

Family Bookmaking: An Approach to Support Parent-Child Language Interactions in Natural Environments

Lisa K. Boyce, Ph.D.; Mark S. Innocenti, Ph.D.; Lori A. Roggman, Ph.D.; Cora Price, B.A.;
Vonda K. Jump, Ph.D.; Gina Cook, M.S., & Eduardo Ortiz, Ph.D.,
Utah State University, USA

Abstract: This study examined the effectiveness of family bookmaking to promote early language development. Forty-two children receiving early intervention services and their families participated in the study. Our results suggest that family bookmaking engages parents, increases the quality of parent-child language interactions, and increases children's understanding of language.

Key Words: bookmaking, language, family, early intervention, exploratory, children

Introduction

Home visiting to families with young children is a long-standing means of delivering services. There have been a number of reviews and meta-analyses that report positive effects of home visiting (Daro, 2006; Sweet & Applebaum, 2004). However, the research on home visiting has been criticized because the term describes a place for delivering services rather than a description of the service delivery model being used (Chaffin, 2004; Gomby, 2005). This critique is relevant to the field of early intervention for young children with disabilities (Part C). A recent report to Congress reported that 80.7% of all Part C children received their services at home (U.S. Department of Education, 2009), but service delivery models within the home have not been well described.

This does not imply that service delivery models have been ignored. There has been an active discussion of what constitutes early intervention home visiting best practices. Baird and Peterson (1997), more than a decade ago, urged a shift from practitioner-directed intervention towards an emphasis on parent-child interaction and family-directed early intervention experiences. They argued that parents could and should become more informed decision makers and be proactive in their children's development. Bailey and colleagues argued that for intervention to be effective in facilitating children's development, practitioners need to address parent-child interactions in the environments where children live (Bailey, Hebbeler, Scarborough, Spiker, & Mallik, 2004). A workgroup of experts in the field of early intervention recently came up with recommendations that support this focus on parent-child interactions. The Workgroup on Principles and Practices in Natural Environments (2007) identified seven best practice principles based on current research and clinical evidence that emphasize the importance of the family, the parent-child relationship, and the use of everyday environments to facilitate learning.

Despite this emphasis, research has found that those providing home visits do not implement recommended practices (Campbell & Sawyer, 2007; McBride & Peterson, 1997; Peterson, Luze, Eshbaugh, Jeon, & Kantz, 2007). Even more of a concern was a recent study that surveyed 241 multiple-discipline early intervention practitioners and asked them to describe "three wishes" they would make to change early intervention (Campbell & Halbert, 2002). Practitioner responses uniformly conflicted with recommended early intervention best practices, including

family-centered intervention and provision of services in natural environments. The findings from this research indicate a disconnect between what practitioners believe or do, and practices derived from and supported by research (e.g., Dunst, Trivette, & Hamby, 2006; Kim & Mahoney, 2004; Mahoney & Wiggers, 2007) and federal program guidelines.

It is impossible to say from this research why early intervention practitioners are not implementing recommended practices. Perhaps one reason is that recommended practices do not immediately lead to clear and specific strategies that can be implemented by a practitioner. If this were a reason, then strategies that provided a concrete way to help practitioners engage parents in developmentally supportive interactions with their children would help improve practices. The current study examines one approach, consistent with recommended practices, for providing practitioners a more structured approach to support parents' facilitation of their children's early language development.

Practitioner encouragement of parent-child interactions that support children's development may be particularly salient for promoting social-emotional, cognitive, and language development. With such an approach, the practitioner helps parents identify and enjoy activities with their children that promote development, guides parents to identify and interpret cues and attempts at communication, and encourages parents to be responsive to their children's needs, interests, and emerging skills (Roggman, Boyce, & Innocenti, 2008). Early intervention providers have been encouraged to shift to this type of parenting-focused approach where they move from working directly with a child to providing coaching for parents to facilitate their child's development (Mahoney & Wiggers, 2007). The encouragement of parental responsiveness and developmental support seems to be especially important in language and literacy activities. Indeed, the quality of parent-child interactions during literacy activities, such as encouragement, motivation, and socioemotional support, may be more important to children's language and emergent literacy skills than mothers' beliefs and practices for children with language impairments (Skibbe, Justice, Zucker, & McGinty, 2008). In addition, even though research suggests that delayed children are not as engaged in play interactions as typically developing children, maternal responsiveness has been shown to be a better predictor of child engagement during play than disability status (Kim & Mahoney, 2004). Promoting maternal responsiveness, particularly in enjoyable language interactions, may be a critical part of early intervention services for children with language delays. This study focuses on the evaluation of such an approach. We collaborated with two different Part C early intervention programs to develop a family-centered approach that builds on recommended practices and previous research to promote children's development.

Intervention

Consistent with research findings (Peterson et al., 2007), our observations of early intervention home visits were that early intervention practitioners usually worked directly with children with disabilities, "modeling" appropriate ways to elicit language. During this type of direct-services-modeling approach, families were often involved as observers and then as participants at the conclusion of the home visits when they were instructed how to continue to work with their children to provide carry-over until the next home visit. In contrast, we developed a series of family bookmaking activities intended to engage the families in co-constructed narratives about

everyday events to provide a context for meaningful, culturally appropriate, natural, and extended parent-child conversations. Using these narratives along with commonly available technology (digital printer and camera), families developed books that they could keep and continue to use. Within this structure, home visitors provided information on the importance of language and helped parents use specific strategies to encourage and extend children's language and communicative attempts during the narratives, bookmaking, and later book sharing. This type of approach was developed as a co-constructed, family-centered intervention.

The family bookmaking approach was designed to encourage ongoing language support and literacy activities through parent-child relationships in ways that would be individualized, flexible, engaging, and appropriate for all families. It is based on the research indicating that parent-child conversations, book sharing, and enjoyment are key to promoting children's language and emergent literacy. Specifically, a parent's labeling, describing, and explaining things related to a child's interests encourages that child's language development (Baumwell, Tamis-LeMonda, & Bornstein, 1997; Carpenter, Nagell, & Tomasello, 1998; Dunham & Dunham, 1995; Hart & Risley, 1995; Newland, Roggman, Boyce, & Cook, 1998; Pine, Lieven, & Rowland, 1997) as do parent-child conversations, storytelling, and shared narratives (Caravolas & Bruck, 1993; Hart & Risley, 1995; Hoff-Ginsberg, 1991; Melzi, 2000; Neuman, 1999; Whitehurst & Lonigan, 1998). Active book sharing interactions between parents and children support children's language and later literacy skills (Arnold & Whitehurst, 1994; DeTemple, 1999; Goldenberg 1994; Mason, 1992; Newland, Roggman, & Boyce, 2002; Valdez-Menchaca & Whitehurst, 1992). Parent-child enjoyment of these book sharing and other literacy experiences is also an important predictor of language and emergent literacy (Leseman & de Jong, 1998).

This approach was initially developed for use with low-income Latino families whose children were English Language Learners. However, this approach was adapted for families with young children with disabilities as a means to better meet the intent of family-centered practice and natural environments by providing a concrete way to engage family members in evidenced-based strategies that promote language development.

The process of family bookmaking is comprised of seven basic steps: (a) planning ahead with the family to encourage parent-generated ideas, with child participation, about book topics; (b) facilitating parent-child conversation, communication, and interest in the topic; (c) illustrating the story by taking and printing digital photographs; (d) helping the parent write captions from words, signs, gestures, or child interest in the parent-child narrative; (e) guiding the parent to involve the child in organizing and making the book; (f) supporting the parent and child reading and looking at the book; and (g) leaving the finished book for the family to keep.

A training process with accompanying materials to guide the intervention was provided to practitioners from our early intervention program partners. The training content included the theory of change, basic steps of family bookmaking, evidence-based strategies for parents to elicit language (referred to as the support-ask-expand (SAE) strategies), and methods the practitioners could use to facilitate parents' use of the SAE strategies. A variety of book topic ideas were provided along with recommendations on using identified methods with different book themes. Information was provided on adapting book complexity and content to facilitate

development and support IFSP goals. Specific examples were discussed for including developmental skills other than language and literacy, such as motor skills and social skills. As part of the training, practitioners tried the basic steps with a family not in the study, and these bookmaking experiences were discussed in subsequent meetings. Once home visits began, the trainers provided reflective supervision sessions (Roggman et al. 2008) to solve problems, address challenges, support strengths, and plan for future visits.

A formative evaluation that included a comparative study was conducted to examine the usability and feasibility of the family bookmaking activities. Several research questions were developed to guide the evaluation of this intervention.

1. Will early intervention providers and families experience these activities as meaningful, enjoyable, and effective in promoting language development?
2. Will parents participating in this intervention increase their use of language-supporting behaviors more than parents in a comparison group?
3. Will children participating in this intervention with their families score higher on parent reports of expressive and receptive language abilities than children in the comparison group?

Methods

Participants

Two-year-old children with disabilities and their families participated. These families were enrolled in two early intervention programs that were partners in our adaptation of this intervention. Families in these programs were assigned to the family bookmaking approach ($n = 21$) or a comparison group ($n = 21$). Children were selected for the study based on their birthdates, with target ages between 18 and 30 months. No children were excluded based on disability status, home language, or any other factor. Assignment to groups was based on the interventionist working with each family. The interventionist who worked with us on the development of the approach served as the primary interventionist for the children in the family bookmaking group. Comparison children were selected from the caseloads of other interventionists in these same programs. The study was conducted over seven months.

Table 1 provides information on key characteristics of the families in the two groups and the results of t-tests to examine group differences. Overall, children's ages at pretest ranged between 16 and 31 months ($M = 25.25$, $SD = 3.36$). Children had an average language delay of approximately eight months. Most families were Caucasian (85%) and most were married or living with someone. The average annual family income ranged from \$0 to \$105,000 ($M = \$35,750$, $SD = \$23,819$), and maternal education levels ranged from 4 to 17 years ($M = 13.55$, $SD = 2.33$). Raw maternal vocabulary scores ranged from 30 to 52 ($M = 42.20$, $SD = 5.60$). As shown in Table 1, mothers in the comparison group had statistically significantly higher education levels and raw vocabulary scores on the Woodcock-Munoz Language Survey than the mothers in the family bookmaking group. Therefore, children in the family bookmaking group were particularly at risk for continuing language delays.

Measures

Assessments included maternal interviews and videotaped mother-child book sharing. Maternal interviews included demographic questions, child language questionnaires, and a maternal vocabulary assessment. Assessments were conducted before the intervention began and then again seven months later following the intervention. Assessors were trained to criterion on all measures prior to working with families. Assessments occurred in the families' homes, scheduled at their convenience.

Maternal expressive vocabulary was assessed only at pretest with the Woodcock-Muñoz Language Survey (WMLS). This measure was designed to assess language proficiency in either Spanish or English (appropriate norms are provided for both) and has a reported internal consistency reliability, using Cronbach's alpha, of .84 (Woodcock & Muñoz-Sandoval, 1993).

Child receptive and expressive language skills were assessed with the Receptive and Expressive Emergent Language Scale (REEL-3; Bzoch, League, & Brown, 2003) subtests. Results were obtained through a caregiver interview. The REEL-3 has a normative scale based on a normative sample of 1,112 infants and toddlers matched to the demographic characteristics of the 2000 census. The average reliability for the two subtests exceeds .90.

Parent-child book sharing behaviors were coded from a videotaped interaction of each mother and her child reading a book together for ten minutes. The book was a storybook with no words so that mothers of all literacy levels were able to participate. The oral narrative (spoken words) was coded for language supporting behaviors. Parent behaviors used to assist child language during the book sharing were tallied using a list of behavior categories (Whitehurst et al., 1988). Frequency counts were obtained of mother directives, labeling, reading/conversation, yes/no questions, simple what questions, imitative directives, praise, open-ended questions repetition, pointing requests, expansions, criticism, function questions, and other responses to vocalizations. In addition, child single word utterances or signs and multiple word utterances or signs were counted. Trained observers coded the videotaped interactions in 30-second intervals. At the end of each 30-second interval, coders stopped the videotape and recorded which behaviors occurred in the preceding interval. More than one behavior could be coded in each interval. For this evaluation, criteria for training and periodic agreement checks were .90 for simple agreement and .75 for agreement using the Kappa coefficient.

Parent satisfaction was assessed through an interview questionnaire that was developed to better understand how the intervention was received, what aspects were important to parents, and how the bookmaking visits affected families. Families who participated in the intervention completed the questionnaire in an interview format. Quantitative and qualitative satisfaction data were obtained. Qualitative responses were aggregated for each question for analysis, while mean scores were obtained for quantitative questions.

Early intervention provider satisfaction was assessed through an interview questionnaire that was developed to better understand how the intervention was delivered, what aspects were important to providers, and how the bookmaking visits met IFSP goals and the needs of the children and families they served. Providers who participated in the intervention completed the questionnaire in an interview format. The interview was conducted by a research team member who had not

worked directly with the practitioners. Quantitative and qualitative satisfaction data were obtained. Qualitative responses were aggregated for each question for analysis, while mean scores were obtained for quantitative questions.

Treatment Fidelity

Implementation fidelity is an essential component of any intervention (Gersten et al., 2005). To address fidelity, the number of bookmaking home visits was recorded and practitioners rated families' engagement in the bookmaking process. Intervention families received an average of 9.3 home visits (range 0 to 17; 3 families left the program) focused on book making strategies over a 7-month period. Staff ratings of family engagement during these visits averaged 4.01 on a 5-point Likert-type scale where a 5 indicated "enthusiastic, actively engaged during and between home visits."

Results

To address the first research question (early intervention providers and families would experience the family bookmaking activities as meaningful, enjoyable, and effective in promoting language development) descriptive data were drawn from practitioner and parent reports.

Early intervention practitioners indicated that the bookmaking activities fit into their current work (4.4 on a 5-point scale) and that families were excited about making books with their children (4.8). Example comments included: "It works for kids – especially those with speech delays. They participate more, talk more, gets them to point at things and speak, it gets the family involved." "A huge benefit is leaving something concrete and familiar with the family. Then parents can see how it's related to their goals for their children and they have something to work on when they are on their own." "I have been able to get parents to work with their children more on their own." "The books lend themselves to almost any goal."

Parents also completed a questionnaire and were interviewed at the end of the study. Parents reported enjoying the bookmaking visits (4.5 on a 5-point scale) and that the books were helpful for their children's language development (4.1). Example comments included: "He was able to tell what he was doing and talk about it." "Because he was the main character of the book, he was in all of the pictures [and] making the things he liked. He recognizes more words."

The second research question, whether participating parents would increase their use of language-supporting behaviors, was addressed through comparative analyses of maternal language supporting behaviors from the videotaped and coded observations. At pretest, there were no significant differences between mothers in the family bookmaking group and those in the comparison groups on these variables. A series of hierarchical multiple regression models was then used to determine if participating in the family bookmaking approach uniquely contributed to mothers' language-supporting behaviors above and beyond maternal vocabulary or education. Based on findings from initial group differences and correlational analyses, either maternal vocabulary and child age at pre-test or maternal education were entered as covariates in the first step of the regression analyses. Group status was entered on the second step. Thus,

estimates of the influence of the intervention were tested after covariates were taken into account.

As shown in Table 2, participation in the family bookmaking activities contributed to specific maternal language-supporting behaviors above and beyond covariates for maternal use of “wh” and open-ended questions. Participating in the family bookmaking group made a statistically significant contribution to maternal use of expansions, explaining an additional 9% of the variance, and to maternal use of open-ended questions, explaining an additional 6% of the variance, and to maternal use of “wh” questions explaining an additional 5% of the variance. Therefore, participation in the family bookmaking activities was a significant predictor for maternal use of expansions above and beyond maternal education and above and beyond maternal vocabulary and child age at pretest for “wh” and open-ended questions. No other statistically significant group differences were found for the other measured variables.

To address our third research question, whether language abilities would increase more among children in the family bookmaking group than among those in the comparison group, we examined their receptive and language skills at pretest and posttest. Two hierarchical multiple regression models were tested to determine if participation in the family bookmaking group contributed to children’s posttest expressive language or receptive language scores above and beyond their pretest scores and maternal vocabulary. As shown in Table 2, a model examining receptive language indicates that participation in the family bookmaking activities contributed to children’s receptive language above and beyond maternal vocabulary and children’s receptive language at pretest. Participation in the family bookmaking group made a significant contribution by increasing the variance explained in this model by an additional 5%. Therefore, participation in the family bookmaking activities was a significant predictor of children’s receptive language above and beyond children’s pretest scores and maternal vocabulary. No differences were found between groups on expressive language scores.

Discussion

These results suggest that the family bookmaking approach offers a promising strategy for engaging parents, increasing the quality of parent-child language interactions, and increasing children’s understanding of language. The family bookmaking approach was well received by both parents and early intervention providers. All parents and providers reported that they saw these activities as beneficial for the children and easily usable in natural environments. The resulting improvements in children’s receptive language skills and parents’ use of language-promoting strategies are promising and consistent with other research demonstrating that parents can easily be taught to establish joint attention with a book, increase questioning with children, and respond to their children’s questions; these behaviors lead to active communication and language use by children (Crowe, Norris, & Hoffman, 2004).

The sequence of activities that are part of the family bookmaking activities are evidently effective in engaging parents in home visiting early interventions. These specific activities provided both a context and resources for language and literacy support. The context provided opportunities in which parent-child language interactions were more likely. The books that were made as part of the activities provided high interest literacy resources that elicited continuing

language interactions between home visits. Practitioners were able to implement the family bookmaking activities as part of their day-to-day responsibilities after a short period of training.

The willingness of practitioners to implement the family bookmaking activities is evidence of the usability and feasibility of these activities for early intervention programs. Practitioners' values, current workload, and perception of family involvement responsibilities all contribute to their willingness to implement principles and practices of family-centered intervention (Campbell & Halbert, 2002). Family engagement and interest may reinforce practitioners when they do family-centered intervention. This may have been facilitated not only by the short period of training but also by the family bookmaking activities themselves. For example, in our study, one practitioner was hesitant to try the family bookmaking approach with a mother with clinical depression who kept the blinds closed and never left the couch during the home visits. After seeing the mother actively engaged during the family bookmaking activities, this practitioner reflected on several effective strategies that she could continue to use to engage this mother on future home visits.

The family bookmaking activities were developed to address the importance of engaging the family in early intervention. Early intervention has a strong influence on children's development when it is able to increase mothers' responsiveness and interaction with their children (Mahoney & Wiggers, 2007). However, much of early intervention practice consists of practitioners working directly with children on activities to facilitate their development (McBride & Peterson, 1997). Even in programs with minimal facilitation of parent-child interaction, parents are more involved in the program when coaching strategies are used to support parent-child interaction (Peterson et al., 2007). The family bookmaking approach was combined with a model in which parenting strengths are supported and parent-child interaction is facilitated, making these strategies inseparable. The Say-Ask-Expand (SAE) language-supporting strategies mothers were encouraged to use, as part of the family bookmaking activities, have broad research support and may have increased language interactions both during the activities and during other family activities between visits. The changes in the parent language-supporting behaviors that were present in a semi-structured context of mother and child reading a book together suggest carryover beyond the actual family bookmaking activities.

Our training for the practitioners emphasized engaging parents and facilitating parent-child interaction consistent with a developmental parenting model (Roggman et al., 2008). By incorporating language-supportive activities within that model, the family bookmaking activities resulted in gains in specific parent language-supporting behaviors and child receptive vocabulary. Even after just a few bookmaking visits, child language gains were evident. The power of this intervention strategy suggests broad potential. Although we expected more expressive language gains, the receptive language gains suggest that children's understanding of language is increased by the family bookmaking activities. The young age of the children and their developmental delays may result in slower gains in expressive language as these children often have fewer words than typically developing children.

Unfortunately, the intervention using family bookmaking activities was not delivered equally to all families. These variations were due to staff illness, family cancellations of home visits, and time taken by other program activities. Nevertheless, among those families who received the

family bookmaking visits, mothers' increased their use of language-supporting behaviors, and children increased their receptive language more than the comparison group. Although the sample size was small and the participants were not randomly assigned, the results of this exploratory study show that these family bookmaking activities have promise for guiding early interventionist practitioners with a sequence of specific activities that match best practices and result in parent and child gains after only a few home visits. A more rigorous study with a larger sample and with improved implementation is needed to provide additional support for the effectiveness of this approach with diverse families.

Conclusion

In summary, the family bookmaking activities appear to offer an effective, concrete way for early intervention practitioners to work through parents to support children's language development by engaging parent and child in specific language-promoting conversations and incorporating these conversations into small photo-illustrated books for the family to keep. Mahoney and Wiggers (2007) have recommended that early intervention practitioners shift their practices from working directly with children to providing coaching and supports for parents to facilitate their own children's development through ongoing interesting activities and daily routines. The family bookmaking activities are consistent with this recommendation.

Lisa K. Boyce, Ph.D., Family, Child, and Human Development, Utah State University USA

Mark S. Innocenti, Ph.D., Early Intervention Research Institute, Utah State University USA

Lori A. Roggman, Ph.D., Family, Child, and Human Development, Utah State University USA

Cora L. Price, B.A., Early Intervention Research Institute, Utah State University USA

Vonda K. Jump, Ph.D., Early Intervention Research Institute, Utah State University USA

Gina A. Cook, M.S., Early Intervention Research Institute, Utah State University USA

Eduardo Ortiz, Ph.D., Early Intervention Research Institute, Utah State University USA

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Table 1
 Characteristics of the Families Assigned to Intervention and Comparison Groups

Characteristic	Intervention (n = 21)		Comparison (n = 21)		t value	p value
	M	SD	M	SD		
Mothers' years of education	12.76	2.61	14.33	1.74	2.30	.03
Mothers' vocabulary raw score	40.00	5.45	44.29	5.00	2.62	.01
Household income	\$31,000	\$24,577	\$40,500	\$21,515	1.27	.21
Child gender (% female)	52		29		-1.58	.12
Child age in months	24.47	3.74	26.02	2.91	1.54	.14
Child expressive raw score (REEL)	45.10	6.97	37.67	10.05	-2.04	.05
Child receptive raw score (REEL)	45.48	8.24	47.29	12.57	-.83	.42

Table 2
 Regressions Predicting Maternal Language Supporting Behaviors and Children's Receptive Language

Step predictors	t entry	t final	B	SEB	β	R2 step	ΔR^2	F change	df
Model A: Maternal use of expansions									
Step	1.5	2.01+	.84	.42	.33	.06			
1. Maternal education									
Step		1.84+	2.78	1.51	.30	.15+	.09	3.38+	34
2. Intervention or comparison group									
Model B: Maternal use of open-ended questions									
Step	2.68*	3.28**	.04	.01	.56	.17*			

1. Maternal vocabulary										
Child age		.69	1.11	.07	.06	.18				
Step			1.84+	.71	.39	.31	.25	.08	3.39+	34
2. Intervention or comparison group										
Model C: Maternal use of "wh" questions										
Step		1.21	1.82+	.13	.07	.32	.14+			
1. Maternal vocabulary										
Child age		2.22*	2.61*	1.00	.38	.43				
Step			1.72+	3.979	2.31	.29	.21	.07	2.94+	34
2. Intervention or comparison group										
Model D: Children's receptive language										
Step		5.48**	5.38**	.84	.16	.74	.55**			
1. Receptive language pretest										
Maternal vocabulary		-.27	.48	.05	.11	.07				
Child age		-.37	.10	.06	.61	.01				
Step			1.77+	5.60	3.16	.22	.59**	.04	3.15+	33
2. Intervention or comparison group										

+ p < .10
* p < .05
** p < .01