents' contributions to the setting of goals, demonstrated that progress could be documented on the GAS forms, and suggested that the GAS tool supported the teachers' efforts to engage parents in the overall process.

Reciprocal Consultation Parent Assessment System Results

The data set of 36 cases consisted of 18 parents, each of whom was rated at two time points on the RC*PAS. A summary score was created for each participant at each time point by summing the items included in each of six collaborative activities (CA). The CA score was

TABLE 2. Results of the Goal Attainment Scale

	Total#	%
Goals implemented	169	100%
Mean per family	3.8	
Standard deviation	2.5	
Total number of families	33	
Domains integrated into goal		
Family functioning	20	12%
Socioemotional	9	5%
Self-help	10	6%
Language	98	58%
Speech	32	19%
Fine motor	5	3%
Gross motor	10	6%
Cognition	76	45%
Audition	40	24%
Source of goal		
Parent(s)	94	56%
Parent and teacher	20	12%
Parent and other	6	4%
Teacher	27	16%
Other	5	3%
Missing	17	10%
Entry level		
Unsatisfactory	97	57%
Less than satisfactory	66	39%
Missing	6	4%
Disposition		
Attained	148	88%
Discontinued—didn't work	6	4%
Discontinued—left the program	10	6%
Missing data	5	3%
Attainment level		
Ideal	3	2%
More than target	40	24%
Target	102	60%
Less than target	4	2%
Discontinued—left program	9	5%
Missing data	10	6%

then standardized (across all time points). In order to determine if gains were made from one time point to another, a dependent means *t*-test was run for each CA. In order to determine which CA showed the most gain over time, we created a gain score for each CA. An ANOVA was run on this gain score (because each scale was standardized and thus comparable). The subscales were standardized so that the means were equal to 50 and standard deviations equal to 10.

Dependent means *t*-tests were run for each of the collaborative activities comparing standard scores at Time 1 to those at Time 2. The results revealed that the changes over time were statistically significant at the $p < .01$ level for five of the six collaborative activities. The results are shown in Table 3.

The RC*PAS results indicated that parents' progress over time could be measured. Indeed, effect size estimates, computed using Cohen's *d*, revealed substantial gains over time in several areas, with parents increasing nearly one full standard deviation in performance over time on most subscales. Gains parents made were in keeping with the focus of the intervention efforts and represented considerable growth within the developmental phases measured by the RC*PAS during the year that parents participated in the RTL program. Indications were that they became significantly more proficient and knowledgeable in their ability to share information with the teachers (CA 1; $d = 1.08$), addressing their children's hearing and communication needs (CA 2; $d = 0.94$), determining goals and implementing interventions that required knowledge of mediating learning strategies and the cognitive actions of their children (CA 3; $d = 1.02$), participating in social and educational meetings sponsored by the RTL (CA 4; $d = 1.11$), and in collaborating during assessment and team meetings (CA 6; $d = 0.74$).

The one CA, CA 5 (integrating knowledge of the diverse needs of deaf, hard of hearing, and hearing people), that did not show significant gains, was one that required repeated

TABLE 3. Results of Dependent Means *t*-Tests for Each Collaborative Activity Subscale on the RC*PAS

Collaborative activity	Pretest Mean	Pretest *SD*	Posttest Mean	Posttest *SD*	*T*	Sig	Cohen's *d*
1. Sharing information	45.2	10.1	54.8	7.5	–3.3	$p < .01$	1.08
2. Addressing children's hearing status and communication needs	45.7	8.6	54.3	9.7	–2.8	$p < .01$	0.94
3. Determining goals and implementing interventions	45.4	8.9	54.6	9.1	–3.1	$p < .01$	1.02
4. Participating in RTL sessions and meetings	45.1	8.9	54.9	8.7	–3.3	$p < .01$	1.11
5. Integrating knowledge of the diverse needs of deaf, hard of hearing, and hearing people	47.9	9.7	52.1	10.1	–1.3	*ns*	0.42
6. Collaboration during assessment and team meetings	46.5	7.8	53.5	10.9	–2.2	$p < .05$	0.74

Note. $N = 36$ cases, 18 families (each measured two times). Each scale is standardized to have a mean of 50 and a standard deviation of 10.

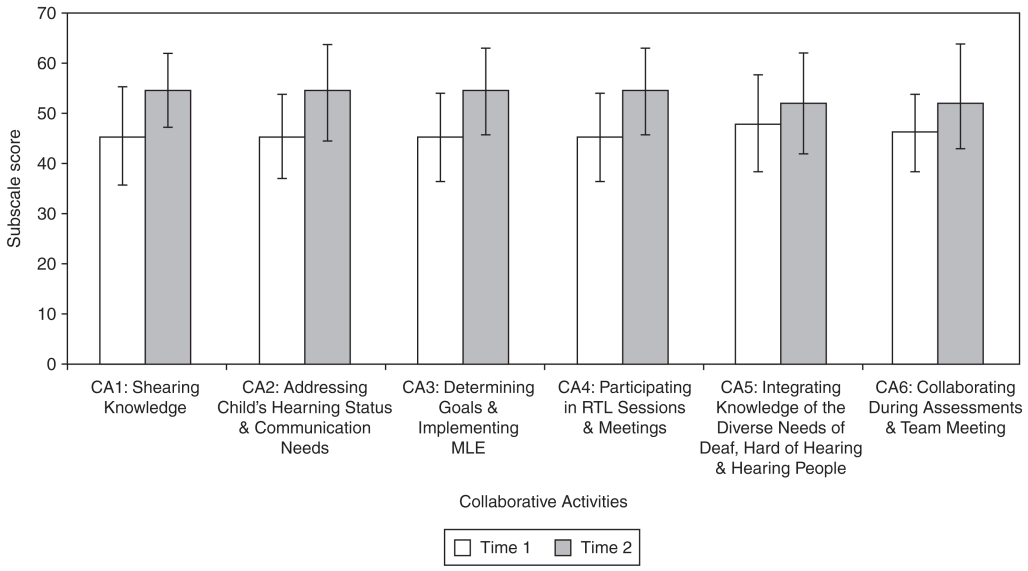

FIGURE 2. Gain over time by collaborative activity on the RC*PAS.

Note. Subscales standardized to $m = 50$, $sd = 10$; all gains over time were statistically significant at $p < .05$ except for CA5 (*ns*).

experiences with other program participants and changes in attitudes for many of the hearing parents who were just starting in the program. For the most part, the deaf parents in the program had previous exposure to parents and children with hearing loss and may have started at higher phases in their developmental trajectory, therefore also evidencing fewer gains over time. Repeated measures of this CA should clarify why this CA showed less significant gains than the other five CAs. Figure 2 presents a graphical representation of these results.

CONCLUSIONS

These preliminary results of the GAS data and the two administrations of the RC*PAS indicated that the instruments that were used to guide and structure the process of family-centered early intervention can also be used as a sources of formative and summative evaluation data. These instruments also provided systematic diagnostic and evaluative information that was useful for the RTL staff and the program evaluators. For purposes of the RTL program, the two instruments provided structured experiences that allowed teachers to use a scaffolding approach for enhancing parent–professional relationships and teaching parents specific skills that they needed in order to participate in this consultative format. The structure and procedures used to complete the GAS, and the feedback provided by the Parent Participation Profile of the RC*PAS, appear to have enabled parents to expand their knowledge base and skills by building on what they could already do and providing what they needed to learn to enhance their interactions with their children during carefully calibrated intervention sessions. The results also suggested that it was possible to use these instruments and procedures to create an infrastructure that promoted collaboration between service providers and parents and enhanced parents' participation.

Results of the GAS indicated that there were high levels of goal attainment at the targeted level or above. This suggests that the goals were developmentally appropriate and reflected good awareness of what the infants and toddlers could achieve if they were provided with adequate MLE. The percentages of goals addressing specific domains, particularly language and cognition, were in keeping with the needs expressed by the parents in this sample and with the special developmental and educational needs that the infants and toddlers displayed. In addition, the finding that the source of over half the goals was the parent, and that the teachers initiated less than 25% of the goals, indicated that the programmatic efforts to engage parents and to address goals that were meaningful to them were successful. The results also indicated that issues of family functioning, as they related to the infants' or toddlers' development and well-being, could be addressed in the context of family-centered early intervention.

This study has some limitations that we hope can be overcome with future studies. Additional data is needed to determine whether the gains obtained in this study will continue to accrue over a longer time span. In addition, the use of the RC*PAS needs to be replicated to determine if its usefulness as a diagnostic and evaluative tool can be generalized to other programs serving children with different special needs. The issue of interrater reliability is also of concern. In the present circumstances it was not possible to have an independent rater observe all of the interactions that took place and provided the data for teachers' ratings of the parents. It is clear that eventually that issue will have to be resolved. It is important to note that all of the parents did agree with teacher's ratings, as summarized on the Parent Participation Profile of the RC*PAS, when these summaries were presented to the parents and they were encouraged to discuss the ratings and suggest modification or alternative views. In a similar manner, parents and teachers did not document a goal as attained unless both of them agreed that the targeted level had been achieved.

This study contributes to the literature by demonstrating that a criterion-referenced instrument, such as the RC*PAS, can be developed and effectively used to measure the five family outcomes identified by Bailey et al. (2006). Furthermore, in keeping with Hoover-Dempsey et al.'s (2005) recommendations, results of this study indicate that these instruments can be used to effectively communicate with parents and to motivate and encourage them to be active mediating participants in their children's learning opportunities. Furthermore, the results suggest that these instruments did function as an infrastructure that allowed parents to share their expertise and to participate in planning interventions that were compatible with their culture and values.

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APPENDIX

A.1

Phase I – Getting to Know One Another

Collaborative Activity 3: Determining Goals and Implementing Intervention

Objectives for parents	Evaluation sources	Evidence
1. Parent participates in the goal setting process using the Goal Attainment Scale (GAS).	Dialogue GAS form	• Parent answers questions • Parent comments • Parent contributes ideas for levels of GAS • Parent expresses concerns he/she wants to address • Parent identifies specific developmental domains
2. Parent participates in developing the Goal Attainment Plan (GAP).	Dialogue GAP form Teacher's observations	• Parent contributes ideas for activities for GAP • Parent shares methods/ materials successfully used in the past
3. Parent implements GAP activities with teacher support.	Dialogue GAP form Teacher's observations	• Parent imitates teacher's interactions with child during GAP activities • Parent implements GAP activities during individual sessions • Parent reports implementation at home
4. Parent identifies the difference between Direct Experience (DE) and Mediated Learning Experience (MLE).	Dialogue Teacher's observations	• Parent recognizes intentionality, reciprocity, and shared focus • Parent distinguishes when interactions are mediated and when they are not

A.2

PHASE II – Establishing Team Effort

Collaborative Activity 3: Determining Goals and Implementing Interventions

Objectives for parents	Evaluation sources	Evidence
1. **Parent contributes to the development of at least one level of the GAS.**	Dialogue Teacher's observations	• Parent recognizes developmental progression of GAS levels • Parent provides ideas for developing any levels of attainment.
2. **Parent implements GAP activities during individual sessions.**	Teacher's observations Video	• Parent comments • Parent imitates teacher's demonstrations • Parent implements strategies/ activities on the GAP during individual sessions
3. **Parent implements MLE concepts of Intentionality.**	Dialogue Teacher's observations	• Parent initiates interaction • Parent selects materials that will support or evoke specific behaviors • Parent persists in trying to maintain interaction • Parent states intention
4. **Parent implements MLE concepts of Reciprocity.**	Dialogue Teacher's observations	• Parent follows child's lead • Parent uses materials and actions to engage child in shared focus • Parent promotes turn taking • Parent encourages sharing
5. **Parent implements MLE concepts of Shared Focus.**	Dialogue Teacher's observations	• Parent attracts the child's attention • Parent attends to what the child shows interest in • Parent willingly follows child's initiation

A.3

Parent Participation Profile
Ready to Learn, Parent/Infant Program
Parent Progress Report

Date: **Parent:**

Teacher: **Child:**

Collaborative activity 1: **Sharing knowledge –**
Reporting, receiving, and using information.

Parent currently:

Parent needs to:

Collaborative activity 3: Determining Goals & Implementing Mediated Learning Experiences –
Developing knowledge of Mediated Learning Experience Theory

Parent currently:

Parent needs to:

A.4

Name of Parent:_____ **Name of Teacher:**_____

RC*PAS
Ready To Learn
Parent Participation Rating Scale

Collaborative Activity 3: Determining Goals and Implementing Intervention

Ratings						Comments
N/A	**0**	**1**	**2**	**3**	**Phase I: Getting to know one another** p. 35–36	
					1. Parent participates in the goal setting process using the Goal Attainment Scale (GAS)	
					2. Parent participates in developing the Goal Attainment Plan (GAP)	
					3. Parent implements GAP activities with teacher support	
					4. Parent identifies the difference between Direct Experience (DE) and Mediated Learning Experience (MLE)	
					5. Parent recognizes need for Mediated Learning Experience (MLE)	
					6. Parent identifies child's thinking abilities	
N/A	**0**	**1**	**2**	**3**	**Phase II: Establishing team effort** p. 37–38	
					1. Parent contributes to the development of at least one level of the GAS	
					2. Parent implements GAP activities during individual sessions	
					3. Parent implements MLE concepts of Intentionality	
					4. Parent implements MLE concepts of Reciprocity	
					5. Parent implements MLE concepts of Shared Focus	
					6. Parent implements specific MLS	
					7. Parent recognizes and evokes Cognitive Actions (CAs) child needs to accomplish the objective	

Rating Key: N/A = not applicable 0 = no 1 = emerging 2 = sometimes 3 = yes/shows mastery