Embedded–Explicit Emergent Literacy Intervention I: Background and Description of Approach

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ABSTRACT: This article, the first of a two-part series, provides background information and a general description of an emergent literacy intervention model for at-risk preschoolers and kindergartners. The embedded–explicit intervention model emphasizes the dual importance of providing young children with socially embedded opportunities for meaningful, naturalistic literacy experiences throughout the day, in addition to regular structured therapeutic interactions that explicitly target critical emergent literacy goals. The role of the speech-language pathologist (SLP) in the embedded–explicit model encompasses both indirect and direct service delivery: The SLP consults and collaborates with teachers and parents to ensure the highest quality and quantity of socially embedded literacy-focused experiences and serves as a direct provider of explicit interventions using structured curricula and/or lesson plans. The goal of this integrated model is to provide comprehensive emergent literacy interventions across a spectrum of early literacy skills to ensure the successful transition of at-risk children from prereaders to readers.

KEY WORDS: emergent literacy, literacy, preschoolers, intervention, educational services

B y viewing reading as essentially a complex higher order linguistic skill, and recognizing that many reading disabilities reflect an underlying deficit in language processes and/or knowledge, speech-language pathologists (SLPs) have an indispensable role to serve in preventing and ameliorating reading disabilities. Primary prevention activities—that is, arresting reading problems before they are able to manifest—focus on enhancing emergent literacy development for young children who are vulnerable for later reading problems. This article, the first in a two-part series, presents a clinically oriented preventive framework for conceptualizing the delivery of emergent literacy interventions for young at-risk children. The framework is termed the embedded–explicit model of emergent literacy intervention.

The embedded–explicit model is designed to guide the SLP who works with preschool and/or kindergarten children who are exhibiting difficulties in developing a strong literacy foundation, as suggested by early literacy screening, parental report, clinical observation, or the presence of specific individual risk factors (Justice, Invernizzi, & Meier, 2002). The model emphasizes the use of multilitered intervention for ensuring at-risk children’s attainment of critical emergent literacy skills to promote their successful transition from prereaders to readers. The term “at-risk” is used in this article to collectively describe those children who are developing emergent literacy skills more slowly than their peers, and are therefore susceptible for later reading difficulties. This includes not only children with language impairments, but also children with intellectual disabilities and children who have been reared in households in which literacy experiences are—for whatever reasons—underemphasized or infrequent. It also may include children with no obvious risk factors, but who exhibit underdeveloped literacy skills relative to their same-age peers.

The rationale for the present article and the companion article (Kaderavek & Justice, 2004) is to provide SLPs with a comprehensive framework for organizing emergent literacy interventions for young children. The present article is organized to first provide a general orientation to emergent literacy, including a brief presentation of historical context. The article then describes current models of emergent literacy intervention to provide background...
information used to develop the embedded–explicit emergent literacy intervention model. Last, the article presents the embedded–explicit model and discusses the role of SLPs in implementing this model. The companion article (Kaderavek & Justice, 2004) more specifically discusses children who are likely to benefit from this approach to emergent literacy intervention, presents specific literacy goals targeted during intervention, and provides examples of how this approach can be implemented most effectively in preschool and kindergarten classrooms.

AN ORIENTATION TO EMERGENT LITERACY

The term emergent literacy is used to describe preliterate children’s skills related to reading and writing before their achievement of conventional literacy (Sulzby, 1985; Whitehurst & Lonigan, 2001). Children’s emergent literacy has received considerable attention of late in academic, practitioner, and policy-making circles, as these skills are viewed as the developmental precursors to children’s attainment of fluent, skilled reading ability (Whitehurst & Lonigan, 2001). That is, emergent literacy skills—which are typically acquired in the preschool years—provide the foundation for children’s subsequent transitions to early or beginning reading and, ultimately, the achievement of conventional, skilled reading.

Several key areas of emergent literacy attainment are presented in Table 1, including phonological awareness, print concepts, alphabet knowledge, and literate language features. Attainment of these skills is seen as pivotal in the successful transition of children from prereaders to readers. An understanding of the sources of individual differences in children’s development of skills in each area paves the way for significantly decreasing the occurrence of reading disability, as difficulty with emergent literacy appears to be a causal contributor to later challenges in reading achievement (Badian, 2000; Catts, Fey, Tomblin, & Zhang, 2002; Elbro, Borstrom, & Petersen, 1998; Scarborough, 1989; Speece, Roth, Cooper, & de la Paz, 1999). The importance of early attainment of emergent literacy skills to children’s later achievements in skilled reading argues the importance of developing effective models of emergent literacy intervention to reduce the likelihood of later reading difficulties.

The last decade has therefore seen a tremendous increase in applied studies of the effectiveness of emergent literacy interventions for young at-risk children (e.g., Chow & McBride-Chang, 2003; Justice & Ezell, 2000, 2002; Neuman & Roskos, 1993; O’Connor, Jenkins, Leicester, & Slocum, 1993; van Kleeck, Gillam, & McFadden, 1998; Whitehurst et al., 1994, 1999). Although this field of research is relatively new, this emergent corpus of work has shown the value of early interventions for supporting literacy achievements in young at-risk children and, importantly, the potential long-term advantage of such interventions for influencing later reading achievements.

The relationship between emergent literacy intervention and reading development—exemplified in the recent volume commissioned by the National Research Council, Preventing

<table>
<thead>
<tr>
<th>Area of emergent literacy</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Phonological awareness</strong></td>
<td>Awareness of the sound structure of spoken language at the level of the word, syllable, onset-rime, and phoneme. At each level, skills comprise both blending (e.g., b-ag is bag) and segmenting (e.g., dog is d-o-g).</td>
</tr>
<tr>
<td><strong>Print concepts</strong></td>
<td>Knowledge of how print is organized, including relationships between written language units (e.g., letters make up words) and the metalinguistic terminology used to describe print (e.g., letter, word, write). Also includes understanding of how books are organized, the form and functions of environmental print, differential features of various print genre, and developmental writing skills.</td>
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<tr>
<td><strong>Alphabet knowledge</strong></td>
<td>Knowledge of the distinctive features and names of individual letters in both upper- and lower-case formats.</td>
</tr>
<tr>
<td><strong>Literate language</strong></td>
<td>Use of specific syntax/semantic features characterizing written texts (i.e., adverbs, conjunctions, mental/linguistic verbs, elaborated noun phrases) to explicitly render meaning in decontextualized discourse.</td>
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Reading Difficulties in Young Children (Snow, Burns, & Griffin, 1998)—has broadened the role of SLPs with respect to literacy over the past few years (see American Speech-Language-Hearing Association [ASHA], 2001). This role enhancement is not without controversy (e.g., Goldberg, 2003), as seeking out current “best practices” in emergent literacy intervention is complicated by the relatively limited empirical data confirming the value of specific intervention approaches, the political climate in which schools are under pressure to demonstrate yearly improvement in student literacy achievement via standardized tests (No Child Left Behind Act, 2001), and omnipresent concerns about existing SLP caseload demands and constraints (ASHA, 2000).

Additionally, the current roles of SLPs concerning literacy have been complicated by recent, yet dramatic, shifts in perspectives concerning service delivery models and how literacy development and intervention is most appropriately conceptualized. In the early 1990s, many experts encouraged SLPs to move toward more collaborative and consultative classroom-based models of service delivery (Creaghead, 1992; Ferguson, 1991). Variations of this approach were discussed, using terms such as team teaching, co-teaching, supportive instruction, complementary instruction (DiMeo, Merritt, & Culatta, 1998), or the transdisciplinary model (Linder, 1993; Woodruff &
McGonigel, 1988). These approaches encouraged SLPs to partner with teachers to meet intervention goals (Russell & Kaderavek, 1993).

At approximately the same time, educators in general were urged to use a whole-language approach to reading development (Goodman, 1986; Goodman & King 1990; Westby, 1990). Whole-language theory was a move away from the behavioral educational approaches of the 1980s, which stressed patterned drills and isolated linguistic skills. Instead, whole-language therapy stressed the reciprocal and dynamic relationship between oral and written language and endorsed the teaching of literacy through children’s intentional exploration and active engagement in contextualized literacy experiences (Goodman, 1986; Norris & Damico, 1990).

Taken together, increased emphasis on both collaboration and whole-language models of instruction propelled SLPs into early education classrooms to begin teacher collaboration using whole-language concepts. These concepts easily meshed with language-learning principles that were familiar to SLPs, including social-interactionist models of early learning (Rogoff, 1991), functional approaches to language intervention (Norris & Damico, 1990), and the importance of maintaining contextual relevance (Duchan, Hewitt, & Sonnenmeier, 1994). The whole-language emphasis on communicating meaning through print as a model of literacy instruction provided a logical bridge for SLPs to become involved as teacher collaborators within preschool and kindergarten classrooms.

Just as SLPs were becoming comfortable with their new roles in early literacy development, however, research began to emerge that emphasized the critical influence of discrete emergent literacy skills, particularly phonological awareness, print concepts, and alphabet knowledge, and the particular difficulties of children with language weaknesses in these developments. Specifically, convergent evidence from a variety of disciplines and research methodologies demonstrated that children’s phonological awareness, print concepts, and alphabet knowledge provided significant and unique variance in the prediction of later reading achievement (for phonological awareness, see Bradley & Bryant, 1983; Bryant, Maclean, Bradley, & Crossland, 1990; Burgess & Lonigan, 1998; Christensen, 1997; Lonigan, Burgess, Anthony, & Barker, 1998; for print concepts, see Badian, 2000; Chaney, 1998; Clay, 1998; Phillips, Norris, & Mason, 1996; Stuart, 1995; Tunmer, Herriman, & Nesdale, 1988; for alphabet knowledge, see Badian, 2000; Burgess & Lonigan, 1998; Christensen, 1997; Stuart, 1995; Tunmer et al., 1988; for review, see Scarborough, 1998). Experts increasingly emphasized that learning to read required distinct foundational skills in these areas, and that early individual differences across these areas of literacy explained significant portions of variability in reading achievement observed among school-age readers. It was argued that reading, unlike oral language, was not necessarily biologically preprogrammed and did not develop naturally in all children (Chall, 1996; Paul, 2001). Experts suggested that many children—if not all—would benefit from direct teaching of these foundational literacy skills. At about the same time, research began to show children with language impairment (LI) to consistently demonstrate underdeveloped skills in these critical emergent literacy areas relative to their typically developing peers (e.g., Gillam & Johnston, 1985; Magnusson & Naucier, 1990, 1993). Of additional concern, children with LI were found to exhibit significant risk for experiencing reading disabilities and academic problems despite participating in language-focused interventions, (e.g., Aram, Ekelman, & Nation, 1984; Bishop & Adams, 1990; Catts & Kamhi, 1986).

As a consequence, the role of SLPs in emergent literacy and the benefit of alternative approaches to literacy intervention have increasingly been reexamined. Improving early achievements in phonological awareness, print concepts, and alphabet knowledge is currently identified as a core responsibility of SLPs working with young children (ASHA, 2001), and meeting the needs of children with communicative impairments in these areas is a primary focus. However, a wider group of vulnerable children likely to become “poor readers,” who may not necessarily meet the diagnostic standards for LI also are likely to benefit from direct or indirect SLP involvement (ASHA, 2001). This position is supported by documentation that poor readers often have a history of underdeveloped phonological awareness abilities, subtle impairments with higher level cognitive–linguistic tasks, and clinically depressed oral language skills (Bishop & Adams, 1990; Catts et al., 2002; Lombardino, Riccio, Hynd, & Pinheiro, 1997; Scarborough, 1989; Stothard, Snowling, Bishop, Chipcase, & Kaplan, 1998). Collaborative interventions featuring collective involvement of preschool and kindergarten teachers, SLPs, and parents to ensure timely development of key reading precursors for all at-risk children is currently the gold standard for emergent literacy education and intervention (see Snow et al., 1998).

CURRENT MODELS OF EMERGENT LITERACY INTERVENTION

Empirical research documenting the efficacy and effectiveness of various emergent literacy intervention approaches for at-risk preschool and kindergarten children is a fairly recent enterprise. Nevertheless, this small but growing corpus of work has shown that early childhood activities and experiences can be structured for young children, including those with disabilities, in specific ways to accelerate key areas of emergent literacy development (e.g., Brady, Fowler, Stone, & Winbury, 1994; Ezell, Justice, & Parsons, 2000; Justice, Chow, Michel, Flanigan, & Colton, 2003; Justice & Ezell, 2002; Katims, 1991; Majsterek, Shorr, & Erion, 2000; Neuman & Roskos, 1993; O’Connor, Notari-Syverson, & Vadasy, 1996; Saint-Laurent, Giasson, & Couture, 1998; Schneider, Roth, & Ennemoser, 2000; van Kleeck et al., 1998).

Collective consideration of this research corpus shows emergent literacy interventions to have generally taken one of two approaches that reflect dichotomous theoretical perspectives based on either a “top-down” holistic model of reading development or a “bottom-up” reductionist learning
model (Bloom & Lahey, 1978). Watkins and Bunce (1996) contrasted these models as reflecting “whole-language” versus “phonological awareness” orientations of emergent literacy development. An emphasis on top-down or whole-language principles of reading development is reflected in interventions emphasizing children’s development of emergent literacy skills through child-directed, informal, naturalistic, contextualized, and meaningful interactions with oral and written language embedded throughout the day (Clay, 1998; Katims & Pierce, 1995; Watkins & Bunce, 1996). This is described here as an embedded approach to emergent literacy enhancement to emphasize how skills are targeted for young children, rather than using terminology that emphasizes a theoretical position on literacy development (e.g., whole language/top down). Interventions with a bottom-up orientation, in contrast, emphasize explicit teaching that directs a child’s attention to a range of discrete emergent literacy targets through directive clinician-directed therapy occurring on a regularly scheduled basis. Again, with an emphasis on how skills are targeted, the term explicit approach is used here to discuss such interventions. Key characteristics of these two intervention orientations are described further.

Embedded Approaches

Embedded approaches to emergent literacy intervention emphasize the unique value of children’s self-initiated, naturalistic, and contextualized interactions with oral and written language that are embedded throughout the day. The emphasis of such approaches is children’s expression of meaning and intent through their literacy acts, and the social value of literacy behaviors. An additional emphasis of embedded approaches is the role of adults as facilitators of children’s learning, and the influence of social interactions and child–adult relationships on children’s literacy development (Justice & Ezell, 1999; Watkins & Bunce, 1996). That is, children’s literacy growth is fostered through and grounded within socially embedded literacy experiences and interactions. Social contexts used to facilitate children’s emergent literacy knowledge include adult-mediated play involving literacy-related artifacts (e.g., crayons, lists, signs), interactions with contextualized print in the environment, and scaffolded exchanges with the oral and written language of storybooks. Direct instruction or clinician-directed therapeutic interventions are not used for skill development in embedded approaches (Watson, Layton, Pierce, & Abraham, 1994).

Studies of emergent literacy interventions of an embedded approach have focused on the value of broad environmental modifications to increase children’s naturalistic exposure to literacy concepts throughout the day, as well as their participation in socially interactive, meaningful literacy events and their use of literacy artifacts, such as books, writing utensils, signs, and lists. Katims (1991), for instance, implemented a year-long emergent literacy program for preschoolers with disabilities; this classroom-based program featured implementation and use of a well-stocked classroom library and classroom writing center in addition to frequent adult–child storybook readings.

Relative to a control group, children in the literacy-rich classroom made significantly greater gains over the academic year in their attainment of print concepts.

Literacy-enriched play settings (e.g., Christie & Enz, 1992; Neuman & Roskos, 1993), print-rich classroom environments (Taylor, Blum, & Logsdon, 1986), and adult–child shared storybook reading (e.g., Justice & Ezell, 2002; McCormick & Mason, 1986, 1989; Phillips et al., 1996; Whitehurst et al., 1994) are additional embedded approaches that have been researched. Studies have focused primarily on examining the influence of such interventions on children’s print concepts, alphabet knowledge, and writing, with little focus on phonological awareness outcomes. Literacy-enriched play settings foster children’s exposure to print and interactions with literacy artifacts by providing play centers that are infused with literacy materials (e.g., signs, labels, and functional print items). These are particularly effective when adults mediate children’s play by encouraging their dramatic use of literacy artifacts (Neuman & Roskos, 1993). Print-rich environments increase children’s exposure to and interactions with written language by instilling the classroom with large quantities of meaningful print stimuli (e.g., storybooks, notes, lists, directions, schedules, labels) (Katims, 1991). Adult–child shared storybook reading interventions focus on increasing children’s participation in reading exchanges (Whitehurst et al., 1994). These types of programs also emphasize the use of storybook reading as a way to encourage children’s implicit and explicit knowledge about written language (Justice & Ezell, 2000; Ukrainetz, Cooney, Dyer, Kysar, & Harris, 2000). Repeated exposure to storybooks is a particularly effective naturalistic language-learning opportunity: Adult–child repeated readings allow children to develop a literacy “whole” that subsequently facilitates their comprehension of specific literacy “parts” (Bishop, 1997; Lahey, 1988; Paul, 2001).

Explicit Approaches

Explicit models of emergent literacy intervention emphasize the importance of structured, sequenced clinician-directed instruction for the development of discrete skills. In such models, clinicians select particular learning targets, a sequence of exposing children to those targets, and the materials that are most facilitative for achieving intervention aims. Unlike embedded models, which tend to emphasize the meaning and intentions of particular literacy behaviors, explicit models take a more decontextualized and direct route to enhance basic skill units. Relative to embedded approaches, children’s exposure to literacy concepts in explicit approaches tends to be less naturalistic and features greater adult control, with the interventionist selecting goals and materials and specifying the teaching sequence and content. Explicit teaching is used to direct a child’s attention to a range of emergent literacy skills through directive instructional opportunities occurring on a regularly scheduled and carefully sequenced basis. These instructional opportunities feature adult modeling, demonstration, targeted elicitation, and repeated guided practice.

Explicit approaches to emergent literacy intervention
operate from the perspective that at-risk children, including those with significant oral language problems, require repeated, systematic, and deliberately scaffolded exposures to those difficult-to-acquire concepts and skills. These repeated learning opportunities are used to encourage children’s timely development of new skills and knowledge, while at the same time facilitate children’s use of previously acquired skills in developmental sequences. An important goal of explicit programs is to bring aspects of language and literacy to a metalinguistic level. Operating at the “meta level” facilitates children’s conscious manipulation of structures needed for literacy success and to learn the associations among smaller and larger parts of the alphabetic code. For example, to be a successful reader, children must eventually understand the relationships between phonemes, syllables, and words. Engagement in systematic interventions that expedite part-to-whole learning is a central feature of explicit literacy interventions.

Explicit approaches do not necessarily focus exclusively on phonological awareness, although phonological awareness has often been a central focus of this type of intervention. Phonological awareness deficits have been consistently linked to reading disability (see Catts & Kamhi, 1999; Stanovich, 2000; Torgesen, Wagner, & Rashotte, 1994), and relatively large numbers of children with language-based reading disability have protracted difficulty in analyzing and manipulating oral language at the phonologic and phonemic levels. This suggests the importance of addressing phonological awareness in emergent literacy interventions for children who are vulnerable for early and later difficulties in this area. However, analyzing and manipulating oral language at the phonologic and phonemic levels is neither a meaningful nor a naturalistic activity (see Liberman, 1999; Liberman & Liberman, 1990), making children’s participation in phonological awareness activities generally incompatible with embedded approaches to emergent literacy intervention. Successful phonological awareness interventions have most often featured children’s explicit engagement in code-based tasks that provide frequent exposure and repeated practice with analyzing and manipulating phonological segments of oral language (e.g., words, syllables, onset/rimes, phonemes) (e.g., Brady et al., 1994; Lundberg, Frost, & Peterson, 1988; O’Connor et al., 1996).

An example of one program that has proven to be effective for improving phonological awareness and other aspects of emergent literacy for kindergarten children was conducted by O’Connor et al. (1996). Typical and at-risk children (e.g., children with speech/language impairment, autism, mental retardation) completed brief, daily teacher-led lessons in large or small groups involving explicit opportunities to analyze oral language at the level of the word, syllable, onset-rime, and phoneme. Outcome measures involving phonological awareness and early reading tasks showed that children receiving these lessons significantly improved their phonological awareness and reading skills relative to a control group. Similar findings were demonstrated in van Kleeck et al.’s (1998) implementation of a 2-semester phonological awareness intervention for preschoolers with speech/language impairments, and by Brady et al.’s (1994) study of an 18-week classroom-based phonological awareness program for at-risk kindergartners. These studies have shown explicit phonological awareness instruction to be an effective route to skill development, and that emergent literacy intervention can make significant contributions to later reading achievement.

In addition to phonological awareness, other foundational emergent literacy skills can be addressed through explicit teaching, including print concepts and alphabet knowledge. Skills in these areas tend to develop more slowly for children with LI and those reared in disadvantaged circumstances (Boudreau & Hedberg, 1999; Lonigan et al., 1998). Justice and Ezell (2000, 2002) have conducted several studies examining the impact of adult use of “print-referencing behaviors” when reading with preschoolers. Print-referencing behaviors are used by adults to create a metalinguistic focus within the book reading context, and have been shown to influence children’s alphabet knowledge and print concepts.

Explicit teaching can also be used to support children’s use of literate language features, which are an important element of decontextualized narrative discourse. Narrative discourse is an important foundational skill in children’s development of written language (Kaderavek & Sulzby, 2000; Roth & Speckman, 1986). In decontextualized discourse, meaning is conveyed through specific linguistic features, primarily grammar and vocabulary. Westby (1999) described children’s use of precise grammar and vocabulary to linguistically render meaning in discourse as literate language. Literate language features include conjunctions, elaborated noun phrases, mental/linguistic verbs (e.g., think, know, remember), and adverbs. Use of these forms assists children to more closely match the decontextualized linguistic structures that are representative of written texts (Greenhalgh & Strong, 2001; Vellutino & Scanlon, 2001). Intervention research has shown explicit teaching approaches to effectively facilitate preschoolers’ ability to use specific structures similar to these targets (e.g., Fey, Cleave, & Long, 1997), and that children can benefit from explicit exposure to the metalinguistic features contributing to “making a good story.” For example, Hayward and Schneider (2000) initiated an explicit narrative intervention for 13 preschool children with LI; as a group, children showed significant improvements in story information and structural complexity following the 7-week intervention.

**AN INTEGRATED PERSPECTIVE: THE EMBEDDED–EXPLICIT MODEL**

Interventions that have been developed and evaluated to support emergent literacy in young children have thus typically featured an embedded or explicit orientation. The embedded–explicit model of emergent literacy intervention takes an integrated approach to emphasize practices associated with both orientations. This model features children’s participation in high-quality daily opportunities for naturalistic, meaningful, intentional, and highly contextualized interactions with oral and written language. The
model also features the use of focused therapeutic clinician-directed interventions to explicitly target those skills that are linked most critically with later reading success; explicit intervention is provided to all children in the preschool or kindergarten classroom, with additional effort devoted to children who show treatment resistance.

The goal of the embedded–explicit integrated model is to synthesize two promising strands of evidence-based practices (i.e., whole-language and phonological awareness literatures) to arrive at an intervention approach that is maximally efficient and effective for young at-risk children by (a) attending to the widespread aims of emergent literacy intervention and (b) clarifying the role of SLPs as collaborators and direct intervention providers.

The Widespread Aims of Emergent Literacy Intervention

When working with young children who are vulnerable for literacy-related challenges, two critical aims should be taken into consideration when selecting intervention approaches. Both aims are addressed in the embedded–explicit model. A first aim is ensuring children’s development of those skills that are most highly associated with later reading achievement, including phonological awareness, print concepts, alphabet knowledge, and literate language. The extant literature suggests that explicit models of intervention provide a particularly effective and efficient mechanism for ensuring widespread skill development in most, if not all, of these areas. For instance, in one recent study (Justice et al., 2003), at-risk preschoolers completed a 12-week emergent literacy program divided into two segments. One segment featured highly contextualized, naturalistic literacy activities through repeated adult–child storybook readings and scaffolded story telling experiences. The other segment featured children’s participation in directive, explicit clinician-led activities, including guided name writing, alphabet recitations with discussions about specific letters, and phonological awareness games (e.g., matching words on the basis of rhyme). Children made substantially greater gains in five areas of emergent literacy knowledge during the 6-week segment with explicit, directive activities as compared to the segment featuring highly contextualized nondirective naturalistic literacy activities. Six weeks of explicit instruction significantly increased children’s scores on tests of phonological awareness (two measures), print concepts, alphabet knowledge, and early writing.

The second and equally important aim of emergent literacy intervention is, however, to promote children’s development of literacy interest, which refers to a positive orientation toward literacy learning. Kaderavek and Sulzby (1995) found children with LI to be considerably more likely than other children to display a negative orientation toward literacy. This is an important finding, as positive regard for literacy contributes to long-term reading success and higher outcomes during emergent literacy interventions (Frijters, Barron, & Brunello, 2000; Justice et al., 2003). Positive literacy orientation may increase the sustainability and generalizability of literacy development as children become self-directed literacy learners, as children with high literacy orientation are more likely to initiate literacy interactions with parents and teachers. In turn, frequent literacy interactions, such as adult–child storybook reading, have short- and long-term positive impact on children’s literacy outcomes (Pellegrini, Galda, Jones, & Perlmutter, 1995; Scarborough & Dobrich, 1994; Senechal, Thomas, & Monker, 1995).

Embedded models of intervention may be more effective than explicit models for increasing children’s positive orientation to literacy (see Kaderavek & Justice, 2002), as the importance of increasing children’s self-initiated contextualized literacy interactions is a key emphasis of these models. In embedded approaches, children learn to use literacy as an instrument for self-expression and exploration. This is quite different from the aim of explicit interventions: Indeed, promoting children’s positive regard for literacy and their awareness of instrumental, functional aspects of literacy tends to be de-emphasized in explicit models.

The widespread aims of emergent literacy intervention are thus (a) to increase children’s skills in discrete skill areas that are critically linked to later reading success and (b) to promote children’s positive regard for literacy and their understanding of the functional, intentional use of literacy. To address these two aims simultaneously, the embedded–explicit model balances the use of directive, explicit interventions that result in developmental change in targeted areas with use of interventions emphasizing socially embedded, highly contextualized, self-initiated literacy interactions to promote children’s positive orientation and instrumental knowledge of literacy. The embedded–explicit model is depicted in Figure 1. As can be seen, embedded opportunities occur across the classroom day and use three evidence-based practices: print-rich environment, adult–child shared storybook reading, and literacy-enriched play settings. Explicit instruction occurs on a less frequent but regular basis, during which children participate in adult-led instructional lessons focusing on specific literacy targets.

Role of the SLP in the Embedded–Explicit Model

The involvement of the SLP in implementing the embedded–explicit model is critical. In a summary of current research findings, Pearson (2002) stressed the importance of (a) building literacy programs on a solid base of language development activities, (b) attending to both the global (i.e., discourse) as well as the discrete aspects of literacy learning, and (c) implementing small-group as well as whole-class learning opportunities. SLPs have clear expertise in these significant areas and can make an important contribution in fulfilling these goals, particularly for children who are at risk for difficulties with literacy development.

In implementing the embedded–explicit model, SLPs collaborate and consult with teachers to ensure that nondirective, contextualized literacy-learning events occur throughout the classroom day, and that all children in the
classroom are actively engaged in these ongoing embedded learning events. This is best accomplished by SLPs working in the classroom to mediate individual and small-group literacy interactions for children and to model language and literacy facilitation strategies for teachers. For example, sentence recasts, open-ended questions, and focused contrasts are effective techniques to increase children’s comprehension and use of written language forms during typical preschool activities.

To implement the explicit part of the model, the SLP takes a more direct role in service delivery—by regularly leading whole-class and/or small-group emergent literacy lesson plans. In this role, the clinician identifies individual learner goals, selects materials and activities, monitors progress, and works with teachers and parents to ensure generalization and retention of emergent literacy skills for individual children. The clinician may use a commercially available curricula (see Table 2) or develop individualized lesson plans to address specific learning targets, as described in the companion article to this paper (Kaderavek & Justice, 2004). The schedule of specific intervention implementation varies according to the needs of particular children, programs, or curricula. However, O’Connor et al. (1996) argued that brief interventions (i.e., less than 15 weeks in duration) are generally insufficient for sustainable gains for children who are vulnerable for literacy-development difficulties.

### Research Support for the Embedded–Explicit Model of Intervention

The embedded–explicit model of intervention has yet to be critically examined, although bodies of research have provided support for outcomes associated with the embedded and explicit approaches reported in this article. For instance, children have experienced gains in recognizing environmental print following adult-mediated literacy-play interventions, a type of embedded intervention (Neuman & Roskos, 1993); likewise, children have experienced considerable phonological awareness growth through explicit clinician-directed programs (e.g., Justice et al., 2003). No studies, however, have demonstrated widespread outcomes for children participating in emergent literacy intervention transcending phonological awareness, print concepts, alphabet knowledge, literate language, early writing, and...
literacy interest. It is likely that a dual-pronged embedded–explicit model is the only way to achieve such aims. There is some preliminary evidence showing the effectiveness of an emergent literacy intervention that is consistent with an embedded–explicit paradigm, reported in two studies by Whitehurst and associates (Whitehurst et al., 1994, 1999). In these studies, preschool children in Head Start received a multifaceted emergent literacy intervention involving frequent adult–child storybook reading as well as explicit classroom-based emergent literacy instruction. The storybook reading routines featured adults’ use of dialogic reading behaviors, which are designed to involve children in reading interactions as active participants; these include asking open-ended questions, using repetitions and expansions, and offering praise and encouragement. A more formal classroom-based instructional component also was used that focused on children’s development of phonological awareness through a teacher-led, explicit skills-based emergent literacy instruction. The outcome of these interventions showed that children receiving intervention made robust gains in phonological awareness, print concepts, and writing relative to children in control classrooms. Follow-up kindergarten assessments showed the advantage of preschool participation in emergent literacy intervention to be maintained for an additional year (Whitehurst et al., 1999). Although this research provides preliminary support of one variation of the embedded–explicit model, further work is required to show the relative advantage of this approach to other models of emergent literacy intervention.

SUMMARY

This article described the embedded–explicit model of emergent literacy intervention and presented background information used to develop the model. The embedded–explicit model reflects a contemporary integrated approach to developing emergent literacy skills in at-risk preschoolers and kindergartners. The rationale for the model is that an integrated approach that capitalizes on evidence-based practices of seemingly dichotomous orientations (i.e., whole-language orientation, phonological awareness orientation; see Watkins & Bunce, 1996) is likely to optimize emergent literacy outcomes for young children relative to the use of less integrated models. Research suggests that at-risk children, including those with LI, can benefit from explicit training on a wide range of language and literacy forms that are closely aligned with early literacy development and later reading achievement. At the same time, embedded approaches to supporting literacy development are important for promoting positive literacy interest and for ensuring maintainable and generalized literacy skills.

Clinicians are encouraged to provide a balanced use of interventions to ensure children’s frequent participation in socially embedded, highly contextualized literacy interactions that promote positive regard toward literacy experiences, with the use of directive, explicit activities that result in widespread developmental changes. The companion article to this paper (Kaderavek & Justice, 2004) more specifically describes the children who are believed to benefit from the embedded–explicit model, provides specific language and literacy goals, and provides examples of how this approach can be implemented effectively in the preschool or kindergarten classroom.

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