

Best Practices in Assessment of Intervention Results With Infants and Toddlers

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Prepared for Inclusion in

A. Thomas & J. Grimes, Best Practices in School Psychology IV

National Association of School Psychology

Running Head: INFANTS AND TODDLERS

[1]Overview

Public policy (PL 99-457, amended by PL 102-119) mandates that preschool aged children with disabilities and their families receive early intervention services, and many states have extended these services to families with infants and toddlers (DEC, 1993). While states vary with regard to the ways in which they identify and serve infants and toddlers with developmental needs, the school psychologist often serves a key role in determining eligibility for services, linking children and families to appropriate interventions, and then determining whether interventions are truly meeting children's and families' needs. This chapter focuses on the role of the school psychologist in carrying out those functions. Specifically, the paper will describe the basic knowledge and skills school psychologists need in addressing the unique challenges in assessing infants and young children. Then the chapter focuses on the emerging area of assessing early intervention results and offers a specific approach for progress monitoring for infants and toddlers being developed by the Early Childhood Research Institute on Measuring Growth and Development (ECRI-MGD).

[1]Basic Considerations

Infants and toddlers present an array of challenges to the school psychologist who is attempting to determine whether a child is eligible for early intervention services, for what programs the child is best suited, and then whether the early intervention services are making a difference in improving the child's developmental outcomes. These challenges include but are not limited to what follows: first, the difficulty most young children have complying with a predetermined structured protocol in light of the need for comparing children across somewhat standardized conditions; second, the need for assessors to gather representative samples of

children's behavior in light of the short amount of time infants and toddlers will stay engaged with a task; third, the need to elicit information about what skills young children can perform in light of the difficulty many young children have with unfamiliar adult assessors or novel situations; and fourth, the need to include the perspective of parents regarding children's skills, needs, and progress in light of the limited amount of time family members have for providing this type of information (Preator & McAllister, 1995; ECRI-MGD, 1998b).

For young children with developmental delays, the critical characteristics and recommended practices of assessment were described in Division for Early Childhood's (DEC) 1993 report, "Recommended Practices: Indicators of Quality in Programs for Infants and Young Children With Special Needs and Their Families." Among the criteria for evaluating recommended assessment practices cited in this report were the following: (a) They should point to behavioral objectives for change that are judged important and acceptable, (b) they should guide change in treatment activities, (c) they should incorporate several instruments and scales including observation and interviews, (d) they should incorporate input from parents, and (e) they should be used on multiple occasions (Neisworth, 1993). Clearly, psychologists and interventionists qualified to assess infants and toddlers must have a range of specialized knowledge/skills that goes beyond the administration of standardized tests.

[2]Background Knowledge and Skills

Examiners must be knowledgeable about the unique challenges of assessing young children and understand the developmental milestones of early childhood. Because infants and toddlers are just learning to communicate, talk, interact, and move, the behaviors to be assessed and the methods employed to conduct assessments are different and specialized when compared

with those of older children. Psychologists' skills using naturalistic observational and play-based assessment are particularly important because they are more likely to engage young children's attention, reduce children's fears, and set the context for children to emit a range of developmentally appropriate skills compared to traditional testing methods. Skills with measures capable of tapping sources of information from the parent and other caregivers are equally important because of their unique and detailed knowledge of what the child in their care knows and what their child can do. School psychologists must also be prepared to work with colleagues across disciplines and settings that typically serve infants and toddlers. Specifically, examiners must be experienced working with parents, early intervention teachers and service coordinators, pediatricians/nurses in the medical center, ancillary staff such as occupational therapists and speech and language pathologists in the clinic, and childcare professionals in community-based settings.

While this set of skills broadly outlines some of the competencies needed by school psychologists in working with infants and toddlers, there is a critical need to move beyond determining eligibility and linking children and families to programs. With the current national focus on accountability for services, taxpayers and policy makers and parents want to know that services provided are effective (Kagan, Rosenkoetter, & Cohen, 1997). In response, states have scrambled to develop accountability systems for children receiving early intervention and preschool services. Thus school psychologists must have the knowledge and skills to assess the results of early interventions.

[1]Progress Monitoring and Problem-Solving Concepts and Skills

School psychologists are often in critical positions to determine whether children are

truly benefiting from the early intervention services they receive. Thus, there is a growing realization that psychologists who work with the youngest children and their families must have the competencies to examine whether these children are making progress as a function of these services. The general and specific concepts of progress monitoring and the problem-solving models that are described by Dave Tilly, Roland Good, Scott McConnell, and others elsewhere in this volume are also relevant to work with infants and toddlers. School psychologists need knowledge and skills in nontraditional approaches to assessment that are sensitive to the incremental growth that children will experience within early intervention programs. Three types of assessment particularly relevant to child-based intervention are behavioral assessment, mastery monitoring, and general outcome measurement. *Behavioral assessment* is measurement linked to one or more target behavioral objectives. *Mastery monitoring* is measurement linked to skills in a task analysis hierarchy with skills taught one at a time. In this approach, new assessment is applied to each new skill. *General outcome measurement* (GOM) is assessment linked to a range of key skill elements with the same skill set assessed each time (Deno, 1997). Progress is indicated by change/growth in single behaviors (performance monitoring), or skills (mastery monitoring), or increased proficiency on a set of key skill elements (general outcome) that are repeatedly measured. For infants and toddlers, measures must include the following domains targeted through early intervention: communication/language, motor/movement, social interaction with adults and peers, cognition/problem solving, and adaptive/self-help (e.g., Hebbeler, Simeonsson, & Scarborough, 2000; Priest et al., 1998).

Additionally, school psychologists need skills and resources to determine how to change an intervention when it does not appear to be working. They need to be knowledgeable about a range of methods to explore solutions and change intervention strategies designed to affect

growth in progress monitoring measures (ECRI-MGD, 1998b). These assessment activities may include observing child-caregiver interaction in natural settings, directly assessing child skills during their typical activities and routines, and/or evaluating features of the particular program(s) in which the child is enrolled. Such measures could then be used to form intervention hypotheses such as changing parent and caregiver interaction to increase growth in language or altering the childcare environment to facilitate more opportunities for communication. Intervention changes such as these may then result in accelerated child progress.

[2]Why is Assessment of Intervention Results Important?

Quite clearly, the assessment of intervention results is important because of the usefulness of this process in providing direction about early intervention for young children. A fundamental tenet of educational psychology is that the success of any instructional intervention should be based on its effect on learning; and that future intervention be modified based on whether the child changes, grows, or learns (Corno & Snow, 1986). Over the last 20 years, the most dramatic methodological advance regarding assessment that is sensitive to instructional interventions has been the development of Curriculum Based Measurement (CBM) (e.g., Shinn, 1989). The CBM measures of reading in school aged children, for example, based on the work of Deno and his colleagues (Deno, 1997) have been demonstrated to be valid, reliable, and sensitive to instructional interventions. Similar measures have recently been developed for use with younger children (e.g., Kaminski & Good, 1996) to assess emergent literacy skills. And, more recently similar measures have been developed for measuring growth of infants and toddlers (Luze, Linebarger, Greenwood, Carta, & Walker, 2000) among others (see Table 1). An example

of the application of “CBM-like” measures in the area of expressive communication of infants and toddlers appears later in this chapter.

TABLE 1

[2]Why Are Current Measures Not Adequate for Assessing Intervention Results?

According to Bagnato and Neisworth (1991), individual program planning to bring about change in child performance is the ultimate goal of early intervention services for infants/toddlers and their families. Yet, traditional forms of early childhood assessment often do not provide information useful in intervention development and making individual programming decisions. In traditional assessment frameworks, assessment and intervention are often treated as completely separate activities (Meisels, 1996).

For example, *eligibility* for services is the first-order question answered by traditional forms of testing (Bagnato & Neisworth, 1991). While norm-referenced measures are appropriate for comparing an individual child against an established norm group to determine a delay or discrepancy from the norm, they do not provide information appropriate for intervention development. If a child is determined to be eligible, then a new set of assessments is given including criterion-referenced tests, interviews and questionnaires with parents, and formal/informal observations of the child’s behavior in home and school settings to determine a child’s *needs*. Criterion-referenced tests (e.g., Assessment, Evaluation, and Programming System for Infants and Toddlers (AEPS) (Bricker, 1993) can provide some information for determining a child’s specific needs and aid development of the Individualized Family Service Plan (IFSP)/Individualized Education Plan (IEP).

Then, after a need is identified and an intervention developed, a new set of assessment tools is used or developed for *progress monitoring* and *evaluation of growth*. Norm- and

criterion-referenced tests are often used to evaluate the effectiveness of a program or intervention. Unfortunately, none of these measures can be used frequently enough by early interventionists to plan and evaluate in an ongoing formative way the interventions used with individual children. These separate steps and sets of tools in the traditional model usually provide information adequate enough to answer the questions being asked (i.e., eligibility, need, progress), but they are not linked in a synergistic and efficient manner. Parents, teachers, support personnel, and children often spend too much time and effort in the collection of all of this information with too little benefit (McConnell, 2000). This often results in a process of information collection that is redundant and not useful for intervention purposes.

School psychologists have been encouraged to help resolve this pervasive problem in the assessment of intervention results for young children. According to Bagnato and Neisworth (1991), the solution encompasses the following: (a) tailoring assessment to the individual needs of each child, (b) determining eligibility for services, (c) linking assessment with early intervention, and (d) communicating assessment results to parents and other professionals.

Assessment approaches of this type such as CBM or Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (Kaminski & Good, 1996) for kindergarten and school-aged children have only recently emerged for use with very young children (ECRI-MGD, 1998a; Luze et al., 2000).

One explanation of the late emergence of intervention-linked assessment and decision-making models in early childhood are the unique challenges in working with young children described above. But another reason that this approach has been slow to influence early intervention has been the difficulty in translating the general outcome model of curriculum-based measurement to the relatively unstructured “curriculum” of interaction and play that children experience in their homes, childcare environments, and early intervention settings. For the most

part, the curriculum that has been the focus of CBM has been academic/literacy skills.

Determining the curricular focus of CBM for very young children in the absence of standardized curricular areas has been puzzling. What key skill elements should be assessed for children 6, 12, 18, 24, 30, or 36 months of age? Which general outcomes and key skill indicators are needed?

The emerging solution of this problem has been to measure multiple behaviors known to be indicators of the general outcome and known to change over a particular period of early childhood (ages 0–3) and to evaluate a child’s proficiency with these skills at a particular age against peer norms and rate of growth over time. In conclusion, any system used for assessing intervention results for infants and toddlers must address the challenges of working with younger children and at the same time overcome the limited applicability of existing assessment tools.

[1] Best Practices for Intervention Results with Infants and Young Children

Best practices in the assessment of intervention results with infants and toddlers involve use of a decision-making framework with GOM progress monitoring to guide and adapt interventions. The particular advantages of this approach include (a) repeated measurement of progress in the natural setting, (b) graphical representations of the data that provide direction about the intervention, (c) tools that allow improved communication with parents and collaborating professionals, and (d) the ability to assess immediate growth in the absence of a detailed specification of objectives/skills sequences as are needed in both behavioral assessment and mastery monitoring approaches. Use of a decision-making model with GOM progress monitoring also meets the best practice criteria used by DEC (1993) in its selection of recommended practices. DEC criteria include the following: a research- or value-basis, a family centered focus, a multicultural emphasis, cross-disciplinary participation, developmental

appropriateness, and a normalized experience.

An example of such a system is one currently being developed by the Early Childhood Research Institute on Measuring Growth and Development (ECRI-MGD, 1998b). It is a decision-making model supported by GOMs and has been specifically designed and validated for use with infants and toddlers (see Figure 1). This system is based on a series of descriptive, correlational, longitudinal, and experimental intervention studies that validated general outcomes and that developed and then established the psychometric properties of the measures of each outcome, including technical adequacy and peer norms (Priest et al., 1998; Luze et al., 2000).

Embedded throughout the decision-making model are multiple points of input, choice, and evaluation from the family so that they can participate in decisions regarding the need for the intervention, the type of intervention, the effectiveness, and whether they are satisfied with the intervention (see shaded areas, Figure 1). The model meets the DEC multicultural criteria primarily because it can be used in the context of any language, and the tasks and materials used are those typically available in most modern cultural contexts. In addition, the model and measures were developed with input and participation from a diverse group of families representing a wide range of ethnic and sociodemographic backgrounds. Participation of a range of disciplines and professional practitioners in the program of any one child is supported through specific planning steps, measurement activities, and decision points in the Exploring Solutions section of the model. The model is developmentally appropriate and normalized because the contexts for assessment allow children to engage in toys and interact in unstructured situations that are fun and typical for their age.

FIGURE 1

The ECRI-MGD decision-making model has several features in common with similar problem-solving models (e.g., Deno, 1989; Kaminski & Good, 1996). Five major steps are completed that lead from identification of a performance problem to the determination of whether or not the problem has been solved. These steps are (a) identifying the problem, (b) validating the problem, (c) developing and implementing a potential solution, (d) evaluating whether or not the solution is working, and (e) evaluating whether or not the problem has been solved. Two distinct forms of assessment are used: Individual Growth and Development Indicators (IGDIs) (the left most column in Figure 1) and Exploring Solutions Assessments (ESAs) (the right most column in Figure 1). The IGDIs are used to monitor growth and proficiency over time, and the ESAs are designed to inform intervention planning and implementation activities.

Selecting a general outcome of concern and then monitoring its progress by using the appropriate IGDI provides the basic information on an individual's level and rate of growth, thus supporting decisions of problem identification and problem validation. ESA activities fulfill an array of functions from targeting interventions with the highest likelihood of success to measuring their fidelity and ability to accelerate progress as measured by the IGDI (refer to Figure 1).

[1]Case Study: Ray

To illustrate the applicability of the ECRI-MGD decision-making model, we offer the case of Ray. Ray is a 2 ½ year-old boy attending Little Kids, Inc., a community childcare center. His teacher reported that his communication appeared immature and delayed for his age. This was a concern given that expressive communication is a general outcome of early childhood and

plays a critical role in cognitive and social development (Acredolo & Goodwyn, 1988; Carpenter, Mastergeorge, & Coggins, 1983; Crais & Roberts, 1996).

While Ray used gestures and vocalizations to communicate with the teacher and his peers, he used only a few words regularly and did not put words together in sentences. The teacher talked with Ray's mother who observed these patterns of behavior at home. The teacher approached the early intervention team and requested an assessment and support services. As a member of this team, the school psychologist came to the center to meet with Ray's teacher and mother and to assess his needs.

Because the concern was in the area of communication, the psychologist decided to assess the child's expressive communication by using an IGDI for communicative expression (Luze et al., 2000). This IGDI involved Ray and his teacher playing with a toy house and people for six minutes while the psychologist recorded the frequency of occurrence of key element skills (i.e., gestures, vocalizations, single words, and multiple word utterances) that have been identified in prior research as important indicators of a child's expressive communication (e.g., Acredolo & Goodwyn, 1988). These tallies were converted to rate per minute and graphed (see Figure 2). During the first assessment Ray produced only five communicative behaviors per minute, and all of these were prelinguistic in nature (i.e., gestures and utterances). Because the graph contained a benchmark mean level of 15 communication behaviors per minute (the average for similarly aged children) (Luze et al., 2000), it was clear that Ray's skills were below age-expectancy.

FIGURE 2

To provide a sense of Ray's rate for growth over time, the psychologist returned five more times in the next several weeks to gather five more assessments of communicative

expression. These results documented that his level of communication was lower than his peers and provided an estimate of rate of growth. Furthermore, his results showed that his rate of total communication was actually a decreasing trend line (see Figure 2). The psychologist also gave a standardized language measure, the Preschool Language Scale (Zimmerman, Steiner, & Pond, 1992) to cross-validate information gathered from the IGDI. The standardized language test showed Ray's scores to be below the norm. These data were shared with Ray's mother and his teacher, and because they concurred with the IGDI assessment, the team decided to plan and implement an intervention designed to improve his expressive communication skills.

As part of their intervention planning, the team reviewed an inventory of clinical queries to determine what was already known about Ray's communication delay and what types of information they needed (see Table 2). Working together, they explored issues of possible medical concerns; previous interventions or assessment information; Ray's specific communication skills; the range of settings, activities, routines, and curricula that might prove important in influencing his communicative performance; possible behavior problems potentially interfering with Ray's communication; and potential persons and settings appropriate for inclusion in the intervention.

TABLE 2

Completing and ruling out most of these potential concerns, the school psychologist decided to observe Ray in his childcare center, and to examine his communication skills as well as his opportunities to communicate there. She used the Program Features Checklist to determine how the center was organized and how it might be designed to influence Ray's communication. The Program Features Checklist is designed to examine the structural characteristics of the center (caregiver-child ratio, toys accessible), interactions with the caregiver (following the

child's lead, asking questions, taking turns, missing opportunities to respond), use of discipline, classroom activities (use of daily creative play, daily reading time, encouraging social interaction, using predictable transitions), and toys and materials (encourage social and pretend play, exploration, music, and movement exploration). The results showed that Ray's teachers asked relatively few questions, responded infrequently when he used gestures to communicate, and did not provide him with comments or labels for his actions or the objects he used. These features are considered highly important for promoting language development (e.g., McCathren, Warren, & Yoder, 1996; McLean, 1990; Wetherby & Prizant, 1992).

An additional ESA was completed to provide more information about teacher-child interactions in the classroom. This measure, the Code for Interactive Recording of Caregiving and Learning Environments (CIRCLE) (Atwater, et al., 1993), is a behavioral assessment tool that provides information about the ecology of caregiving environments, the behavior of caregivers, and the child's engagement with people and objects within the setting using a time sampling procedure. Use of the CIRCLE indicated that most of the teacher's communication with Ray consisted of verbal instructions or talk directed at him as part of a large group of children. There were few interactions directed exclusively toward him. In addition, teachers did not appear to be expanding on his verbalizations, prompting him to use words, or engaging in much positive feedback. They seemed to miss many opportunities to facilitate his communication. These data also demonstrated that when Ray did communicate with teachers and peers, he used gestures and vocalizations.

Data from these two measures provided the necessary information to formulate a practical and potentially viable solution. The team reconvened, reviewed the information, and decided to implement an intervention with the goal of increasing Ray's imitation of vocalizations

and single and multiple word utterances by requiring him to request preferred objects or activities. To meet the goals, the team decided on strategies obtained from a modified Milieu Language Training program (Alpert & Kaiser, 1992; Yoder et al., 1995). Teachers were encouraged to follow Ray's lead during interactions, ask more open-ended questions, expand on his utterances, and use a delay to encourage Ray to fill in the missing words (e.g., When singing a familiar song, pause and then let Ray complete the phrase). The team decided to implement the intervention during snack time. During other times, the teacher could still use the intervention activities, but these activities were targeted for full implementation of the strategies. In addition, the team considered it important to identify what specific steps of the intervention were being implemented consistently and which ones were not. As a result, data were collected about the frequency of use of the intervention strategies during the scheduled time to evaluate fidelity of implementation (Figure 3). This information would be helpful to determine what aspects of the intervention were having the most impact on the rate of growth in Ray's communication.

FIGURE 3

The intervention was implemented for 5 weeks and then evaluated. At that time, the team examined the IGDI data again and noted that Ray had made some progress (see Figure 2: Intervention), but not as much as had been anticipated to meet the target goal of 15 communications per minute. The Program Features Checklist was used again, and this time the data indicated that the teacher continued to miss opportunities to respond to Ray's communication. The teacher noted that she would try to look for those opportunities in the future and would extend the intervention strategies to Ray's snack and lunch times.

The modified intervention was implemented for another 6 weeks during which weekly progress measures were employed. At the end of the intervention period, the team re-examined

the IGDI data and found that Ray had made acceptable progress toward the goal of 15 communications per minute; in fact, he had surpassed the goal (see Figure 2: Modified Intervention). CIRCLE data showed that the teacher was using more open-ended questions, and was providing more frequent comments and labels for Ray's actions and more statements of approval (Figure 4). The CIRCLE data also showed that Ray was using words more frequently and using gestures less frequently. The Program Features Checklist data indicated that the teacher was asking more questions, and commenting more on his words and actions. Fidelity of implementation data showed that the teacher implemented more of the steps during the intervention phase compared to baseline, but implemented even more during the modified intervention phase (see Figure 3). The teacher reported that she felt comfortable continuing the intervention and the mother noticed an improvement in his communication at home. The team decided that the solution was working and wished to continue the intervention for an additional 6 weeks.

FIGURE 4

Illustrated in this case study is the entire decision-making model and the interplay between the separate IGDI and ESA data collection measures. By using a progress monitoring measure on a continual basis, the team was able to determine Ray's needs and when it was necessary to change the intervention. The ESA tools enabled the team to collect data that were directly relevant to the intervention while monitoring variables that could be changed. As a result, they were able to work much more efficiently and effectively than would have been possible with other assessment tools.

[1]Summary

School psychologists play an increasingly important role in the assessment of intervention results for infants and toddlers. Working across a wide range of disciplines, professionals, and settings that cater to the unique needs of this population, school psychologists can use more sensitive tools for identifying needs, implementing interventions, monitoring growth and progress, and adapting interventions for very young children. The background knowledge and skills needed to assess intervention results with this population go beyond that use of standardized testing associated with traditional psychometrics. Two sets of competencies are critical to meet this need: one, the use of observational and naturalistic methods for progress monitoring and problem solving; and two, detailed knowledge of the intervention strategies used to improve the outcomes of young children.

Working with a population of children who are often apprehensive about new people and novel situations requires familiarity and skill using assessment approaches that are highly consistent with the natural and typical experiences of early childhood. Methods for monitoring progress are needed that (a) overcome the difficulty of having younger children follow a predetermined protocol for long periods, (b) incorporate input from parents and caregivers in order to obtain a more complete picture of younger children's abilities, and (c) are capable of obtaining representative samples of children's abilities in a short amount of time.

Best practices in this area, like those of the ECRI-MGD, are currently focused on general outcome measurement approaches used in problem solving models because they facilitate improved communication with caregivers and parents, and are sensitive, efficient, and cost-effective. They also provide a common set of indicators for each general outcome, maintain an individualized focus on current skills and developmental functioning, and support the spirit of IFSP/IEP. Emphasis is on repeated measurement, monitoring rate of progress, and changing

intervention when progress is less than expected. Because of their extensive experience and background with the use of progress monitoring and problem-solving models, school psychologists can play a critical role in developing, promoting, and using these approaches in early childhood. In conclusion, the ECRI-MGD decision-making model appears to be a highly useful approach for linking assessment with intervention for infants and toddlers in effective and desirable ways. The approach is consistent with current research, public policy, and DEC recommended practice.

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This chapter provides fundamental arguments for monitoring the development of individual children. After laying out the rationale for monitoring the progress, one occasion to the next, two approaches are compared: mastery monitoring versus general outcome measurement. These approaches can be highly structured, precise, and lead to improved outcomes and communication.

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This chapter provides an overview of issues related to assessment and intervention with infants and toddlers. After describing different types of assessment and important developmental issues related to assessment, the relationship between assessment and intervention processes (different ways assessment can be tied with intervention) is further specified.

McConnell, S. R. (2000). Assessment in early intervention and early childhood special education: Building on the past to project into the future. *Topics in Early Childhood Special Education*, 20, 43–48.

This article discusses themes likely to mark early childhood special education into this century. Two are relevant to the assessment of infants: intensified attention to assessment of progress and

growth of individuals and groups and linkage between assessment and intervention practices
reducing the uncertainty about when and how to intervene.

Luze, G. J., Linebarger, D. L., Greenwood, C. R., Carta, J. J., Walker, D., Leitschuh, C., &
Atwater, J. B. (in press). Developing a general outcome measure of growth in the expressive
communication of infants and toddlers. *School Psychology Review*.

This article reports the development/technical adequacy of two general outcome measures
designed to measure children's growth in expressive communication for children birth to 36
months of age. Results of this longitudinal study of the first 9 months of life include indices of
reliability, validity, and sensitivity to growth over time.

McLean, M., Bailey, D. B., & Wolery M. (1996). *Assessing infants and preschoolers with
special needs*. Columbus, OH: Merrill.

This book provides a comprehensive discussion of current assessment practices for infants,
toddlers, and preschoolers with special needs. In addition to description of practices, emphasis is
placed on current practices in the field that are preferred. Just one of these is involvement of
families and family-centered practice.

Table 1.
Key Skill Elements in Five Different General Outcome Measures for Infants and Toddlers.

Expressive Communication	Social Interaction	Movement	Manipulation	Cognition	Adaptive Behavior
<ul style="list-style-type: none"> ▪ Gestures ▪ Vocalizations ▪ Single words ▪ Multiple word utterances 	<ul style="list-style-type: none"> ▪ Adult social turn ▪ Peer social turn ▪ Negative interaction 	<ul style="list-style-type: none"> ▪ Transitional movement ▪ Locomotion <ul style="list-style-type: none"> ▪ Grounded ▪ Vertical 	<ul style="list-style-type: none"> ▪ Reach/grasp/release ▪ Compound manipulation 	<ul style="list-style-type: none"> ▪ Attention ▪ Problem solving 	<ul style="list-style-type: none"> ▪ Self-help

^a In development.

Table 2.

Clinical Concerns Guiding Exploring Solutions Assessment Decisions.

- History with child
 - Medical issues
 - Family/caregiver concerns
 - What child knows and can do
 - Settings, activities, routines, curriculum
 - Child/caregiver interaction
 - Competing or interfering behaviors
 - Barriers to intervention implementation
 - Fidelity of implementation
-

Figure Captions

Figure 1. ECRI-MGD decision-making model.

Figure 2. Ray's expressive communication measure by using an IGDI.

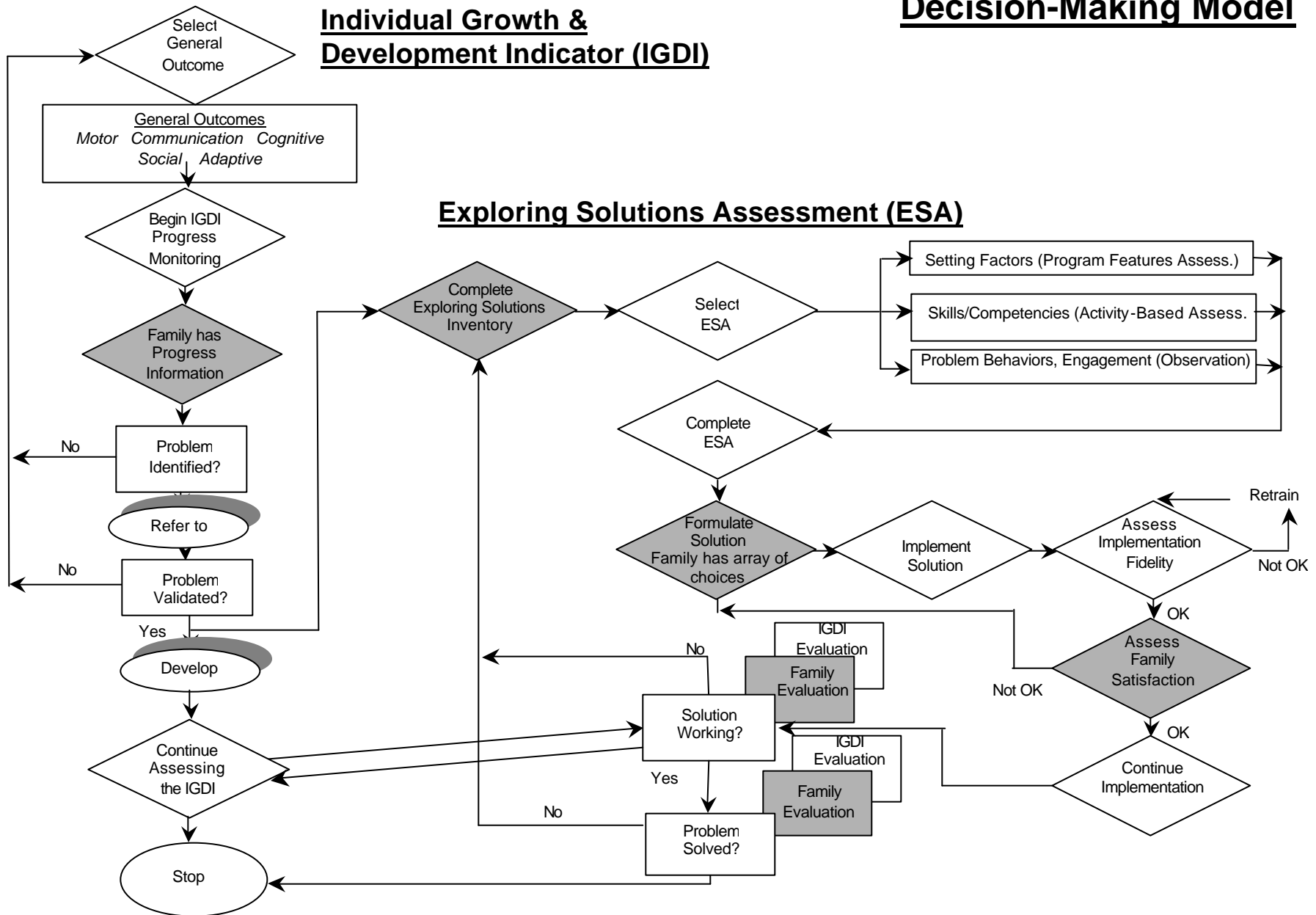
Figure 3. Fidelity of implementation information before and after implementing a modified milieu teaching childcare intervention.

Figure 4. Direct observation of teacher-child interaction before and after implementing a modified milieu teaching childcare intervention.

Decision-Making Model

Individual Growth & Development Indicator (IGDI)

Exploring Solutions Assessment (ESA)



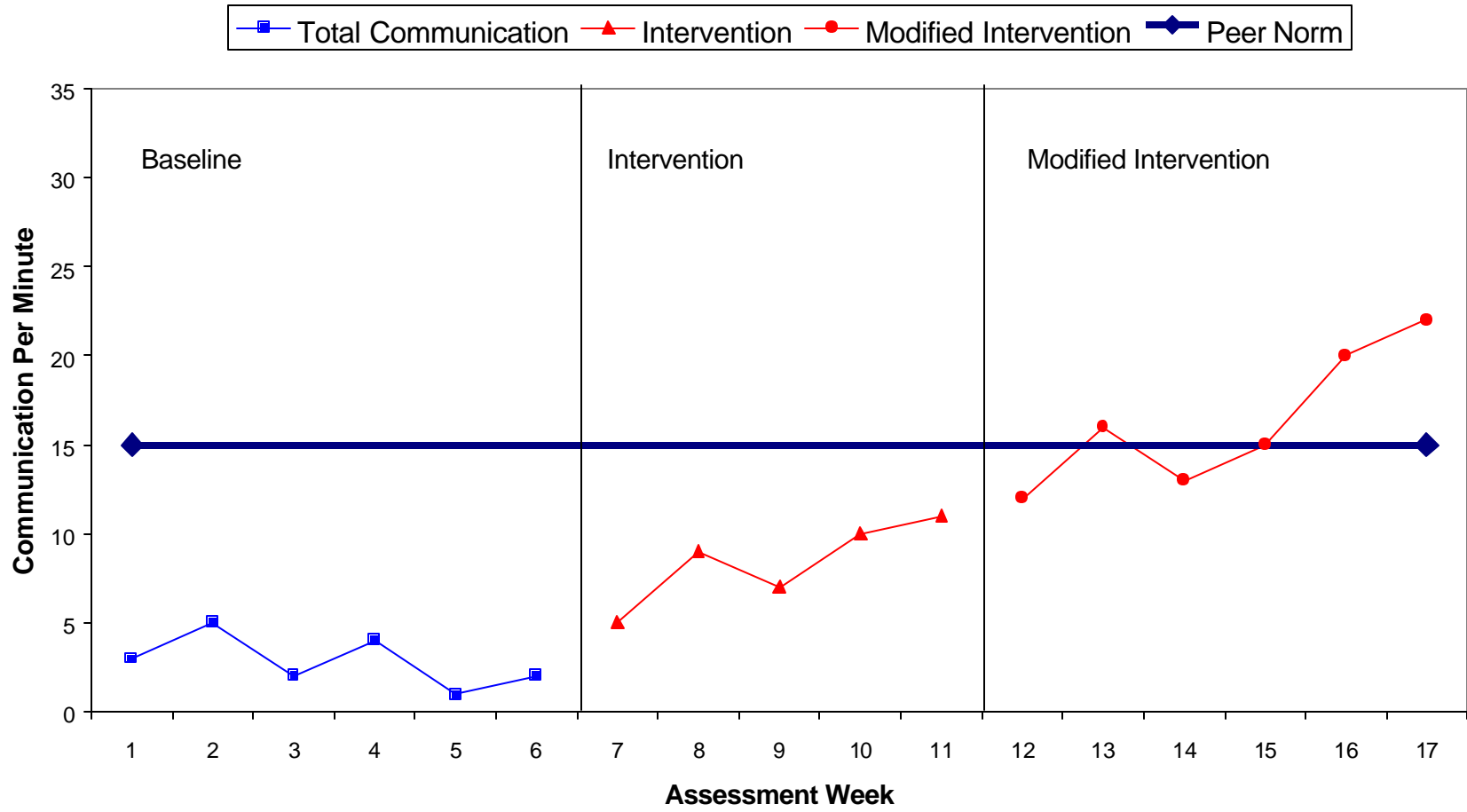


Figure 2.

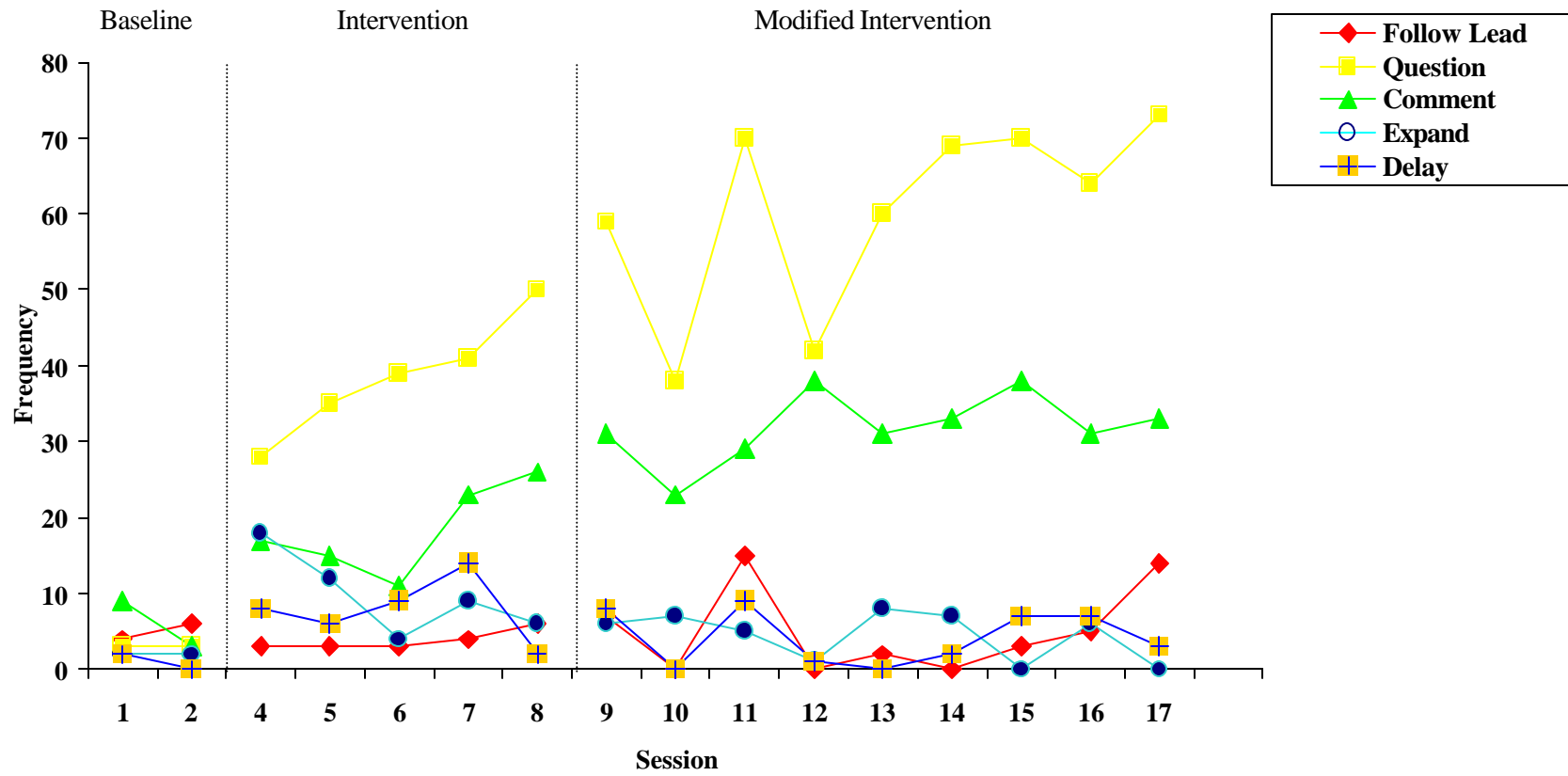


Figure 3.

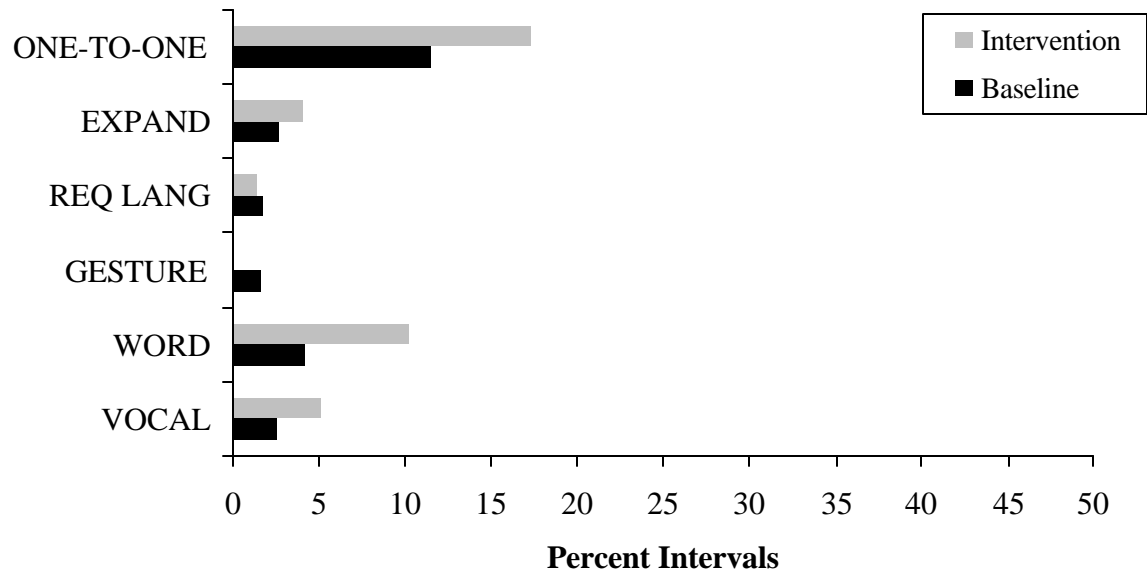


Figure 4.