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A Multiple Strategy Framework Supporting Vocabulary Development for Students with Reading Comprehension Deficits

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Poor comprehenders are generally students who have significant language-learning deficits. A particular problem for students with poor comprehension is that they have difficulty learning new vocabulary because they are inclined to read less, and are unable to apply new meanings to unfamiliar words. This leads to the situation where the gap widens between them and their more successful peers, resulting in more noticeable reading difficulties in later grades. They generally have good word decoding skills but have difficulty connecting meaning to unfamiliar words in context. This is often problematic because they have particular difficulties making inferences and forming a coherent mental model of what they have read. However, effective vocabulary instruction can be achieved by the incorporation of an intervention framework that balances the teaching of word-learning strategies with strategies fostering whole story integration. This article introduces a pedagogical construct based on a modified KWL framework using a combination of evidence-based visual and verbal instructional methods, in conjunction with the development of metacognitive and self-regulating strategies. The implication is that the cognitive load on working memory will be reduced and overall story comprehension will be improved when a well-constructed pedagogical framework is utilised to enhance the acquisition of new vocabulary during reading.

Keywords: comprehension, vocabulary, reading, lexical quality, meta-cognition, frameworks, self-questioning, feedback, self-monitoring

Students have traditionally been taught comprehension procedures, including the acquisition of new vocabulary, as stand-alone skills making it difficult for them to know when, where, and how to apply them during reading (Borkowski & Muthukrishna, 1992; Manset-Williamson & Nelson, 2005; Westwood, 2007). More recently it has been recognised that reading vocabulary instruction requires a combination of direct instruction with tasks that promote inferential reasoning, metacognition, and self-regulation (Lubliner & Smetana, 2005; Nesbit & Adesope, 2006; Rapp, van den Broek, McMaster, Kendeou, & Espin, 2007). Consequently, there

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has been a greater interest in using multiple strategy instructional frameworks to foster the use of more than one comprehension strategy simultaneously while reading (National Reading Panel, 2000; Pressley, 2002a; Snow, 2002). The aim of this article is to show how the development of a modified version of the KWL framework (Ogle, 1986) can be used to orchestrate the use of a variety of vocabulary acquisition strategies while at the same time building a mental model at the whole story level.

Language Learning Deficits

The Simple View of reading has been a widely accepted model that classifies reading difficulties into three subgroups on the basis of listening comprehension and word decoding accuracy (Gough & Tunmer, 1986). The dyslexic subgroup is characterised by phonological deficits and rapid word naming difficulties but with good listening comprehension skills. A second group has a combination of poor listening comprehension and decoding difficulties and is often referred to as a language learning disabled group. The third subgroup is composed of poor comprehenders who fail to adequately comprehend texts despite being skilled in phonemic awareness, phoneme segmentation, and automatic word reading. Less attention has been paid to the latter group in the research literature and this has led to recent calls for the design of intervention frameworks that incorporate evidence-based teaching practices to improve the skills of students with reading comprehension deficits (Bishop & Snowling, 2004; Catts, Adlof, & Weismer, 2006; Kamhi & Catts, 2002; Westby, 2005).

Most students experiencing deficits in reading comprehension generally have inadequate oral language proficiency due to limited lexical, syntactic, and semantic knowledge. This results in difficulties using contextual cues, forming inferences, extracting the underlying text propositions, and difficulty developing an integrated and coherent mental model of what they have read (Leach, Scarborough, & Rescorla, 2003; Perfetti, 2007; Norbury, & Bishop, 2002). Moreover, some poor comprehenders have more severe comprehension deficits and have often been classified as hyperlexic (Kamhi & Catts, 2004; Leekam, 2007). Students with hyperlexia, including some students with high functioning autism, Asperger syndrome, and pragmatic language impairment have a language disorder that is generally characterised by a precocious ability to read words far above what would be expected for the chronological age group with a significant difficulty in understanding and using social language (Aram, 1997; Botting, 2007; Kamhi & Catts, 2002; Norbury & Bishop, 2002; Richman, 1995).

Vocabulary

The acquisition of new vocabulary is particularly important for students with comprehension deficits because it enhances reading comprehension, academic development, and progress through school (Blachowicz, Fisher, Ogle, & Watts-Taffe, 2006; Ricketts, Nation, & Bishop, 2007). Even though poor comprehenders usually have skilled word decoding ability, they have considerable difficulty with the acquisition of new vocabulary and may develop more noticeable reading difficulties beyond Grade 3 (Neal, 2002; Snow, 2002). It is assumed that it may be the result of a difficulty in the processing of increasingly complex written language encountered in the middle and upper primary grades (Fielding-Barnsley, Hay, & Asherman, 2005; Nation & Norbury, 2005). For poor comprehenders, the exposure to a higher volume of reading does not necessarily facilitate the acquisition of new vocabulary. A probable explanation for this failure is that they generally do not focus on word meaning and have difficulty

incorporating general knowledge to fill in missing information necessary for learning new vocabulary (Cain & Oakhill, 1999; Leach, Scarborough, & Rescorla, 2003; Nation, Clarke, & Snowling, 2002). Their problems often go unnoticed in the earlier grades. For example, hyperlexics in particular can give the impression of having good reading comprehension because they have a precocious ability to decode words well beyond what may be expected at their grade level (Grigorenko et al., 2003).

Lexical Quality

Skilled reading is normally associated with efficient word identification and effective use of sublexical processes such as decoding, phonological segmentation and manipulation. It is presumed that as these processes become automatic limited cognitive resources are made more available, resulting in improved word level reading comprehension (LaBerg & Samuels, 1974). However, it has been argued that increasing decoding speed by itself does not always increase reading comprehension (Perfetti, 2007). Perfetti posited that depth of new word encoding, or lexical quality, was also an essential element for the enhancement of reading comprehension. The assertion is that word reading skill and text comprehension are directly related to how well word meanings are linked to existing knowledge in long-term memory (Perfetti, 2007).

Normally, the ability to make appropriate inferences is a crucial component in learning meaning, encoding and storing new words (Blachowicz, Fisher, & Ogle, 2006; Pearson & Johnson, 1978; Snow, 2002). Therefore, the lexical quality of new vocabulary will be directly affected by how efficiently students use inferential and contextual strategies to acquire meaning and to link with prior understandings (Baylis, Jarrold, Baddeley, & Leigh, 2005; Bowyer-Crane & Snowling, 2005; Snowling & Frith, 1986). Thus, word level comprehension not only requires a well-linked knowledge of phonological and orthographic word forms but also requires well-developed syntactic and semantic associations in memory. It is assumed that as skilled readers encounter more advanced texts they use this knowledge to link text information with their prior world knowledge to acquire new vocabulary (Cunningham, & Stanovich, 1997; Kamhi & Catts, 1999; Stanovich, 1986).

Explicit Instruction

Critical elements of a reading intervention program for poor comprehenders should involve regular and structured vocabulary instruction, opportunities to read and to experience frequent success, adequate feedback, practice, and frequent self-monitoring (Lubliner & Smetana, 2005; Pressely, 2002b; Snow, 2002). It may also involve the use of dictionaries, pre-teaching of new words, and morphological analysis by teaching the meanings associated with prefixes, suffixes and root words (Alfassi, 2004; Velluntino, Tunmer, Jaccard, & Chen, 2007; Woolley, 2007). What is certain is that the more explicit the vocabulary instruction, the higher the likelihood that students with reading comprehension difficulties will make significant gains (Manset-Williamson & Nelson, 2005). The danger is that students may become too reliant on direct instruction and scaffolding. Therefore, it is important that teacher support is gradually reduced as the students gain more confidence and control of their vocabulary learning (Duke & Pearson, 2002).

What is needed is for students to be shown how and when to use contextualised word-learning strategies in flexible ways in a variety of settings (Cartwright, 2006; Gersten, Fuchs, Williams, & Baker, 2001). For example, poor comprehenders typically lack

confidence in reading and it is important for teachers to assist them to set reading goals that are specific, realistic, and challenging. Moreover, poor comprehenders need to be explicitly taught how to use inferential skills when reading by explaining, modelling, providing scaffolded practice, and independent practice (Manset-Williamson & Nelson, 2005; Yuill & OakHill, 1991). Thus, student engagement will be enhanced when they begin to use their inference skills independently to generate word meanings using the available contextual cues, rather than expecting to be passive receptors of information. Such active student engagement has generally been found to be a feature of effective instruction and a characteristic of skilled reading (Saenz et al., 2005; Westwood, 2007). Hence, the progression from teacher direction to student self-regulation is essential for the development of reading engagement and deeper reading vocabulary development (Gambrell et al., 1987; Smith, Borkowski, & Whitman, 2008; Woolley, 2006; Zimmerman, 2002).

Practising to Increase Capacity

Normally, skilled readers assimilate new words within their existing knowledge structures as they read, and this in turn enables further vocabulary development and improved reading comprehension outcomes (Neal & Kelly, 2002; Swanborn & de Glopper, 2002; Worthy, Patterson, Salas, Prater, & Turner, 2002). Unlike skilled readers, who generally have a tendency to practice their skills by reading longer and more varied texts, students with reading comprehension difficulties tend to avoid reading and, accordingly, have less exposure to new words (Apthorp, 2006). Consequently, with less practice, they derive less meaning from unknown words and slip even further behind in their acquisition of new vocabulary and reading comprehension development (Stanovich, 1986). In response to these difficulties, reading interventions should be based on methods that enhance high exposure to new vocabulary and opportunities to use their newly acquired skills (NRP, 2000). The available evidence suggests that effective explicit instruction followed by adequate opportunities for practice can make a difference in developing automaticity and achievement for students, including those most at-risk (McDonald Connor, Morris, & Underwood, 2007; Pressley, 2002a). Normally, automatic-thinking processes free up limited working memory capacity (LaBerg & Samuels, 1974) and processing efficiency is improved when the cognitive load is decreased (Achibald & Gathercole, 2007; Daneman & Carpenter, 1980; Just & Carpenter, 1992). Thus, skilled readers use their cognitive resources more efficiently by processing much of the text automatically as they read. In so doing, they are more likely to use appropriate background knowledge to make sense of information implicit within the text.

Intervention Frameworks

Apthorp (2006) found positive outcomes with third-grade students using a multiple-strategy vocabulary intervention program that incorporated introducing new words through exposure to rich literature, explicit vocabulary instruction, oral instruction, personalisation, active engagement, multiple reading opportunities with ample practice, and with a focus on reading comprehension. Dole, Sloan, and Trathen (1995) also found similar results with high school students using vocabulary instruction by utilising a framework that included the declarative, procedural, and conditional dimensions of learning. Another study conducted by Lubliner and Smetana (2005) examined the effects of a multifaceted, metacognitive vocabulary intervention on the reading comprehension and vocabulary achievement of low-performing fifth-grade students. The intervention was designed to facilitate encoding of student-selected words,

clarifying strategies, and executive control of strategies that maximise word-learning proficiency. Strong gains in vocabulary, reading comprehension, and increased metacognitive skills were documented following the 12-week multiple strategy vocabulary intervention. By using suitable reading intervention frameworks such students can be taught to engage with texts by embedding a number of visual and verbal procedures that will reduce conscious attention demanding effort and economise on limited memory capacity.

A framework is a flexible theoretical construct that incorporates a range of multiple reading comprehension strategies. One of the important benefits in using multiple strategy frameworks is that poor comprehenders are more able to use evidence-based strategies routinely while they are reading (Szabo, 2006). The KWL (Know-Want-Learn) strategy (Ogle, 1986) is an example of a theory-based, multiple strategy framework that develops students' engagement and comprehension of text. The framework develops students' interest in new vocabulary by enabling them to brainstorm ideas and form inferences by setting learning goals and activating appropriate background knowledge. It also enables them to set goals by determining what they want to learn and to design their own questions to monitor understanding.

A number of researchers have more recently suggested that reading comprehension interventions can generally be improved by the addition of a 'before, during, and after' reading focus (Block, 2004; Duke & Pearson, 2002; Pressley, 2002a). The KWL framework does not specifically have a 'during' reading component. However, Szabo (2006) developed a variation of the KWL strategy (Table 1.) to incorporate all three components with a vocabulary focused procedure known as the KWHHL (Know — Want — Head words — Heart words — Learn) strategy. The strategy was originally modified for year eight students because it was apparent that the students were having difficulty with content vocabulary while processing text at a more global level. The first 'H' represented attention to head or hard words (new words) that the students encountered while reading while the second 'H' related to heart, or feeling words, that represented emotional content. An intervention framework such as this has the potential to engage word level processing while maintaining links at the global or discourse levels of text comprehension.

Multi-Modal Processes

Overall, the available research in this area suggests that having students make semantic connections among words, and verbalising or explaining those connections, supports learning the meanings of the targeted words (Blachowicz, Fisher, & Ogle, 2006). In the past the teaching of vocabulary and reading comprehension has relied mainly on verbal

TABLE 1
Comparison of the KWL and KWHHL Frameworks

	KWL	KWHHL
Before	K — What I know W — What I want to know	K — What I know W — What I want to know
During		H — What are the hard words? H — What are the heart words?
After	L — What I learned	L — What I learned

processes while visual imaginal elements have seldom been used in classrooms (Sadoski et al., 2000; Woolley & Hay, 2004). While some students with comprehension deficits experience difficulties in organising and recalling verbal information they may perform nonverbal tasks successfully and may benefit from graphic organisers and mental imagery instruction (Kim, Vaughn, Wanzek, & Wei, 2004; Nesbit & Adesope, 2006; NRP, 2000).

Gambrell, Kapinus, and Wilson (1987) argued that the use of visual material and the activation of mental imagery enhances comprehension at the global level of comprehension by focusing attention, making inferences, organising and remembering text information by integrating information across text. At the local level of text comprehension, activities such as drawing from text ideas leads to the construction of more elaborative meaning and enhances the lexical quality in memory (Perfetti, 2007). Visual strategies such as manipulating objects to emulate characters and their actions in a text enables the linking of words to objects (Glenberg et al., (2007). Constructing comic strip conversations using crude drawings and speech bubbles containing new words have also been found to be efficacious, particularly for students with ASD and hyperlexia (Gately, 2008). This strategy can be extended when students are instructed to make mental pictures in their heads as they read (Gambrell, Kapinus, & Wilson, 1987; Sadoski, Goetz, & Rodriguez, 2000; Woolley & Hay, 2004). Thus, vocabulary acquisition and overall comprehension of text is enhanced when students are instructed to attend to and discuss story illustrations (Duke & Pearson, 2002; Van Meter, Aleksic, Schwartz, Garner, 2006). Visual processes, such as these, can be flexibly incorporated into a variation of the KWL framework known as KWOL (see Table 2.).

Semantic Mapping and Summarisation

Semantic mapping for vocabulary learning is another visual approach that has been supported by research in a variety of classroom settings and can also be included within the KWL strategy framework (Table 2). A semantic map is a graphic organisation of ideas. It is different to a graphic organiser in that it focuses on concepts and their relationships rather than focusing on the overall structure of the text passage. It is a network in which the nodes represent concepts, the lines linking the nodes represent relationships, and the labels on the lines represent the nature of those relationships. Nesbit and Adesope (2006) posited that semantic maps are particularly beneficial because they add cognitive associations to those already linked with previously encountered concepts. Furthermore, they reasoned that it enables a more efficient visual search by strategically placing nodes on a map that may reduce the cognitive load in working memory and induce the deeper processing of meaning by creating more links to prior knowledge. McMaster, Kendeou, and Espin (2007) added that the more cognitive connections an item has, the more often and faster it will be recalled.

Fore, Scheiwe, Burke, and Boon (2007) demonstrated that direct instruction of story-mapping increased the number of comprehension questions answered correctly for students with poor comprehension. Furthermore, semantic mapping has been found to be effective when it incorporates other elements to increase its effectiveness. For example, Boulware-Gooden, Carreker, Thornhill, and Joshi (2007) demonstrated positive results when synonyms, antonyms, and other related words were included with the new vocabulary. They also found improved outcomes when distinctive shapes and colours were used for nodes to represent different types of concepts. The use of pictures, mental imagery, and elaborated written descriptions can also be combined and used effectively to enhance learning (Woolley, 2006).

TABLE 2

Comparison of the KWL, KWHHL, and KWOL Frameworks

	KWL	KWHHL	KWOL
Before	K W	KW	KW — (inclusion of visualisation strategies such as mental imagery and semantic mapping)
During		HH	O — Organisation and monitoring (discussing, clarifying, elaboration, inclusion of visualisation strategies such as mental imagery and discussion)
After	L	L	L — (inclusion of visualisation strategies such as mental imagery and semantic mapping)

Cooperative Learning

Comprehension procedures such as semantic mapping used in a cooperative group setting can become more engaging by enabling students to articulate their ideas and elaborate word meanings through discussion (NRP, 2000; van Boxtel, van der Linden, Roelofs, & Erkens, 2002). The role of focused dialogue in cooperative settings can also activate background knowledge and develop mental visual imagery to enhance inference making (Gambrell, Kapinus, & Wilson, 1987; Pressley, 2002b). Articulation of ideas in a group setting is an organising activity that enables students to question or criticise them. For example, a group member can point to inconsistent or incorrect meanings for new words. Negotiation processes can be elicited by asking and answering questions, resolving disagreements, and co-constructing meanings (Van Boxtel et al., 2002). The types of questions that are posed in the cooperative group setting can be used to model the sorts of questions that students should be asking themselves when they read independently.

Answering Questioning and Question Generation

When included in a reading comprehension intervention framework, self-questioning can promote active student engagement and self-regulation in learning. For example, it has been shown that students can be more cognitively engaged when they are taught to use metacognitive skills such as asking themselves appropriate questions and monitoring their own responses for understanding (Guthrie Wigfield, Barbosa, Perencevich et al., 2004; Lubliner & Smetana, 2005; Nagy & Scott, 2000). The use of metacognitive strategies such as these can help students think about their understanding before, during, and after they read (Boulware-Gooden, Carreker, Thornhill, & Joshi, 2007). One way to foster this type of learning engagement is to: (a) encourage students to compose and answer their own questions, (b) clarify their word understandings, and (c) develop deeper word meaning through more elaborative discussion (Palincsar & Brown, 1984). It has been demonstrated that focused questions can activate students' background knowledge by generating mental images, illustrations, analogies, metaphors, and summary sentences (Block, 2004; Duke & Pearson, 2002; Pressley, 2002a).

Self-Questioning

Taboada and Guthrie (2006) found that student questioning accounted for a significant amount of variance in students' reading comprehension, after accounting for the contribution of prior knowledge. Low- and high-level questions were differentially associated with low and high levels of conceptual knowledge gained from text, showing

a clear alignment between questioning levels and reading comprehension outcomes. Van Boxtel et al. (2002) observed that when questions were generated other students within the group seemed to be more eager to search for answers. In attempting to answer the questions, the students created new relationships by giving examples, using analogies, reformulating, or by referring to school or everyday life experiences. For example, Van Boxtel et al. maintained that the more talk about physics concepts and the more elaborative that talk, the higher were the learning outcomes of the students observed.

The generation of questions is a self-regulating strategy that improves reading comprehension as a result of active text processing. When asking questions, students use organisational thinking skills requiring deeper interaction with text. For example, while questioning, students ponder relationships among aspects of words in context. They hypothesise, focus on details and main ideas, use attention selectively on different text sections and possibly anticipate conclusions about information in the text. Questions may contribute to improve reading comprehension outcomes by initiating deeper cognitive processing (Taboada & Guthrie, 2006). When sixth graders learned to differentiate between literal and inferential questions in relation to an expository passage, they were better at answering and asking questions than students who engaged only in question practice or who did not ask any questions (Taboada & Guthrie, 2006). However, to have a greater impact on reading comprehension, students need to learn to ask questions that go beyond the literal level of word definitions by requiring the integration of information between the text and the reader's prior knowledge.

Feedback

Feedback through dialogue in cooperative settings provides specific word level information by filling in gaps between what is understood and what is to be known (Hattie & Timperly, 2008; Shute, 2008). Providing feedback is an implicit teaching strategy that helps poor comprehenders develop the ability to self-monitor reading progress. They are not always aware of the knowledge base they bring to the reading situation and may need appropriate progress feedback to help focus their attention (Pearson & Johnson, 1978). Specific and targeted progress feedback can encourage students to take ownership of the strategies they use and to help them set new reading goals. To be effective, such feedback should be nonevaluative, supportive, timely, and very specific (Shute, 2008). In particular, feedback should enhance student self-direction by focusing on the learning process rather than on the product of the learning task (Coleman & Bornholt, 2003; Hareli & Weiner, 2002). What is certain is that learners are more likely to self-monitor by seeking and receiving feedback when they share commitment to attaining a common learning goal (Hattie & Timperly, 2008).

There is extensive research that confirms the effectiveness of teaching students to self-monitor meaning and to implement self-regulation (Table 3.) strategies as a means of improving reading comprehension (Lubliner & Smetana, 2005; Zimmerman, 2002). In particular, the active monitoring of word understanding is an essential metacognitive step in the construction of meaning (Guthrie et al. 2004; Linnenbrink & Pintrich, 2003; Lubliner & Smetana, 2005). Teaching poor comprehenders to monitor their understanding of new words is likely to strengthen both vocabulary development and reading comprehension. For example, Blachowicz, Fisher, and Ogle (2006) maintained that readers should be provided with multiple sources of information and be encouraged to be actively involved in the generation of word meanings rather than merely being passive receivers of information.

TABLE 3
KWOL Framework With Self-Regulation Processes
and Examples of Comprehension Methods

	KWOL	Self-regulation (Zimmerman, 2002)	Comprehension methods (NRP, 2000)
Before	KW	Goal setting	Question cue card — What do I know? Semantic mapping, cooperative discussion to share ideas and talk about new words. Question cue card — What do I need to know? (Include unfamiliar words)
During	O	Organisation, monitoring and selecting cues	Comprehension monitoring (cue cards with question stems to monitor reading comprehension and clarify understanding of new words) Cue cards — reading decoding strategies
After	L	Self-recordings and reflection on meaning	Summarisation (including story mapping and graphic post organisers) Reflection on learning (question cue card — What have I learned, including new vocabulary?)

Self-recording is a way for poor comprehenders to monitor their progress because it provides both student and teacher with concrete feedback for vocabulary acquisition (Saenez, Fuchs, & Fuchs, 2005). For example, concept mapping can be used strategically as a self-monitoring activity within the KWL framework to record meanings and monitor progress by comparing earlier concept maps with later versions. Any useful framework should provide a cohesive structure as well as flexibility to enable students to set reading goals and monitor their own progress by making informed choices and to reflect on, and evaluate the sufficiency of their learning (Table 3) (Zimmerman, 2002).

Repeated Exposure

In addition to providing multiple-strategy frameworks with multiple sources of information, repeated exposure to new vocabulary is an important component of word learning (Baker, Gersten, Dimino, & Griffiths, 2004; Blachowicz, Fisher, & Ogle, 2006). Moreover, Fisher and Danielsen (1998) found that when students were allowed to choose their own words for vocabulary instruction, they were able to develop more effective and longer-lasting word learning. The rate and quality of sustained use of their intervention framework at the school demonstrated positive outcomes even well after the intervention program finished. However, they cautioned that some programs might falter because students get bored when their teachers use the same vocabulary instructional approaches day after day. Furthermore, they posited that teachers needed to have a professional commitment to an innovative intervention because it requires sustained energy to implement and maintain the program procedures while developing students' conceptual knowledge and skills.

Summary

Students with reading comprehension deficits usually have limited vocabularies and generally find reading difficult, avoid reading, and learn fewer words in context. Vocabulary development for students with reading comprehension difficulties is affected by the quality of their word representations and how efficiently they are

processed in working memory. The teaching of vocabulary should include direct instruction, providing various types of information about strategies for learning new vocabulary. It should also take place in an environment that encourages dialogue and develops attention and interest for learning new words. Some effective reading comprehension intervention programs have been found to enhance vocabulary development by using multiple strategy frameworks that utilise processes before, during, and after reading. This article introduced a modified KWL multiple strategy framework demonstrating how evidenced-based teaching practices can be orchestrated to enhance students' use of metacognitive and self-regulating strategies. For vocabulary and comprehension improvement to effectively take place, students with reading comprehension difficulties need to develop effective metacognitive strategies to monitor and regulate their own meaning-making activity. Appropriate progress feedback can further encourage students to more effectively engage with learning and develop self-monitoring and self-regulating strategies particularly if it focuses on the learning process rather than the product.

When teachers intentionally scaffold learning by using visual organisational strategies, asking strategic questions, and elaborating meanings through focused dialogue in cooperative settings, vocabulary acquisition and reading comprehension outcomes will be improved. Within a suitable intervention framework, cooperative strategies can be effectively incorporated to elicit negotiation by asking and answering questions, resolving disagreements, and co-constructing meanings. The implication of this is that reading interventions for poor comprehenders need to consider the inclusion of multiple strategy frameworks that employ a range of memory organising strategies such as visualisation, elaborative dialogue and the use of cooperative concept mapping to facilitate students' vocabulary development while at the same time developing comprehension processing at the whole text level.

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