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Enhancing Language Learning Opportunities in Family Contexts for Young Learners With or At Risk for Communicative Developmental Delay: An Initial Investigation

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Though the early years of life are critical for any child, this period may be especially crucial for young children who are at risk for or presently evidencing developmental delays. Bruder (2001) offered several rationales for the provision of early intervention. First, the earlier that children with such issues are identified and provided services, the greater the likelihood that the child will benefit. Early intervention services can reduce or eliminate developmental delays, moving children out of a risk category (e.g., from “Delayed” to “Typically developing”) (Glascoe, 2005). In addition to these immediate effects, early intervention can have a significant impact on the subsequent developmental status of the child (Barnett & Belfield, 2006).

Second, families receive invaluable support from these early intervention services (Sandall, Hemmeter, Smith, & McLean, 2005). Indeed, the very conceptual foundation of the *Individualized Family Services Plan* (IFSP), the intervention plan developed and implemented for children up to age six who evidence developmental delays (as opposed to the school-age *Individualized Education Program*) is that it is the *family* as much as the young child who is need of support and services.

Finally, Bruder (2010) concluded that early intervention programs offer economic advantages to schools and communities. As participants in these programs gain skills and enhance their developmental status, educational and post-school programs benefit from the decreased costs of special education and disability services support that would otherwise be required for school-aged children and adults with disabilities.

The primacy of the role of the family in first identifying developmental delays and then providing support for interventions is difficult to overstate (Sandall et al., 2005). Families provide this support through collaboration with early intervention professionals by facilitating the early intervention at home, while providing supplemental opportunities for the child to practice emergent skills at home and in the community.

Screening and Early Identification

A fundamental theoretical underpinning of early intervention services is that valid and reliable distinctions can be made between children developing typically, and those experiencing delays or other developmental issues. Typically these distinctions begin with routine developmental screening (American Academy of Pediatrics, 2006), a process designed to *identify* children who show characteristics of concern. These individuals then go on to receive a more extensive diagnostic assessment to confirm or rule out the presence of developmental issues of significance. Effective and routine developmental screenings, especially for children who are at risk for developmental delays due to known factors (e.g., prematurity, exposure to toxins, family histories) facilitate early detection of delays or issues, allowing for the earliest and most efficacious intervention services.

In addition to identifying children evidencing developmental delays, another use of screening is to *monitor* the ongoing development of children whose screening test scores are low enough to be of concern, though slightly above the arbitrarily determined cutoff scores that would trigger more extensive

evaluation for early intervention or special education services. Contemporary best practice would support providing these young children with subclinical screening instrument scores with ongoing *developmental monitoring* to ensure that these children do not have these areas of concern subsequently surface as substantial areas of delay (Squires, Twombly, Bricker, & Potter, 2009). Careful monitoring of these children ensures that the emergence of any developmental delays is identified early. In addition, best practice would support the provision of some level of intervention to these children who are at risk for such issues that is below that officially provided to young children with diagnosed and inarguable developmental delay.

Using Natural Environments to Address Limited Skill Repertoires

One of the distinguishing hallmarks of successful early intervention programs has long been the role of the family. No early intervention professional spends anywhere near as much time with a child with developmental delays as does his/her family (e.g., Bruder, 2001). Thus one promising way to address concerns about limited skill repertoires for children who do not qualify for full early intervention services would be by helping families provide learning opportunities within the child's natural environment that especially target these areas of concern (Dunst, Bruder, Trivette, Raab, & McLean, 2001; Twombly & Fink, 2004).

Many potentially powerful learning opportunities are available in the varied daily experiences, routines, interactions, and places that a child encounters day to day. Especially promising social/linguistic opportunities occur during meal times, bath time, helping with daily chores, going for a walk or on an errand, and so on. These frequent experiences can be shaped to maximize the learning opportunities for the child whose subclinical low scores in developmental assessment places him/her at risk for subsequent developmental delay or issues (Tisot & Thurman, 2002).

By embedding learning opportunities into daily occurrences and interactions, parents and caregivers can include additional support and learning (Jung, 2007; McWilliam, 2000). Perhaps needless to say, those learning opportunities that fit most easily into already existing family routines are more likely to be practiced and carried out. Given that delays in speech and language are the most common manifestations of developmental delay (e.g., Davis & Bennett, 2003), it is appropriate for communication skill development to receive special attention in intervention efforts.

The Family Strengths Model (FSM)

One particularly promising approach for analyzing and structuring ongoing routine family activities to maximize the developmental status for children either presently evidencing or at risk for developmental delays is the *Family Strengths Model* (FSM) (Carter, Chard, & Pool, 2009). The FSM was developed to better offer guidance to parents and professionals on how to embed developmentally appropriate learning opportunities, especially in the areas of language and literacy, within contextually relevant daily activities in a child's life. Such an approach can enhance the meaningfulness and pragmatic value of these emergent skills for the child.

In implementing an intervention strategy based on the FSM, an early interventionist meets with the family to complete three steps. First, the parents and professional identify *typical activities* that the family experiences daily or frequently. In doing this they chronologically go through a typical family day, and select those activities that either (a) presently have issues or challenges associated with a child's developmental issues, especially in language, or (b) hold special promise to facilitate language emergence. In doing this the group specifically reviews four dimensions of each activity:

- What does this activity look like?
- Who participates?
- What goes well?
- What is challenging and might be changed?

The family then determines how interested they would be in making changes in each activity identified in the review. This step is critical, in that in some situations families may determine that some changes in established routines and activities may cause excessive stresses or issues for the child and/or family.

Next the group seeks to identify *family strengths*; that is, unique characteristics of the family and/or child that are relevant to the intervention process. For example, it may be that there is (a) an older sibling in the family that especially enjoys spending time with the younger child with developmental issues, or (b) an activity in which the child is particularly verbal, or perhaps (c) an older relative lives with the family who might be able to implement certain activities with the child. Keeping in mind the previously identified family routines, the parents and professional then collaboratively discover ways in which the unique characteristics or strengths of the family might be used to better enhance the language enhancement functions of the activity.

The third and final step of the process is to identify *potential language and literacy opportunities* within the context of the previous determinations. The focus is on embedding these activities within daily routines. These activities are analyzed and potentially restructured to provide maximal opportunities for:

- contextually grounded social interactions with the child
- modeling of appropriate language and literacy behaviors for the child
- provision of recognition of the child's emergent linguistic achievements within routine activities.

The FSM is firmly based in child development theory, and as such holds promise as a framework for meeting the communication needs of young children and families. However, to date its programmatic efficacy has not been extensively evaluated.

This initial investigation examined the effectiveness of using the FSM approach with young children who had been identified in the *Monitor* scoring category in the Communication domain on the *Ages & Stages Questionnaire, 3rd edition* (ASQ-3) (Squires et al., 2009). This preliminary study specifically sought to (a) help parents and practitioners identify individualized language learning opportunities for these children that might be most easily implemented within the natural environment, and (b) improve children's communication skills as measured by the ASQ-3.

Method

Participants

To identify potential participants, the authors partnered with the Idaho State Department of Health and Welfare (the designated state Child Find agency) to identify those families in the Boise metropolitan area who had a child who had been referred in 2008 for potential early intervention services because of child and/or family factors associated with an "at risk" status for the child. This resulted in 99 potential family participants.

As part of the subsequent Child Find assessment process, these 99 families then completed the ASQ-3 to provide a screening-level assessment of the developmental status of the child. As a screening device, the ASQ-3 classifies scores in each of five domains (communication, gross motor, fine motor, problem-solving, and personal-social) into one of three self-explanatory ranges: (a) *Referral Needed*, (b) *Monitor*, and (c) *Typically Developing*.

Of these 99 referred children, 56 scored in the *Typically Developing* range in each of the ASQ-3 five domains. Of the remaining 43 children, 23 had ASQ-3 scores in the *Referral* range in one or more of the five ASQ-3 domains (communication, gross motor, fine motor, problem solving, personal-social), and were either being comprehensively evaluated or were already receiving early intervention services. These 23 children and their families were not invited to participate further in this study.

The remaining 20 children scored in the *Monitor* range in one or more domains of the ASQ-3. This *Monitor* status means that a score is low enough to be of concern, though falling somewhat short of the level required for additional in-depth evaluation and potential early intervention services.

Of those 20, 9 were scored at the *Monitor* status in the communication domain alone. These nine families were invited to participate in this study. Four of the nine agreed to and did participate.

Demographic data from each of the four participating families were collected, including (a) gender, (b) ethnicity, (c) income level of family, (d) level of mother's education, and (e) other services the child was receiving (e.g., physical or occupational therapy). The four participating children were all male, ranging in age from 12 to 20 months at the start of the study. Detailed demographic information for the four participants, including the specific age-appropriate versions of the ASQ-3 administered before and after the intervention to each of the four boys, can be found in Table 1.

Setting

All assessment, interviews, and intervention took place in the children's homes and related environments. The first two authors met with the family in their home during the first week to conduct the *Family Strengths Model* meeting, with parents subsequently implementing interventions independently in their natural home and neighborhood environments over a six week period.

Measurement

Participant communication skill levels. The pretest of the children's levels of communication skills was conducted by the parents using the Communication domain subtest of the ASQ-3 prior to the initial *Family Strengths Model* meeting between the authors and the parents. The posttest using the age-appropriate version of this same instrument was conducted by the parents at the conclusion of six weeks of implementation of the FSM strategies. While the complete ASQ-3 (all five domains) was administered by these four sets of parents, this study targeted only the Communication domain.

The ASQ-3 is designed to be completed by parents and primary caregivers of children between 1 and 65 months of age. Each questionnaire contains 30 developmental items organized into five domains: communication, gross motor, fine motor, problem solving, and personal-social. The parents try each activity on the questionnaire with their child, checking the box that best describes what the child can do. The questionnaire includes clear questions, illustrations, and tips to help parents complete the questionnaires quickly and accurately. Professionals then record those scores, converting the parent responses to numbers. Those scores are then transferred to a grid that outlines the child's current developmental status (*Typically Developing, Monitor, Referral*) in each domain.

The ASQ-3 has 21 different versions based on the child's age, from the earliest to be administered at 2 months to the final version administered at 60 months. In administering the ASQ-3, parents select the specific ASQ-3 questionnaire appropriate to the child's present age. In order to obtain accurate outcomes, the correct age interval questionnaire must be used. Each participant's exact age in years, months, and days was calculated by subtracting their date of birth from the current date (i.e., date the questionnaire was to be mailed). After calculating the child's exact age, the ASQ-3's age administration chart was used to determine which age interval questionnaire the child should receive. Because there was a 6 week period between the administrations of the pretest and the posttest, each participant received a different age-appropriate interval questionnaire in the second administration.

These intervals are not evenly chronologically spaced. That is, there are two month gaps between versions for children aged two through twenty-four months, three month gaps for the versions for children twenty-four through thirty-six months, and six month gaps for the versions for children aged thirty-six months through sixty months.

The ASQ-3 has been thoroughly evaluated by examining internal consistency, test-retest, and interobserver reliability and concurrent validity (Squires et al., 2009). Internal consistency analyses have shown strong relationships across items and within areas on the questionnaires, with correlations by developmental area and overall ASQ score ranging from .60 to .85 (Pearson product moment correlation, significance at $p < .01$).

Test-retest reliability of the ASQ-3 was based on comparisons of two questionnaires completed by parents at a 2-week time interval. This yielded a 92% agreement figure. Interobserver reliability was examined by comparing questionnaires completed by parents and questionnaires completed by trained test examiners of the same children, with a 93% agreement figure. Concurrent validity was measured by comparing the classification of children based on their performance on a standardized test (BDI-2) with their classification based on their performance on the ASQ-3. The data show a moderate to high agreement (85.8%).

Parental perceptions. Perhaps needless to say, no intervention designed to be carried out by parents can be effective unless parents perceive it to be practical and easily implemented. Thus this study sought to examine this dimension of the program as well. Specifically, the perceptions of the participating parents concerning the *Family Strengths Model* were evaluated with four questions:

1. How difficult are the FSM and corresponding learning activities for you to *understand*?
2. How difficult are the FSM and corresponding activities for you to *use*?

3. How useful were the FSM and corresponding learning activities for *focusing attention* on your child's needed skills in communication?
4. How *effective* were the FSM and corresponding learning activities with your child?

Parents responded to each of these four questions on a 4-point Likert-type scale, recording responses from a score of 1 (*very difficult/not at all useful/not at all effective*) to a score of 4 (*very easy/very useful/very effective*).

Design and Procedures

The Family Strengths Model

Once the four participating children (Evan, Zach, John, and Bryan) and their families had been selected, the two senior authors scheduled an individual meeting with each family to review the *Family Strengths Model* approach. During each 60 to 90 minute meeting the researchers and parents sought to collaboratively identify (a) *family routines*, (b) *family strengths*, and (c) *language and literacy opportunities* within target routines that capitalize on the family's unique strengths. Following each interview, researchers sent parents a written summary of their discussions, including specific intervention strategy suggestions evolving from the initial planning meeting that the parents could begin implementing within their typical family daily routines. After six weeks, the parents were asked to complete a post-assessment ASQ-3 on each child to document his progress in the Communication domain.

In the initial planning meeting, in conjunction with the researchers each family first identified *routines* unique to their household that potentially lent themselves to language development activities. Typical routines identified and targeted by the families included (a) mealtime/snack, (b) making dinner, (c) bed and bath time, and (d) daily walks. In each of these routines, one or more families indicated that their child's communication skills made that routine challenging. An overview of typical interventions/strategies developed with the families for these routines is outlined in Figure 1.

Below is an exemplary case study based on one of the four participants, Evan, and his parents, Jenna and Scott.

Step one: Identify family routines. The process began by asking Evan's parents to go through a typical day for Evan and the family in order to help identify possible opportunities to better engage Evan with language and emergent literacy activities. Jenna and Scott chronologically outlined a typical day for their family, and then shared other common routines that may not occur every day (e.g., grocery shopping, visits to Evan's grandparents' house). Figure 2 provides a copy of the form used to identify family routines, including the responses from Jenna and Scott.

Next the parents were asked to rate how well each routine *meets their expectations* (i.e., how smoothly the activity usually goes, and/or to what degree communication with the child is not an issue) (Figure 2). This rating used a 6-point Likert-type scale, where a score of 1 indicates *not well* (a communicatively challenging routine) and a score of 6 indicates *well* (not a communicatively challenging routine).

Jenna and Scott identified two specific routines with their son Evan as especially not meeting their expectations: (a) snack time, and (b) bath/bed time. Finally Evan's parents were queried about their willingness to consider making changes in each of these routines so that suggestions could be developed that they would be likely to implement. Jenna and Scott both indicated a willingness to consider changes in both of these identified routines.

Step two: Identify family strengths. This step involved gathering additional information about those routines that Jenna and Scott had earlier indicated that (a) did not meet their expectations for Evan's language, and (b) they were willing to consider altering. The following four questions were asked about each routine they had identified earlier in order to help pinpoint especially promising opportunities to embed language and literacy activities and structures.

- Who participates?
- What does this activity look like?
- What goes well?
- What is challenging?

The process of collaboratively reflecting on and analyzing those family routines characterized by challenges assists families in identifying both their own strengths as well as recognizing those components that are working well within these challenging routines. Figure 3 provides an example of the form used in this process, including Jenna and Scott's responses for the snack routine. They indicated that although this routine is challenging, Evan does communicate that he is hungry using a specific strategy (pulling his parents to the fridge or pantry), and that they are generally able to understand his needs.

Step three: Identify language and literacy opportunities. Once unique family routines and strengths have been identified, in this final step the interventionist(s) and parents jointly seek to identify language and literacy opportunities that utilize family strengths and fit within typical daily routines. Since Evan was 20 months old and had delays in communication, the researchers and parents brainstormed ideas targeting the identification and creation of possible language facilitation opportunities for Evan within his daily routines. Figure 4 provides an example of the collaboratively developed framework and guideline for the "Snack" routine for Jenna and Scott to (a) provide supplemental language opportunities, (b) provide model communications for Evan, (c) interact with Evan to further support language efforts, and (d) recognize Evan's emergent linguistic achievements. These strategies were collaboratively developed in the meeting of the researchers and parents. The researchers then developed summary guidelines and specific recommendations based on their discussions with the parents and subsequent reflections, and sent those to the parents for program implementation.

Results

Children's Communication Skills

The four children's pretest and posttest scores on the Communication domain of the ASQ-3 are graphically illustrated in Figure 5. All four participants began this process in the *Monitor* range in their respective ASQ-3 interval. During post-assessment, three of the four children had scores improve substantially enough over the six weeks of FSM implementation to move from the *Monitor* range into the *Typically Developing* range. These very positive results for three of these four children provide initial intriguing support for the use of the FSM to improve overall communications skills in young children who are at risk for developmental delay in this area.

Parental Perceptions

The results from the four questions the parents were asked about the practicality of the implementation of the FSM are provided in Table 2. These data were generated by calculating the mean score per question across all four respondents. For each question, parents were very positive (with average scores of 3.0 to 3.5 out of a possible 4.0) in their responses about the difficulty, usefulness and effectiveness of the *FSM* meeting and corresponding learning activities. Thus not only were the FSM procedures effective, they were also practical and easily implemented within typical family routines.

Discussion

This study assessed the impact of the *Family Strengths Model* (FSM), a family-centered intervention strategy, in helping parents provide effective individualized language development activities with four young children determined to be at risk for developmental delays in communication skills. Specifically, through the FSM interventionists and parents collaboratively identified potential learning opportunities for language within naturally and regularly occurring family routines, with the parents then implementing those practices over a six week period. Results of this initial investigation suggest the promise of the *FSM* to facilitate language development. Three of the four participants moved from the *Monitor* range on the ASQ-3 to the *Typically Developing* range. The fourth child maintained his *Monitor* status following intervention.

There are several potential limitations of this initial investigation that should be noted. First, the researchers worked with the families during the initial *FSM* interviews to develop embedded language learning opportunities to be implemented within the families' daily activities. However, there was no subsequent monitoring by the researchers of the implementation of those developed activities, and no data (outside of anecdotal parental reports) to support the fidelity of the implementation of the embedded learning opportunities. Data confirming the implementation of the identified program components would strengthen the legitimacy of the proposed linkage of the implementation of the FSM with the children's

communication growth. Future research along these lines should incorporate a measure of implementation fidelity. This might be achieved through observations by the researchers, parental reports, or some combination of these procedures.

Second, there are potential questions about the instrumentation used in this project. The children's levels of communication skills prior to and following implementation of the *FSM* were measured using a *developmental* screening instrument, the ASQ-3. The ASQ-3 does have substantial empirical support for reliability and validity. In addition, there are significant benefits in using a developmental screening measure in projects of this sort (e.g., the speed and ease with which parents can complete this type of assessment). Nevertheless, more extensive and comprehensive standardized, norm-referenced measures might allow for more sensitive evaluations of participant growth in the communication domain. Subsequent investigations should seek to incorporate more precise measures of children's communication skills to more accurately document linguistic growth over time.

Third, the four children included in this initial investigative study represent a very small sample. It may have been that the three of the four participants who did evidence sufficient developmental progress in communication skills would have done so regardless of the implementation of the FSM intervention. In addition, the four may not be representative of all children who are at risk for communication or other developmental delays. The four participants in the present study were all male, primarily white and from one metropolitan area in the Pacific Northwest. Future studies on the potential efficacy of the FSM should include a larger sample size, with participants representing greater cultural and linguistic diversity. In addition, the current study specifically looked only at children ages 12 to 22 months with delays in communication. Future research should explore the use of the FSM with older children and perhaps examine its use within other domains of development.

Fourth, there may be other issues associated with the sample. Nine families were potentially eligible to participate in this study (i.e., the family had a child whose only developmental screening score of concern was in the *Monitor* range of the Communication domain of the ASQ-3). Although all nine families were invited to participate, only four of the nine chose to do so. It is possible that the four participating families were somehow systematically different from the five who chose not to participate. The four participating families may have been more willing or more able to incorporate the FSM program components into their family lives than were the other five families who did not participate, or may have had greater concerns about their child's developmental status in communication. Thus the linguistic outcomes might not have been as successful with the children from these nonparticipating five families had they participated.

Finally, the parents (especially the mothers) who participated in the study may well be unrepresentative of mothers in general of young children who are at risk for communication delays. Of the four mothers who participated in this study, three of the four were college graduates, with the four having had some college education. This is especially potentially significant in this study given the extensive role the parents play in the FSM in (a) identifying and then (b) implementing communication intervention strategies within routine family activities. It may be that mothers with less educational background may experience greater difficulties in either or both of these functions, with less successful child outcomes.

Even with these caveats in mind, one might conclude preliminary support for the use of the FSM with children with communication issues who fall short of full eligibility for early intervention services, but whose scores on screening tests or other identification measures or indicators suggest an at risk status for the subsequent emergence of developmental delay(s) in communication. Children who fall short of complete eligibility for ECSE services typically do not receive a comprehensive intervention package, and/or extensive services provided by early intervention professionals. Current "all or none" practice too often leaves these communicatively "at risk" children and their families either without support or receiving a generic list of interventions to try at home. This is likely to continue to be the case when so many states are experiencing dramatic financial challenges. However, family strengths-based interventions that target unique family routines and use willing parents to implement intervention strategies developed in conjunction with professional consultation may provide a viable and pragmatic

alternative to professional-based intervention services in helping these children at risk for developmental delay catch up with their age peers.

Post program data collected from the parents revealed that they had found the FSM and its corresponding activities (a) easy to understand and use, (b) useful in focusing attention on needed communication skills, and perhaps most importantly, (c) effective with their children. Given this positive response and the relatively short amount of professional time required (the initial 60 to 90 minute *FSM* interviews, the subsequent analysis and recommendations generation, plus a bit of time scoring the pretest and posttest ASQ-3), the FSM seems to have potential as a practical approach for preventing and remediating delays in young children who display limited skill repertoires in communication. Future research might explore the feasibility of integrating the FSM within the administrative parameters of existing early childhood service delivery models.

References

- American Academy of Pediatrics. (2006). Identifying infants and young children with developmental disabilities in the medical home: An algorithm for developmental surveillance and screening. *Pediatrics*, *118*(1), 405-420.
- Barnett, W. S., & Belfield, C. R. (2006). Early childhood development and social mobility. *The Future of Children*, *16*(2), 73-98.
- Bruder, M. B. (2001). Infants and toddlers: Outcomes and ecology. In M. J. Guralnick (Ed.), *Early childhood inclusion: Focus on change* (pp. 203-228). Baltimore, MD: Paul H. Brookes.
- Carter, D. R., Chard, D., & Pool, J. L. (2009). A family strengths approach to early language and literacy development. *Early Childhood Education Journal*, *36*(6), 519-526.
- Davis, B. E., & Bennett, F. C. (2003). Developmental delay in children younger than 6 years. In S. Berman (Ed.), *Pediatric decision-making* (4th ed.) pp. 86-89. Philadelphia: Mosby.
- Dunst, C. J., Bruder, M. B., Trivette, C. M., Raab, M., & McLean, M. E. (2001). Natural learning opportunities for infants, toddlers, and preschoolers. *Young Exceptional Children*, *4*, 18-25. doi: 10.1177/109625060100400303
- Glascoe, F. (2005). Screening for developmental and behavioral problems. *Mental Retardation and Developmental Disabilities Research Reviews*, *11*, 173-179.
- Jung, L. A. (2007). Writing individualized family service plan strategies that fit into the ROUTINE. *Young Exceptional Children*, *10*(3), 2-9. doi: 10.1177/109625060701000301
- McWilliam, R. A. (2000). It's only natural...to have early intervention in the environments where it's needed. In Susan Sandall & Michaelene M. Ostrosky (Eds.), *YEC monograph series: Natural environments and inclusion* (pp. 17-26). Longmont, CO: Sopris West.
- Sandall, S., Hemmeter, M. L., Smith, B., & McLean, M. E. (2005). *DEC recommended practices: A comprehensive guide for practical application in early intervention/early childhood special education*. Longmont, CO: Sopris West.
- Squires, J., Twombly, E., Bricker, D., & Potter, L. (2009). *ASQ-3™ user's guide*. Baltimore, MD: Brookes.
- Tisot, C. M., & Thurman, S. K. (2002). Using behavior setting theory to define natural settings: A family-centered approach. *Infants and Young Children*, *14*(3), 65-71.
- Twombly, E., & Fink, G. (2004). *Ages & stages learning activities*. Baltimore, MD: Brookes.

Table 1

Participant Demographics

* as determined by 2009 U.S. Department of Health and Human Services Poverty Guidelines (<http://aspe.hhs.gov/poverty/09poverty.shtml>)

Participant	Bryan	John	Evan	Zach
ASQ interval				
Pretest	16	12	20	12
Posttest	20	14	22	16
Gender	Male	Male	Male	Male
Ethnicity	Caucasian	Caucasian	Caucasian	Multi-racial
Other services	None	O.T.	None	Other (WIC)
Mother's education	Some college	College graduate	College graduate	College graduate
* Income	Missing info	Above poverty line	Below poverty line	Above poverty line

Table 2

Parental Perceptions of the Usefulness and Effectiveness of the FSM

Question	Average Parental Response (on a 1.0 to 4.0 scale)
1. Is the FSM difficult to learn? (1 is <i>Very Difficult</i> , 4 is <i>Very Easy</i>)	3.5
2. Is the FSM difficult to use? (1 is <i>Very Difficult</i> , 4 is <i>Very Easy</i>)	3.0
3. Does the FSM focus attention on communication skills? (1 is <i>Not At All</i> , 4 is <i>Very Much</i>)	3.5
4. How effective was the FSM with your child? (1 is <i>Not At All Effective</i> , 4, is <i>Very Effective</i>)	3.0

Figure 1. Typical FSM Language and Literacy Opportunities for Routines

1. Use choices.

- Avoid yes/no questions. Instead of asking, “Are you ready to eat?” try saying, “Would you like milk or apple juice with dinner?” “Would you like to wear the red pajamas or the blue pajamas?”

2. Wait.

- It takes some children a little longer to understand your message and then to respond with gestures or words. After you give him a choice, provide wait time for him to respond. Try

silently counting to 5 after you ask a question, or make a statement to give your child time to respond.

- Give your child time to make requests. Try not to over-interpret your child's communication attempts or over-anticipate his needs.

3. Describe what you are doing.

- For example, "I am stirring this hot soup." Or, "I am putting your leg in your pajamas."
 - Use the same words and actions each time.
 - Repeat the word every time you do the action.
 - Repeat the action over and over again with the word.
- Use both languages! (for a bilingual child)

4. Give him little jobs and simple directions.

- For example, when cooking dinner tell him to "Get a pot/pan."
- Let him help you pour an ingredient in the pan or help stir.

5. Make sure your directions use simple phrases and words.

6. Be sure to let him know you notice he followed your direction.

- For example, after requesting an object in the kitchen from him, say "Thank you for the pan!"

7. While cooking, put him in his high chair so he can see what you are doing and have him help with simple tasks.

8. Introduce new toys and activities.

- For example, a new action can be added to a familiar song or nursery rhyme.

9. Place objects that he enjoys in sight, but out of reach to encourage him to ask for them.

- For example, place a toy he enjoys up on a shelf/table. Respond if he points, vocalizes or gestures for the toy.

10. Change a familiar step in a daily routine.

- For example, put a diaper on his arm or a shirt on his leg. This will give him an opportunity and impetus to use his developing language skills.

11. When he makes a sound such as "da," repeat the sound back ("da da da . . .").

12. Pretend to have a conversation with him.

- For example, if he is playing with the rocking horse and babbling, say, "Yes, the horse is bouncing. Do you want to dance?" Then wait for him to babble some more, then respond again with something such as, "The horse is dancing too!" This helps children learn conversation turn-taking (I say something, you say something, I say something, and so on).

Figure 2. Routines Assessment Form for Evan

Routines Assessment Form

Name: Evan Age: 20 months Date: March 24, 2009

Respondent(s): Jenna & Scott (parents)

Typical Daily Routines:

Time	Routine/Activity	How well does it meet expectations?					
		Not well					Well
9:30-10:00 am	Wake-up & get dressed	1	2	3	4	5	6
10:00am	Breakfast/Sesame Street	1	2	3	4	5	6
11:00am	Pick up neighbor child	1	2	3	4	5	6
11:30am	Lunch	1	2	3	4	5	6
12:00, 1:30, & 6:00	Play	1	2	3	4	5	6
1:00 & 5:30pm	Snack	1	2	3	4	5	6
3:30pm	Nap	1	2	3	4	5	6
8:00pm	Bath time	1	2	3	4	5	6
11:00pm	Bed time	1	2	3	4	5	6

Other Common Routines:

Time	Routine/Activity	How well does it meet expectations?					
		Not well					Well
1 time/week	Grocery Shopping	1	2	3	4	5	6
1 time/week	Church	1	2	3	4	5	6

Figure 3. Strengths Assessment Form for Evan: Snack

Strengths Assessment Form

Name: Evan **Age:** 20 months **Date:** March 24, 2009

Respondent(s): Jenna & Scott (parents)

ROUTINE: Snack	
<p>Who participates?</p> <p>Mom or Dad & Evan</p>	<p>What does the activity look like?</p> <p>Evan asks for the fridge or pantry to be opened by pulling parent to it. Mom or Dad offers him choices, but he doesn't choose.</p>
<p>What goes well?</p> <p>Evan communicates that he is hungry by pulling Mom and Dad to fridge or pantry.</p>	<p>What is challenging about this routine?</p> <p>Evan won't make a choice of snack. Instead he screams and pushes Mom or Dad away.</p>

Figure 4. Identifying Language and Literacy Opportunities Form for Evan: Snack

Identifying Language and Literacy Opportunities Form

Name: Evan **Age:** 20 months
Respondent(s): Jenna & Scott (parents)

Date: March 24, 2009

Routine	Provide Opportunities	Model Communication	Interact with Child	Recognize Achievements
Snack	Allow Evan to choose between two items (i.e., choose between Cheerios & apple slices). You mentioned that you have challenges when Evan comes into the kitchen for a snack and looks at all of the choices. Limiting the choices may be very helpful. Encourage him to use language and select between items.	If Evan points to select an item, give him the item and model language by saying, “you want Cheerios.” Describe what you are eating by saying, “I want yogurt.”	Ask Evan what he would like when you present him with choices. Talk with him about what he is choosing and what you are choosing. Acknowledge Evan’s efforts to communicate with words.	Praise Evan when he makes a choice between items or when he communicates to request “more” or that he is “all done.” For example, after Evan says “more” to request more, say “Good. You want more Cheerios” and be sure to give him more.

Figure 5. ASQ-3 Scores on Communication Domain: Pre- and Post-assessments

