Phonological awareness: Necessary but not sufficient.

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Abstract

Approaches to teaching reading to children who have literacy difficulties have often been summarised as a choice between *either* a whole language *or* a decoding approach. It is maintained in this paper that this *either or* notion has failed to acknowledge that reading is a dynamic process where the elements of language, thinking (metacognition), and phonological skills form an interactive relationship and any weakness in one of these elements inhibits the child's reading development. This position paper explores the three elements, the implications for classroom practice when the focus is on a combination of the three elements, and outlines possible direction for future research.

Although most children do learn to read successfully up to 15% of Australian children fail national benchmark tests in reading, despite receiving intervention support (Elkins, 2002; Louden et al., 2000). While there is also a growing consensus that appropriate and successful early learning experiences facilitate later academic, social, and cognitive development (Homel, Elias, & Hay, 2001) the evidence is that children with reading difficulties are a challenge to teachers, parents, and educational authorities. The indications are that poor readers often remain poor readers throughout their schooling (Snow, Burns & Griffin, 1998) and difficulty in early reading is highly correlated with later school failure and social difficulties (Goodyer, 2000). Students with delays in early reading development are associated with delayed language development, difficulties with memory tasks, and phonological difficulties (Snowling, 2000; Torgesen, 1999). Furthermore, Australian teachers often report that they lacked the professional knowledge on how best to teach literacy to this group of students (Rohl & Milton, 2002).

Luke and Freebody's (1999) theoretical model suggests that the reader engages with a text in *four* ways. As a *code breaker* the reader is concerned to decode the marks on the page. The reader must also identify what the *text means* for them and, as a *text user*, understand the structure and social functions of the text. Finally, as a *text analyst*, the reader is called upon to critically analyse its underlying beliefs. Students with reading difficulties can have persistent problems across areas, and teachers must select and implement interventions for each area. The Luke and Freebody model can be organised under three domain headings, *decoding* which is linked to code breakers, *language* which is linked to form, and meaning, and *metacognition* which is linked to text user and analyst. In this paper we will refer to these three domains of instruction. We also include the theoretical notions of Stanovich and Beck (2000) that in the achievement of reading; decoding, language, and metacognition work in an iterative, dynamic, and interactive way, so that gains or deficits in one domain will directly and indirectly influence the child's development in another, and ultimately in the entire reading process. We will discuss the comparative effectiveness of different literacy teaching approaches (decoding, metacognition or language) for children with initial reading difficulties.

The innovation in the ideas expressed in this paper are the links between recent theoretical developments in the domains of speech and language, phonology, and metacognition, and the understanding that three variables together make a difference in children's reading success. This paper shifts the literacy debate away from the simplistic and unproductive argument about whole language versus decoding, to a much more sophisticated and as yet unresolved question as to the most effective duration, intensity, and combination of approaches that facilitate children's literacy learning, particularly for children with early reading difficulties. The approaches under investigation are language (form, syntax, and semantic knowledge), decoding (phonological and alphabetic knowledge), and metacognition (planning and reflection). In this paper we make a case as to why

each is important, and how the approaches interact. Although there is international literature on the approaches, the Australian educational and curriculum setting is somewhat different, and it is essential to identify what is effective in the Australian education context as well as add to the international literature.

There are still many unanswered questions and much debate about which teaching method or methods best match the diverse needs of children (Marrow, Gambrell, & Pressley, 2003). On the one hand, there is evidence that a focus on systematic teaching, drill and rote mastery of words, basic concepts, and spelling is effective (Roblyer, 2003). On the other hand, the concern is children's literacy development involves more than rote learning; being a dynamic thinking, linguistic process, incorporating problem-solving, discussion, reflection, and decision-making (Blank, 2002; Cooney & Hay, 2005; Wong et al., 2003). One complication is a common teaching practice of moving children too quickly through literacy activities, particularly for pupils with deficits in aptitude, background language, concepts, and confidence in reading (Schunk, 2004). The teaching approach and its intensity and duration of instruction all affect the child's mastery of a literacy task (Byrne, 2002). Consequently, if it takes children with literacy difficulties longer to master a reading task, teachers have to consider using methods and educational resources that motivate, keep children interested in reading, and on-task for a longer period of time. Byrne (2002) makes the point that those children who are slower at mastering foundation literacy knowledge and concepts are going to require more of everything, more explicit instruction, more opportunities to practice, and more general assistance: the need is for differential approaches and rates of instruction.

The language component

Children's oral and early language proficiency underpin the emergence of formal reading (Bishop, 1997; Mann, 2003). Many children entering Year 1 are confronted with unfamiliar vocabulary and syntax, unfamiliar routines, unfamiliar tasks, and an unfamiliar language of instruction, resulting in negative academic outcomes for the child (Elias et al., 2002; Schiff-Myers et al., 1993). Hay et al. (2003) found that more than 1 in 3 children starting Year 1 in a Brisbane disadvantaged community demonstrated a delay of at least a year behind their chronological age on receptive language tests and that 1 in 5 also had expressive language delays of at least one year. This has significant implications for the design of early reading intervention programs and for teachers to concentrate on instructional approaches that enhance the children's vocabulary, semantics, and syntax development. The argument is that children need a language platform to make sense of any phonological instruction. Prematurely introducing a lock-step phonological program at the start of Year 1 before this platform is developed confuses children and may do more harm than good to the child's long-term literacy development. Even when studies control for intelligence and socio-economic status factors, students with early language delays have more difficulties with reading fluency, spelling, and reading comprehension than their age-matched peers. They are also more likely to select educational pathways that are considered less academic, and exit school earlier than their peers (Beitchman et al., 2001; Snowling et al., 2001).

Children are not a homogenous population but present with variability in articulation, fluency, morphology, syntax, semantics, orthographic knowledge, and pragmatics. Children with deficiencies in basic language abilities perform significantly below their age peers on later tests of word recognition, decoding skills, and reading comprehension, particularly if no language intervention is implemented (Snowling., 2000). Sustained language and reading interventions are a necessity for children with early language delays; however, what are far from resolved are the design, timing, and duration issues associated with that intervention (Mann, 2003). Stanovich and Beck (2000) reported that more research is needed on the causal inter-relationship between language processing and phonological knowledge. Beitchman et al. (1996) asserted that cognitive and metacognitive processes are associated with memory storage and retrieval, planning, and attention, all of which are strongly linked to language and directly and indirectly influence school and reading achievement.

To date there has been a focus on the importance of phonological awareness as a prerequisite for reading (Adams et al. 1998; Byrne & Fielding-Barnsley, 1991; 1993; Byrne, Fielding-Barnsley, & Ashley, 2000) but very little research includes a broader focus on language issues such as receptive and expressive vocabulary, verbal memory and syntax. As The notion that any program can be a one-size-fits-all approach would deny the reality of individual differences and the diversity within all classrooms. Following this line of argument Byrne and Fielding-Barnsley (1991) made the important point that whilst phonological awareness is a necessary prerequisite for reading it is not sufficient. Other broader language skills play an important role when children are required to comprehend more difficult prose. Muter (2003) pointed out in her overview of children's early reading development that linguistic knowledge may compensate for inadequate phonological skills. Blank, Rose, and Berlin (2003) have demonstrated that for children to be successful in formal schooling and reading they need mastery of four levels of language complexity. The indications are that teachers can design interventions based on children's current level of language complexity and improvements in complexity directly and indirectly

enhance children's reading achievement (Bishop, 1997). The authors propose Blank's language complexity research as one approach to improve children's reading development.

Decoding component

Children with reading difficulties are more likely to have difficulties in manipulating information in reading and in decoding unknown words than their more academically successful peers (Byrne, Fielding-Barnsley, & Ashley, 2000). The beginning reader must learn to decode thousands of words that are visually unfamiliar and to commit those visual patterns to memory. All words are visually unfamiliar when encountered for the first time and a powerful strategy is the use of phonological knowledge to identify the word. That is, the child recognises 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 (Hay, Elias, & Booker, in press).

Letter name knowledge and phonological awareness (e.g., the awareness of the sound units such as syllables and phonemes in spoken words) facilitate rapid decoding and are important predictors of reading success. Thus the teacher's focus becomes one of making sure that children can teach themselves (self-teach) visually unfamiliar words and theoretical, experimental, and clinical evidence points to the necessity of helping unskilled readers acquire the explicit knowledge of phonological word structure (Lovett, Barron, & Benson, 2003; Walker, 2005). Successful early readers need to develop positive attitudes and exposure to print, as well as extend their vocabulary, and phonological awareness, but whereas most children achieve the necessary levels of phonological awareness through incidental learning experiences, this is not the case for some children (Rack, Snowling, & Olson, 1992).

Improvements in phonological skills usually result in increases in children's ability to identify single words, but there is debate regarding the timing, optimum levels, and intensity of phonological instruction within the total reading programme (Schlagel, 2001; Torgesen et al., 2000). This debate is important for as Torgesen (2002) reported there are two unresolved challenges. The first is to identify the appropriate balance between phonemically explicit instruction at the word level and instruction in broad language skills that is most effective for children's long-term growth in reading. The second challenge is to identify the amounts of instructional intensity and duration that must be provided for different populations of children.

Metacognition component

Interventions for young children with reading and phonological problems are more complex than just drill and practice, and reading is more than just "calling out words". Children need to develop a metacognitive understanding of the task, and when and how to apply reading and decoding strategies. Research with phonological awareness training demonstrated that it alone is not enough, and task comprehension and task ownership also has to occur (Cunningham, 1990). Hay's (2000) research with students identified as having literacy and reading difficulties produced an Effect Size (ES) of .85 for a metacognitive based intervention, developed by Ashman and Conway (1993; 1997) called *Process Based Instructions* (PBI). This effect size is greater than that produced by phonological awareness training on phonological measure (ES = .73), and reading measures (ES = .73) (Bus & van IJzendoorn, 1999). The underlying cognitive elements of PBI are problem-solving, planning, decision-making, and children's reflective thinking. These elements are thought to be activated by children's metacognitive knowledge gained through progressive instruction about, and experience with, the process of planning, implementation, review, and adaptation. This is a dynamic system where feedback and practice build confidence and automaticity.

The child's monitoring of his/her performance enables the child to: evaluate the task requirements; recognise the need for a strategy; search for the availability of an appropriate strategy within his/her repertoire of strategies; execute the strategy; and monitor the effectiveness of that strategy. The claim is that children with reading deficits have a repertoire of strategies (including phonological, word attack, and comprehension strategies) but they have deficits in accessing, executing, and monitoring the effectiveness of those strategies (Ashman & Conway, 1997; Wong et al., 2003; Schunk, 2004). If this is the case then compensatory reading interventions need to shift away from just the traditional phonological interventions and include more of a metacognitive focus.

The utilisation of planning and reflection, together with active participation in the learning process, and the explicit teaching of conceptual knowledge, benefits students in three ways: in the comprehension and learning of the concepts; in understanding the steps involved in working out a solution; and in their ability to use and generalise their knowledge to new situations (Ashman & Conway, 1997). When a literacy concept is understood and acquired, guided and independent reading practice facilitates fluency, and the meaningful literacy context of instruction assists generalisation (Spencer & Hay, 1998). While there is still debate as to how effective

metacognitive interventions, such as PBI are with young children's reading, there is a growing opinion that they represent an innovative direction for research and intervention, particularly for those children who have failed to progress and profit from traditional classroom instruction (Ashman & Conway, 1997; Schunk, 2004).

Nature and duration of interventions:

The traditional early literacy intervention programs extend for 8 to 12 weeks with the commonest approach the direct or indirect teaching of phonological awareness and word decoding skills (Lovett et al., 2000). What is unclear is whether other approaches or combination of approaches need to be encouraged for children with reading difficulties or should decoding interventions just be extended? Torgesen (2000) stated that this issue is under-researched, that individual differences in responses to early intervention reading programs are poorly understood, and there is a lingering problem, often ignored in the literature, the children who do not respond. The estimation is that around 6% of children who participate in extensive reading improvement interventions fail to make any progress (Lovett et al., 2000). Fuchs et al. (2003) argued that this 6% is a gross under-estimation, but that 30% of all children at risk of literacy and reading difficulties, and 50% or more of children with special needs do not benefit from research-backed phonological awareness programs. The children are described as "treatment resisters" or "non-responders" (Torgesen, 2000). Understanding the extent and characterises of children who are "resisters" is important, if more effective interventions are to be developed and the expenditure of significant budgets on children at risk for reading failure is to be justified (Fuchs et al., 2003).

There are two studies, Torgesen et al. (1999) and Lovett et al. (2000) that provide evidence for this intensive approach. Torgesen, screened children on letter knowledge and phonological awareness and 12% of the lowest performers were randomly assigned to one of four phonological instructional conditions. While those children involved in the intervention made improvements in word decoding tasks compared to their non-intervention peers, both groups of children produced similar test results for word identification and reading comprehension at the end of the period. On reviewing Torgesen's (1999) research, one can speculate why the decoding intervention had such limited influence on children's overall reading development. It could be that the duration and intensity of the decoding intervention was not powerful enough to enhance the children's word recognition skills and other reading abilities. It could also be that not all children with reading difficulties need intensive phonological intervention (Hatcher & Hulme, 1999). Using a randomised treatment design over five conditions, they reported that a combination of interventions maybe the optimum form of intervention. Lovett et al., however, ignored the role of language deficits in reading deficits and only used a narrow range of metacognitive strategies in their study. Given that children with reading difficulties also have metacognitive processing problems and language delays (Mann, 2003), the need is to compare different intervention approaches (i.e., phonological, metacognitive, and language) and their intensity.

Future research: Although there is consensus that phonological awareness needs to be incorporated in the early reading program for children with reading problems the unresolved question is, what is the best form of intervention for children with early literacy difficulties? Do these children need more time on task in the phonological domain, the intensity and duration argument, or should teachers change the program for these children, the multi-dimensional argument? The authors support the two notions of McBurney and White (2004) who maintained; first that optimal programming practice is more accurately identified when a large cohort of similar students is randomly assigned to different intervention conditions to better control for child, setting, and instructor variables. Second, that by comparing the outcomes of interventions of similar and different durations and intensities the researcher is better able to clarify the best form of that intervention. Another problem often overlooked in most of the past intervention research is the lack of information on the participating children's regular classroom instruction and home literacy environment (Fuchs et al., 2003). The requirement is to understand and document the home and classroom practices, the cumulative literacy activities that "normally" occur for children with and without reading difficulties, as well as the effectiveness of supplementary literacy interventions.

In summary, the authors of this position paper maintain that reading development is a dynamic process requiring thinking, language and decoding skills. It is argued that children's oral and early language proficiency underpin the emergence of children's phonological and formal reading skills, and linguistic knowledge can, at times, compensate for inadequate phonological skills. It is also agued that children need to develop a metacognitive understanding of the reading task, and understand when and how to apply reading and decoding strategies.

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