Research on Reading Comprehension Difficulties After Year 4: Actioning Appropriately

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About 10%–20% of students in Australian schools experience ongoing literacy problems. Many students exhibit average intelligence and ongoing reading and comprehension difficulties after year four. Their reading problems are not linked to factors such as sensory acuity deficits or socioeconomic disadvantage. Recent research suggests that many of these problems may be related to language difficulties. Other researchers have sought to explain persistent reading failure by studying localised and whole brain functions. There are also a number of other factors outside the learner that contribute to the persistence of reading comprehension problems in the middle school years. However, the research findings are varied. Consequently it has been difficult to construct consistent and appropriate instructional strategies for students who experience reading comprehension failure over long periods of time. The existing research literature has recognised good teaching approaches but it has been found that many of these are not widely practiced in classrooms. This study seeks to locate within the current body of research subgroups of failing readers and to suggest strategies that can be applied to teaching practice.

Introduction
Approximately 30% of all students in years 3 and 5 do not meet the identified performance standards in reading and writing in Australian schools (National School English Literacy Survey, 1997). Other research findings consistently show that there are about 10% – 20% of students with ongoing literacy problems (Louden, Chan, Elkins, Greaves, House, Milton, Nichols, Rivalland, Rohl, & Van Kraayenoord, 2000). In the United States evidence from longitudinal, population-based data indicates that a similar proportion of the population have a significant reading disability (Reid Lyon, 2003; Vellutino, Fletcher, Snowling, & Scanlon, 2004). Even though reading pedagogy in recent times has generally broadened to include a socio-cultural perspective students with reading difficulties have tended to be lumped together in intervention programs that focus on word level skills without taking into consideration the individual language and background needs of students (Luke, 1998; Reid & Green, 2004). Although it has been found that a broad range good teaching methods can improve the reading performance of students with reading delays they are not, as yet, widely practiced in classrooms (NRP, 2000; Pressley, 2002; Snow, 2002). Added to this is the concern that there has been relatively little research involving the systematic evaluation of existing literacy
intervention programs (De Lemos, 2004). This study seeks to locate within the current body of research subgroups of failing readers and to suggest some strategies that can be applied to intervention practices.

**Late-emerging reading difficulties**

Many children experience difficulties in acquiring basic reading sub skills such as word identification and phonological decoding despite the fact that many of them exhibit average intelligence and have had adequate opportunities to learn (Vaughn, Levey, Coleman, & Bos, 2002; Vellutino, Fletcher, Snowling, & Scanlon, 2004). Many educators have asserted that phonological awareness of the sound structure of words and the ability to manipulate sounds in words are key components in the development of reading ability (Tumner, Chapman, Greaney, & Prochnow, 2002). However, despite the widespread systematic approaches to teaching phonemic awareness and decoding, a significant number of students enter the upper-primary and middle school grades with notable deficits in their reading ability (Manset-Williamson & Nelson, 2005). Many of these students also have deficient comprehension, poor automatic word identification, poor decoding and fluency difficulties (Vellutino et al., 2004). There are concerns that by the time they reach the upper-primary grades resistance to remediation will have set in and they will be beyond the age when reading skills can easily be taught (Manset-Williamson & Nelson, 2005; Vaughn, Levey, Coleman, & Bos, 2002).

Leach, Scarborough & Rescorla (2003) observed that the first indication that a student may have reading difficulties is from poor performance on comprehension tests in fourth grade. They claimed that one reason for this comprehension delay is that before the end of third grade most texts are narratives and provide little challenge with regard to vocabulary and comprehension. Furthermore, they maintained that much of the material written in the earlier grades is usually pitched within the instructional levels of most of the students. However, after year three the written language generally becomes much more complex and there is an increasing emphasis on comprehension. At this level there are more domains of knowledge and the vocabulary becomes increasingly more specialised. Texts become more demanding with regard to length, informational load, syntactic complexity, and genre types. Students with specific reading difficulties find it difficult to cope the increasing demands of more difficult texts due to their lack the speed of word recognition and text reading fluency. Added to this is the fact that the existing strategies that they apply to the reading task are often inadequate. For example, some students with reading difficulties rely almost entirely on sight words until they find that the vocabulary and word complexity become too unmanageable.

**Identification**

It has been demonstrated that many students, identified as being "at risk" for reading failure, in the first two years of school can be helped with the development of early reading skills (Reid Lyon, 2003; Torgesen, 2000). The concern is that delays in identification usually result in a delay in the provision of effective reading instruction (Reid Lyon, 2003). A recent survey conducted by Rhol and Milton (2002) in Australian schools found that one in 20 schools indicated that they conducted no evaluation of programs and one in 50 did not evaluate student progress. Less than one-third of the
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Schools reported assessment at school entry. Only one third of the schools indicated assessment of oral language even though most schools contained students with speech and language problems that had been identified by specialists. Furthermore, many of the assessment measures used in schools were over 20 years old and may need some revision to reflect current literacy theory and practice. Snyder and Caccamise (2005) maintained that assessment can easily identify problems when findings from text reading are viewed in conjunction with the student’s performance on other measures like word reading or decoding, alphabetic knowledge, phonological processing, automatic word recognition, and listening comprehension. Likewise, Bishop, and Snowling (2004) have suggested that a comparison of reading comprehension with listening comprehension can be a good indicator of reading performance. Furthermore the National Reading Panel (2000) put forward that educators and clinicians should also assess students’ alphabet knowledge, phonemic awareness skills, phonological processing, reading vocabulary, and reading fluency.

A major concern is that without adequate early assessment, and the longer reading problems persist, the more complex and deep-seated they become. Over time persistent reading failure inevitably affects reading related attitudes and willingness to try (Tunmer et al., 2002). For example, when children reach the age of approximately eight the evaluations that they make about themselves become increasingly comparative. They often seek to compare their performance in reading with that of their more able peers, who read well (Humphrey, 2002). As a result they often attribute lack of success to attributions that are beyond their control. They develop learned helplessness by seeking to avoid what is perceived as negative reading experiences. Moreover, children with specific reading difficulties usually do not have positive academic experiences at school before their problems have been properly identified. As a result their persistent reading difficulties are often linked with poor self-concept, poor self-esteem and poor academic achievement (Tunmer, Chapman, Greaney, & Prochnow, 2002).

Another major problem is that a majority of students identified early are classified on the basis of word level processing skills rather than comprehension deficits (Leach, Scarborough & Rescorla, 2003). This emphasis on reading accuracy has a restricted focus and leads to a limited identification of reading difficulties (Bishop & Snowling, 2004). Added to this is the tendency for late-identified students with reading difficulties to use their strengths when reading to compensate for and conceal their weaknesses. For example, students with developmental dyslexia may use good semantic and syntactic skills to support laborious decoding by using contextual cues to read (Nation & Snowling, 1988b). Likewise poor comprehenders may hide their considerable literacy difficulties for some time by relying on their strong phonological skills to prop up their word decoding difficulties. There does come a time, however, when the self-protective strategies they use can no longer manage the increasing complexity of the written language (Nation & Norbury, 2005).

Reading subgroups
Some researchers have proposed a method for sub grouping poor readers based on individual differences in the critical components of reading (Catts, Hogan, & Fey, 2003).
Joshi and Aaron (2000) referred to this method as the Reading Component Model that is based on the Simple View of Reading as proposed by Gough and Tunmer (1986). According to this model there are two basic components: word recognition and linguistic comprehension, poor readers may differ across these components. Based on this model, there would appear to be at least three groups of students with reading impairments found in the middle and upper primary grades (Catts, Hogan, & Fey, 2003; Leach et al., 2003; Nation & Norbury, 2005). For example, Leach et al. (2003) conducted a study that showed that 35% of the poor readers had word-level processing problems; 32% had weak comprehension difficulties with good lower level skills; and 32% had both kinds of difficulties. These research findings were confirmed by the Catts et al. (2003) study with similar findings among identified poor readers.

**Word level difficulties**

Nation and Norbury (2005) reported research findings indicating that 4–10% of students with ongoing reading difficulties had what they termed as developmental dyslexia. Such students exhibited poor decoding skills despite adequate intelligence and opportunity to learn. Evidence suggests that dyslexia has a neurobiological basis and is a complex condition and not just a product of nature (Reid Lyon, 2003). Vellutino et al. (2004) posited that many students are not born with dyslexia but have a poor reading predisposition requiring more intense instruction. Furthermore they believed that there is strong evidence to suggest that most early reading difficulties are mainly due to experiential and instructional deficits, rather than basic cognitive deficits associated with neuro-developmental factors.

It has been widely recognised that phonological processing deficits underlie problems associated with developmental dyslexia (Frith, 1985; Wolf & Bowers, 2000). Students with developmental dyslexia benefit from phonological cues but do not benefit from semantic cues because they often appear to understand words they have difficulty retrieving. Evidence suggests that they have adequate access to the semantic representation but have difficulty retrieving the phonological representation from long-term memory (Faust et al., 2003). A deficiency in retrieving the phonological representation in memory represents a demanding array of attentional, perceptual, conceptual, lexical, and articulatory processes on reading ability. For example, the combination of phonological processing difficulties with naming speed problems has become known as the *Double-Deficit Hypothesis*. This condition makes reading less automatic resulting in more severe reading deficits (Savage et al., 2005; Schatschneider, Carlson, Francis, Foorman, & Fletcher, 2002; Wolf & Bowers, 1999). Furthermore, phonological difficulties not only lead to problems in accuracy and fluency but may further lead to problems in vocabulary and problems in using background knowledge (Reid Lyon, 2003).

Traditionally word level approaches have been used to help these students. However, there is good evidence to suggest that letter-by-letter decoding is an immature mode of processing that is gradually phased out as the child acquires more expert ability in word recognition (LaBerg & Samuels, 1974). Sunseth and Bowers, (2002) posited that students initially learned to decode words based on phonological, letter-sound correspondence
processes. After sufficient exposure to particular words, a second stage occurred in
which students formed more direct orthographic connections in memory. Thus,
phonological awareness may be more important to earlier rather than later stages of
learning to read (Sunseth & Bowers, 2002; Vellutino et al., 2004). Furthermore, it has
also been suggested that a decoding approach focusing on word level processing can lead
to problems with vocabulary development, syntactic processing, inferential abilities and
activating prior knowledge (Brand-Gruel, Aarinoutse, & Van Den Bos, 1998).

Comprehension difficulties
Nation and Norbury (2005) conducted a study in the United Kingdom with 7–10 year-
old-students with ongoing reading difficulties and found that approximately 10% were
classified as showing specific comprehension impairment. Furthermore, 78% of the poor
comprehenders originally tested at ages 8–9 years still had significant comprehension
impairments when tested later at age 13–14 years. A further 13% continued to have
milder weaknesses with reading comprehension. It has been found that poor
comprehenders generally have accurate, fluent speech and strengths in phonological
processing while reading fluently (Nation et al., 2004). They usually focus more on word
accuracy rather than comprehension monitoring and generally have weak metacognition
skills (Cain & Oakhill, 1999; Nation et al., 2004). Poor comprehenders also show
weaknesses in aspects of producing both spoken narrative and written narrative. For
example, in their story retelling they produce less story content and less sophisticated
story structure (Nation & Norbury, 2005).

No clear “poor comprehender” profile has emerged but it would appear to be related
primarily to language skills with little to do with phonological decoding and word
recognition (Nation et al., 2004; Vellutino et al., 2004). It is generally held that reading
comprehension difficulties are directly affected by weaknesses in lexical, syntactic,
conceptual, inferential and organizational language processes. Despite decoding texts as
accurately as good comprehenders, students with poor comprehension are poor at
making inferences and integrating text information (Cain & Oakhill, 1999; Nation et al.,
2004). Consequently, poor comprehenders do not strive for coherence and they tend to
use less story content and use less sophisticated story structures (Cain & Oakhill, 1999).
As a result, poor comprehenders tend to read quite superficially, and they are less likely
to engage in constructive processes when reading. It would appear that poor
comprehenders are not deficient in general knowledge but they fail to use gap filling
inferences and are not sure when and how to apply their prior knowledge. Nation and
Norbury (2005) found that when poor comprehenders were given prompts it enabled
them to achieve near to the level of their good comprehending peers. Poor
comprehenders also benefited from training programs that focused on how to recognise
and use the implicit and explicit cues that signal that an inference is needed.

Combined word level and comprehension problems
There is a considerable body of evidence linking difficulties in reading comprehension
with deficiencies in oral language (Bishop & Snowling, 2004; Leach et al., 2003; Nation
et al., 2004; Scanlon, 2004). Students with speech language impairment will usually show
semantic weakness. They may be strong in phonological judgements but may be weak in
synonym judgements. They may also have lexical level weaknesses and perform poorly on tasks designed to assess morphosyntax (e.g., past tense inflexion, syntactic comprehension) and aspects of language use (e.g., understanding figurative language) (Nation & Norbury, 2005). It is clear that oral language difficulties in the early development place children at long-term risk for problems with reading (Nation & Norbury, 2005). Bishop and Adams (1990) reported that many preschool students who exhibited language impairments at age 5.5 years and had received language therapy had developed "normal" literacy skills by age 8.5 years. The language therapy was then discontinued. However, when these same students were seen again at age 15–16 years, they performed more poorly than their age-matched peers on measures of phonological processing and literacy (Nation & Norbury, 2005; Stothard et al., 1988). It can be concluded that, for these students, ongoing language instruction was needed to supplement reading instruction.

In most cases semantic and syntactic deficits do not appear to be a primary cause of reading comprehension difficulties in otherwise normal children. Their language difficulties are more likely to be a consequence of a long-standing reading disability (Vellutino et al., 2004). One reason for this is that poor comprehenders have substantially less reading and reading-related experience than normal students. They are more likely to read materials at lower grade levels and read less material overall. Consequently, the books they do read contain simpler vocabulary and syntactic constructions with simpler text structures than at their grade level. This leads to added oral language weakness due to lack of reading experience. As a consequence, they may experience slow growth of sight vocabulary affecting their decoding of more complex words (Bishop & Snowling, 2004; Nation & Norbury, 2005; Oakhill & Yuill, 1996; Snyder & Caccamise, 2005).

Related issues

There is now a strong consensus among researchers that the central difficulty in developmental dyslexia reflects a deficit within the language system. Specific impairments of language functions such as; verbal short-term memory, rapid naming, syllabic perception, semantic, and syntactic processing and sound blending were found to affect the processing of word sounds (Bishop & Snowling, 2004; Howes et al., 2003; Reid Lyon, 2003; Vellutino, 1979). Moreover, students with speech language impairments generally had non-verbal ability within the normal range but had problems with understanding written language and with linguistic coding deficits (Bishop & Snowling, 2004; Nation et al., 2004; Vellutino et al., 2004). Indications are that all three groups (including the combined group) are associated with weaknesses in oral language difficulties (Nation & Norbury, 2005).

Children with language difficulties tend to have fewer comprehension strategies that aid their memory for text. For example, they construct less integrated and less stable representations of text and are less likely to generate inferences than those considered to be good readers (Cain & Oakhill, 1999). They use less cognitive space for the processing of the meaning of texts and they are less fluent (Manset-Williamson & Nelson, 2005). They may also be less efficient at retrieving a name as well as semantic or phonological
information associated with that name (Daneman & Carpenter, 1983). Robust findings have been reported that have identified verbal working memory deficiencies as being strongly associated with below average reading performance (Cain, Oakhill, & Bryant, 2004; McNamara & Wong, 2003). Cain and Oakhill, (1999) claimed that many students with reading difficulties are unable to produce appropriate search strategies and may benefit from instructional programs designed to compensate for memory processing difficulties. Working memory-processing problems may not just be specific to reading because many students with reading difficulties also have problems retrieving everyday information (McNamura & Wong, 2003; Swanson, 1999).

It must be recognised that children with ongoing reading difficulties become disengaged from literacy. Disengagement as a reader involves a lack of motivation, less social interaction, and a lack of cognitive competence (Guthrie & Davis, 2003). According to Linnenbrink and Pintrich (2003) after year four there are three aspects of motivational engagement that need to be addressed: (a) personal interest, (b) utility value, and (c) value beliefs. The first is personal interest, which reflects the student's intrinsic interest in the content, materials or task. Secondly, utility value represents how useful the content or task is to the child. Finally, value beliefs are related to the overall personal goals that children hold. These three aspects are important because they influence their affective engagement during reading.

Collaboration among the students and with the teacher has been suggested as an important motivational aspect of engagement (Guthrie & Davis, 2003). A number of reading and motivational theorists have also suggested that students should be given opportunities to work with others in groups, in pairs or to work on their own (Guthrie & Davis 2003; NICHD, 2000). Palincar and Brown's (1987) reciprocal teaching is an example of an effective group reading intervention approach involving four metacognitive strategies: clarifying, summarising, questioning and predicting. When engaged in cooperative reading activities students can be encouraged to comment on their classmates' responses, add to their ideas and to question and enter into group discussions. It has been further suggested that student's own questions could be used to increase their engagement and develop fuller understandings of read texts (Block, 2004; Pressley, 2002).

The National Institute of Child Health and Human Development (NICHD, 2000) review of reading research identified a number of instructional strategies that foster children's cognitive competence as it relates to reading. Strategies emphasising active understanding and engagement with meaning as well as enhancing vocabulary knowledge were found to be beneficial. In particular there was good evidence for the efficacy of other strategies including question generation, question answering, comprehension monitoring, and the use of semantic organisation to summarise and represent story ideas. Manset-Williamson & Nelson (2005) maintained that older students had greater world knowledge and an increased potential to use metacognitive and cognitive strategies. Having such students extend their vocabulary and elaborate their mental comprehension models through questioning and summarising during a reading lesson has also become a highly advocated means of developing a reader's understanding (Paris, 2005; Pressley, 2000). The strategy of elaboration often requires strategic demonstrating,
modelling, and prompting on the part of the teacher because students typically do not offer extended responses without encouragement (Wood & Endres, 2005). Students can be further extended by being shown how to use mental imagery while they are reading. This strategy improves comprehension monitoring and enhances a student's ability to relate to prior experiences by imagining what is happening within the text (Cain, Oakhill, & Bryant, 2004; Duke & Pearson, 2003; Wood & Endres, 2005). Strategies such as these focus on the meaning-making aspect of reading comprehension and help children become active readers. Cognitive competence involves more than increasing a student's knowledge and skill; it involves self-awareness, self-motivation and knowing when and how to implement knowledge appropriately (Zimmerman, 2002).

**Conclusion**

De Lemos (2004) posited that it is necessary for a review of current approaches to the teaching of reading in Australia in order to move closer toward the implementation of teaching strategies that work. Understanding which aspect of reading a particular child finds difficult is necessary if appropriate and well-targeted interventions are to be put in place (Nation & Norbury, 2005). The danger is that programs that focus heavily and solely on the word level of reading may produce students who will be relatively fluent word readers without comprehending what they read (Manset-Williamson & Nelson, 2005). It has been reported that comprehension instruction has been less frequent and effective than it needs to be (Clark & Graves, 2004). In schools, generally, there is still little comprehension instruction but an overreliance on the use of post-reading questions (Pressley, 2002). Intervention programs need to look beyond word-level processing skills if they are to lead to substantial and continuing improvements in reading comprehension (Nation & Norbury, 2005; Paris, 2005).

Intervention programs do, however, need to be selected or modified on the basis of student's individual needs rather than the overall grade level functioning (Leach et al., 2003). However, there is general agreement that students with reading difficulties need systematic, direct instruction, particularly when coupled with explicit strategy instruction (Alfassi, 2004; Gersten et al., 1998; Manset-Williamson & Nelson, 2005; Swanson, 1999; Vaughn et al., 2000; Vellutino et al., 2004). Students with reading difficulties generally possess inefficient strategies that they use in an inflexible manner, are often unaware of the strategies good readers use automatically, and the strategies they do use are not spontaneous. The more explicit the comprehension strategy and self-regulatory instruction, the higher the likelihood that for students with reading difficulties, will make significant gains in reading comprehension (Manset-Williamson & Nelson, 2005). It has been shown that children who use metacognitive skills are more active and cognitively engaged (Linnenbrink & Pintrich, 2003). To engage struggling readers in the middle and upper primary grades teachers can use a number of strategies to promote cognitive competence, motivation and social interaction. They should be encouraged to construct rich knowledge goals and use real-world interactions to connect them with their own experiences. They should be provided with an abundance of interesting reading materials, provided with choice, and be able to share and discuss their reading experiences with others.
References
Stimulating the "Action" as Participants in Participatory Research


