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Enhancing the early literacy development of children at risk for reading difficulties

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Abstract
This paper reviews the dynamic and interactive links between the development of children's language phonological awareness, and reading. Some of the key issues explored are procedures to enhance children's language development, decoding and word recognition skills, along with some relevant assessment and programming strategies that can facilitate children's early reading development.
In particular, the paper supports the suggestion that deficits in phonological awareness are often a consequence of slow vocabulary development (a classic marker of language delay) and that teachers need to be able to adapt their language and dialogue interactions for children with language delays.

Literacy difficulties

Eighty per cent of students identified by teachers as having learning difficulties have problems in learning to read (Louden et al., 2000) and while the identification of the most effective procedures to assist these children is still a challenge to educators there is strong support for the importance of reading interventions in the early years of schooling (Hay, Elias, & Booker, 2005; Kamil, Mosenthal, Pearson, & Barr, 2000; Molfese et al., 2006). The purpose of this paper is to review procedures that can facilitate the reading development of children who demonstrate early reading difficulties. The framework for the paper is that there is a strong reciprocal relationship between the structures and purposes of the language used in spoken and written texts, and that early reading interventions need to be multi-dimensional and multi-faceted. In particular, while letter name knowledge and phonological awareness (e.g., the awareness of the sound units, such as syllables and phonemes in spoken words) are known to facilitate rapid decoding and are important predictors of reading success (Adams, 1990; Byrne, Fielding-Barnsley, & Ashley, 2000; Snowling, 2000), these are not the only predictors of reading success. It needs to be acknowledged that there are a range of other measures that are also predictive of children's future reading ability (Bishop & Leonard, 2000; Scarborough, 2005; Snowling, 2005). For example, Scarborough (2005) has noted the predictive importance of children's concept of print, expressive vocabulary, sentence/story recall skills, receptive and expressive language, along with the students' phonological awareness and letter naming skills, and that these elements are interactive, such that an enhancement in one can have a direct and/or indirect influence on another of the elements.

In terms of students with significant learning difficulties, the indications are that many of these students have deficits in both phonological awareness and language skills (Fielding-Barnsley, Hay, & Ashman, 2005; Saada-Robert, 2004; Snowling, 2005). Thus, in the population of students with learning difficulties, language delays are a cause of reading delays, and the lack of reading skills has an ongoing negative influence on the students' vocabulary and language development (Catts & Kamhi, 2005). This reciprocal relationship between language and reading has significant implications for the type and range of interventions teachers provide to children with early reading difficulties. The key issues that will be explored in this paper are: procedures to enhance children's language development, decoding, and word recognition skills, and because there is a concern that many children with learning difficulties have poorly identified language delays, the paper will review basic assessment procedures in this domain.

Enhancing early language development

Children with early reading delays need more exposure to and more practice with both expressive and receptive areas of language, such as vocabulary development, and syntactic and semantic development, as well as greater amounts of dialogical interactions that engage and extend the children's level of language complexity (Catts & Kamhi, 2005; Landry, Swank, Smith, Assel & Gunnewig, 2006; Nation, 2005). Gombert (1992) has argued that children's language development directly and indirectly fuels the development of children's phonological and phoneme awareness, with Snowling (2005) noting from her research that deficits in phonological awareness usually follow directly as a consequence of slow

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vocabulary development (a classic marker of language delay). Similarly, Catts, Fey, Tomblin, and Zhang (2002) have argued that the majority of children with language delays suffer a double disorder, in the sense that the operation of both their reading pathways via phonological (decoding) and semantic (meaning) are compromised. The implications for teachers are that children who have language delays are also more likely to need instructional periods that are shorter in duration but more frequent, compared with their peers without literacy or language delays (Cook, 2000), with teachers needing to keep their language of instruction at a suitable level of complexity and clarification to better accommodate the children's speed of oral language processing (Bishop & Leonard, 2000; Nation, 2005).

Teachers can improve children's language and literacy development by enhancing their dialogue and instructional procedures with children in their classrooms. One method has been developed by Marion Blank and her colleagues (Blank, 2002; Blank, Rose, & Berlin, 2003) who have proposed four levels of language complexity and student-teacher dialogues. Initially developed for the early years of school it also has application to students in the higher grades. Referring to Table 1, at the lowest or first level, the child is required to respond to language concerning salient perceptions (e.g., to the question, "what is this?"), with a focus on vocabulary development, moving to the second level of the organisation of information stage where the key questions investigate how objects, events, or issues are classified. This organisation of information facilitates the child's encoding and retrieval of information into and from the child's long-term memory. The third level is focused on reorganising or adding to the information, based on what a child already knows of the topic, which is the linking of the information to higher order reasoning (e.g., "what else do you know about...?"). The fourth level deals with the abstract and at this level the language demands involve reflecting upon or restructuring perceptions (e.g., the question, "what do you think will happen if...?").

Often teachers may incorrectly assume that the child can deal with the higher order teacher questions, before the child's earlier levels of language proficiency are understood. For example, a Year 1 child still working at the vocabulary and classification stage of Blank's levels of discourse, is confused by a teacher talking of "good and bad" foods, if that child still does not know the names of the common fruits and vegetables and most of his/her language experience of "good or bad" deal with being cooperative with his/her parents. Questions about food being good or bad are level four questions, and the teacher needs to work with the child at the earlier, more foundation levels and to build up to the abstract level of questioning and dialogue.

Engaging in reading

A recurring issue in the learning difficulties literature is the need is to engage children with reading, be it through magazines, the newspaper, writing and reading their own stories, or texts associated with the internet (Cooney & Hay, 2005; Pressley, 2002). Once engagement is achieved the teacher, parent, or tutor has a starting point to talk to the child about the words, how they are pronounced and what they mean, to read along with the child and to encourage the child to read independently, and then to review and reflect on what he or she has read.

Table 1: Four levels of language complexity and proficiency related to teacher discourse and questioning (Blank et al., 2003)

Level of Complexity & Proficiency	Language Complexity	Example of Teacher Discourse and Questioning
1	Directly Supplied Information	What do you see?
2	Classification	What colour is that?
3	Reorganisation	Re-tell me the story
4	Abstraction and Inference	What made it happen?

This need for engagement in reading has to start early and the indications are that there is significant variability in the amount of early shared reading occurring in different homes. For example, Teale and Sulzby (1986) reported that book reading occurred as seldom as five times per year in some low-income families. As others have pointed out (Whitehurst et al., 1994; Snow, Burns & Griffin, 1998), such findings have underpinned the need for the development of literacy programs that aim to encourage parent-child book reading in communities of low socio-economic status, and for early childhood teachers to ensure that they incorporate significant language and vocabulary development within their regular program, especially for children from families where English proficiency is an issue (Marvin & Wright, 1997; Schiff-Myers, Djukic, McGovern-Lawler, & Perez, 1993).

Importantly, Whitehurst et al. (1994), concerned about the early literacy development of children from low socio-economic status communities, taught mothers specific interactive techniques to use when reading picture books with their preschool-age children. This intervention program, called dialogic reading, produced substantial effects on young children's language development and concept of print knowledge. Dialogic reading involves families, parents, or tutors reading with the child, rather than to the child or correcting their child's reading (Arnold, Lonigan, Whitehurst, & Epstein, 1994; Hargrave & Sénéchal, 2000; Morgan & Goldstein, 2004).

The implication for teachers from the dialogic reading research is that caregivers in low socio-economic status communities need to be encouraged to use with their children the types of oral language interactions that should help prepare their children for the instructional demands of the classroom (Hay et al., 2003). In terms of children's early literacy development a critical issue is the one-on-one, adult and child, dyadic interaction during storybook reading time (Arnold et al., 1994; Saada-Robert, 2004). In a dialogic reading situation, parents or tutors are asked to engage in a dialogue with the child about the content and context of the story and allow the child to direct and share in the conversations associated with the text and the pictures (Sénéchal, 2006; Whitehurst et al., 1994). The adult, listening to the child, expands on the child's dialogue, and the evidence is that the child then practises this linguistically enhanced dialogue. Thus, the child improves in vocabulary knowledge, syntactic knowledge (the rules/patterns of language) and semantic knowledge (word meaning), as well as in the social skills of turn-taking, and the conventions associated with reading text (pragmatics). Progressively, the novice reader will start to read along with, and direct, the parent/adult in re-reading familiar text, but this is less important to the dyadic interaction. For the child, dialogic reading helps to connect reading with a positive, supportive experience involving a caring social interaction and attention, while for the caregiver, it facilitates confidence and involvement in the child's reading acquisition process (Morgan & Goldstein, 2004; Whitehurst et al., 1994). Many of these dialogic support strategies have also been successfully incorporated into training programs for tutors who work with a range of students with reading difficulties (Woolley & Hay, 2004).

Recent Australian research by Elias, Hay, Homel, and Freiberg (2006) and by Fielding-Barnsley and Purdie (2002; 2003) have utilised and adapted the dialogic reading intervention of Whitehurst et al. (1994). Both of the Australian emergent literacy interventions concentrated on children who potentially were considered early "at risk" readers, and both interventions demonstrated that they were successful compared to similar young children who did not receive the interventions. There were, however, differences between the two studies, and in general terms, the Elias et al. (2006) intervention was more language-focused, while the Fielding-Barnsley and Purdie (2002; 2003) intervention was more directly related to pre-reading skills, such as concepts about print, phonological awareness, and alphabet knowledge.

Decoding

There is a body of evidence that supports the notion that there is a strong relationship between children's performance in phoneme judgement tasks and their progress in learning to read and spell words (Bryant & Nunes, 2004). This is not unexpected given that in the English language individual alphabet letters generally represent individual phonemes, and that the evidence is that most young children only become aware of phonemes as a result of learning to read an alphabet (Adams, 1990), with Adams also suggesting that many young students with reading difficulties have difficulty in identifying words from their sound patterns.

This need for decoding is understandable given that the beginning reader must learn to decode some thousands of words that are visually unfamiliar, to commit those visual patterns to memory and that all words are visually unfamiliar when encountered for the first time. That is, the child has to start to recognise the word by identifying and blending its phonological (sound) elements and comparing that sound pattern to the sound patterns of words in her/his spoken vocabulary (Hatcher, 1994; Hatcher & Hume, 1999). Improvements in phonological skills usually result in increases in children's ability to identify single words as well as enhancing their spelling

skills (Schlagal, 2001). Although, Saarnio, Oak, and Paris (1990) have shown that the reading comprehension of young children is primarily determined by decoding skills, but by Year 5 the child's ability to use the context of the text to derive meaning plays a more important role in the prediction of comprehension skills.

Word recognition

Efficient readers use a variety of orthographic data to recognise word units, such as individual letters, letter clusters, morphemes, word stems, and word patterns (Kamil et al., 2000). In the process of rapid word recognition, rather than converting the letter group into a sequence of sounds, blending the sounds, and matching them to a known spoken pattern, readers retrieve stored information simultaneously about how a word looks and sounds. Limited word recognition and fluency are possible causes of young readers' lack of comprehension because at the early stages of learning to read, children use all their working memory capacity to decode the symbols and text units, and thus meaning is lost at the expense of decoding (Lerner, 2003; Pressley, 2002). For a child to free up working memory in order to be more engaged in comprehension, the automatic processing of orthographic information is required (Schunk, 2004). This automaticity of word recognition allows children to devote the majority of their mental resources to understanding the text and acquiring new concepts and information (Deshler & Alley, 1996). Furthermore, the greater children's exposure to print, the more likely they are to develop this visual orthographic representation, to automatise this information, and retrieve words from their long-term memory word 'bank' (Snow et al., 1998; Schlagal, 2001).

In terms of teaching strategies, Tunmer and Chapman (2004) have suggested that when confronted with an unfamiliar word, the child should first be encouraged to look into the word for familiar letter and spelling patterns, and then to use context as back up support to confirm hypotheses as to what that word might be, e.g., make is /m/ plus /ake/, as cake is /c/ plus /ake/.

To enhance automaticity of word recognition, practice and over-learning are often required by some students (Lerner, 2003; Smart et al., 2001). Rather than isolated drill, however, this needs to be embedded in motivating activities that include reading high interest text, games and activities. Once a child has knowledge of the separate words the focus shifts, when reading aloud, to grouping words together as phrasing (Saada-Robert, 2004). Phrasing needs to be practised on known text, as new, unfamiliar text requires the use of monitoring and self-correcting strategies that slow down the reading process and the acquisition of meaning. Assisting the child to read the words is helping to 'set the child up' for success with reading. To facilitate the process of developing a child's word bank, Spencer and Hay (1998) have identified a contemporary Australian list of 400 high frequency reading words, that appear in children's early reading books, of which the first 50 are presented below.

Table 2: First 50 words of the 400 Spencer and Hay (1998) Australian Reading Word List

1	the	11	you	21	see	31	cat	41	get
2	a	12	look	22	he	32	they	42	house
3	I	13	can	23	for	33	out	43	where
4	is	14	we	24	go	34	at	44	down
5	said	15	come	25	am	35	what	45	ran
6	and	16	up	26	little	36	dog	46	of
7	my	17	it	27	this	37	she	47	old
8	in	18	me	28	will	38	mother	48	all
9	to	19	big	29	no	39	are	49	too
10	here	20	went	30	on	40	with	50	like

It is interesting to note that within the first 150 words of the Spencer and Hay list, pronouns, such as she, he, us, me, him, and her; as well as words associated with the tense of verbs such as come, came, and comes were well represented. Pronouns are pivotal to the reader's comprehension of text and even if the child is able to pronounce the pronoun, the teacher still needs to evaluate the reader's understanding of, to whom the pronoun refers to, in relationship to the text. Problems associated with pronouns and the tenses of verbs are often common difficulties for children with reading difficulties (Catts & Kamhi, 2005; Cook, 2000). Teachers, therefore, need to explain to children who are at the beginning stages of reading, how verbs and pronouns change in relationship to the tense and structure of the sentence.

When the child is learning a new word it is recommended that the teacher first introduce the word in context and within the meaning of the sentence, then for the teacher to talk to the child about the word as a unit. During the focus on the word unit stage, the child may need to orally rehearse the word and clearly visualise it away from other background text, with the teacher reviewing whether the child understands the word, its usage and structural features before returning the word back into the passage where it is again reviewed. Thus, the teaching of high frequency reading words should not be an end in itself, but rather one means of achieving greater comprehension of text (Deshler & Alley, 1996; Lerner, 2003; Woolley & Hay, 2004).

To assist young children's motivation and confidence to engage with words, they often need opportunities to work and play with words, where there is a focus on enjoyment and social peer interactions (e.g., board games, card games like matching, and computer word games). In addition, the child also builds confidence by interacting with a personal group of words, letters and texts that they know how to read and write. This 'playing' promotes the learning of these words and enhances the prospect that the children will gain pleasure from reading. Because many sight words are commonly used to connect other words together, a list of short meaningful phrases or sentences can also be incorporated into the child's reading program, rather than just single sight words (e.g., the phrase "come over here", after the child recognises and understands the meaning of the word "come").

Classroom

Unfortunately, teachers often move through the teaching of reading to children too quickly for many pupils with reduced aptitude and confidence in their language and reading abilities (Snow et al., 1998). In part, this may reflect the need for teachers to follow authorised national curriculum programs, with Campbell et al. (2001) claiming that many teachers make few significant adjustments for the literacy levels of children with reading problems, apart from giving the children some books that contain text that is at a lower reading age than their classroom peers. The concern is that this level of classroom reading program adjustment is not sufficient, given that one of the main differences between children with reading difficulties, compared with their peers without difficulties, is the amount of time it takes the children to complete a range of classroom activities and the number of trials before they achieve success (Byrne et al., 2000; Snowling, 2000). Thus, the frequency and duration of instruction impacts on the child's ability to understand and master the learning and reading task. Consequently, if it takes children with academic difficulties longer to master a task, teachers have to consider using educational resources and methods that will keep students motivated, focused, and on-task for a longer period of time. Byrne et al. (2002) maintained that those students who are slower at mastering foundation reading knowledge and concepts are going to require more of everything – more explicit instruction, more opportunities to practice, and more general assistance.

Assessment

While it is recognised that children with literacy difficulties require appropriate programmes of intervention that begin as soon as difficulties become apparent, Snowling (2005) noted that many children with mild to moderate reading and language difficulties still go undetected, or if they are noticed, teachers are unsure how to progress with an intervention. In a classroom, assessment and intervention need to be closely linked and involve an iterative and dynamic cycle of activities involving observation, probing to understand the nature of the difficulty, intervention, monitoring and evaluation. To better achieve this process, a list of some of basic assessment instruments that would facilitate a learning support teacher's understanding of young children's language and early phonological performance is given in Table 3 (see page 122).

In conclusion, teachers working with young children with reading delays need to be aware of the dynamic and interactive links between children's language, phonological awareness, and reading development. When programming for children with possible reading delays it is important to remember the predictive importance of a range of reading variables including children's concept of print, expressive vocabulary, sentence/story recall skills, and receptive and expressive language,

Table 3: Suggested mainstream language and early phonological tests

Test	Purpose
Language	
PPVT: Peabody Picture Vocabulary Test (3rd ed.) (Dunn & Dunn, 1997)	Receptive vocabulary, two years to adult, USA norms
HPNT: Hundred Picture Naming Test (Fisher & Glennister, 1992)	Expressive language, Australian norms, suitable for young children and early schooling
PLAI: Preschool Language Assessment Instrument (Blank, Rose, & Berlin, 2003)	Identifies children's functioning on four levels of language complexity, suitable for early schooling and students with language delays
Phonological	
PAT: Phonological Abilities Test (Muter, Hulme & Snowling, 1997)	Includes rhyme detection, rhyme production, word completion-syllables and phoneme completion, beginning and end phoneme deletion, a speech rate test and a test of letter knowledge. This test is also used in association with the program Sound Linkage (Hatcher, 1994).
Munro, J. K. (2000). Assessing and teaching phonological knowledge. Camberwell, Victoria: Australian Council for Educational Research.	Includes awareness of sound patterns in words, segmenting words into sounds, sound blending, manipulating sounds in words, phonemic recoding and has Australian norms

along with the child's phonological awareness and letter naming skills. While there is uncertainty as to the 'best' place to start an intervention for children with reading delays, the indications are that the interventions need to match the child's linguistic development and to be multi-dimensional. The elements that predict children's success with reading (e.g., vocabulary and phonological awareness) are interactive, such that an enhancement in one area can have a direct and/or indirect influence on another of the elements. The important point is to engage with the child and to develop the child's vocabulary and ability to organise information, which has an indirect influence on the child's ongoing phonological awareness and word recognition skills, as well as fluency with reading and confidence. The evidence is that many of the children with significant reading delays also have an associated language delay and as a consequence suffer a double reading disorder, being weak in phonological (decoding) and language semantic (meaning) processing. Thus these children are a challenge to educate and are going to need support and systematic instruction within a framework that enhances their language, decoding, and word recognition skills.

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