Factors that Contribute to Successful Reading Comprehension

A compelling model of reading acquisition is that encapsulated in the ‘Simple View of Reading’ (Gough and Tunmer, 1986). This essentially describes the two central components of successful reading as being the capacity to read the words on the page accurately, and (simultaneously) the capacity to understand or comprehend the message or content being read.

In order to read accurately, students need to have grasped the alphabetic principle - that is, the knowledge that there is a predictable and reversible relationship between the sounds (phonemes) in the words we say, and the letters (graphemes) we use to write those words down. It is now widely accepted that the most effective approach to the teaching of accurate reading and spelling includes a multi-sensory, structured, synthetic phonics program, taught systematically, cumulatively and with ample opportunity for practise and application (NICHD, 2000; Flesch, 2006; Hattie, 2009). As children's reading develops they also need to be taught — and make use of — orthographic, morphological and semantic knowledge in order to read and spell accurately (Flaut, 2006). Unfortunately, the understanding of how best to teach reading comprehension has not been as extensively researched, or as well-documented, as the strategies recommended for the development of reading accuracy, despite its obvious importance.

Comprehension is fundamentally the goal of both reading and listening. It enables readers and listeners to, amongst other things: acquire new knowledge and skills; experience and be aware of alternate 'environments'; communicate successfully; and, achieve academically.

The long-term goal of the reading teacher is to ensure that students learn to understand written language as well as they understand spoken language. It has been recognised that when children first start learning to read there is very little correlation between their language comprehension and their reading comprehension. However, once they are able to read accurately and fluently, there is a very strong correlation. The language of any text, whether it is spoken or written, is rarely explicit. In order to comprehend at a deeper level, readers need to make inferences that bridge elements of the text and support the coherence necessary for comprehension to occur.

What is reading comprehension?

In order to comprehend written material students need to:

- Accurately read and understand the words being used (phonics knowledge and vocabulary);
- Successfully link the units of meaning within each sentence (syntax);
- Activate and integrate prior knowledge in order to make successful inferences (retrieve connected information from long term memory);
- Successfully integrate the meaning of successive sentences (local coherence / working memory); and,
- Establish how the whole text fits together (global coherence).

Inference Making

The process of inference making allows readers to 'fill the gaps' in both spoken and written language and ensures that the text is understood at a deeper level. It allows readers to make sense of otherwise unconnected actions in a text (causal inferences) or may be used to elaborate or make predictions (elaborative inferences). Once students are reading fluently they tend to approximate the adult model of inference making (Perfetti, Landi & Oakhill, 2003). This is, in part, due to the fact that inference generation is considered to require high levels of cognitive processing. If a significant amount of processing is being dedicated to reading accuracy or semantic retrieval, then it is less likely to be utilised for inference making. It is also the case that less skilled readers are more likely to make inferences that support coherence than inferences that elaborate. Essentially, to comprehend,
Once students have developed accurate and fluent reading, sentence comprehension strategies can be taught. Students learn to identify — what has happened, who was involved, when the event occurred, where the event took place, and why the event happened. This strategy serves as a foundation for later comprehension of longer text. Before they start utilizing this approach, students need the ability to repeat five to seven word sentences, beginning with who and what sentences.

As part of their extensive and systematic review of early literacy teaching, the NRIP (National Reading Panel) identified seven categories of effective evidence-based comprehension instruction:

- Comprehension monitoring;
- Cooperative learning;
- Graphic and semantic organisers;
- Question answering (teachers model active questioning);
- Question generation (students self-question to clarify understanding);
- Story structure; and,
- Summarisation.

The research suggests that explicitly teaching a combination of strategies to bolster comprehension is the most successful approach.

1. COMPREHENSION MONITORING

Comprehension monitoring occurs when the reader is actively aware of whether he/she is understanding or remembering the text being processed. The two main components of comprehension monitoring are: ongoing monitoring and evaluating; and, implementing strategies when the text fails to "make sense". It has been suggested that poor readers often read-on automatically without an awareness that something they have read "doesn't make sense". A strategy to avoid this can be started as early as pre-primary/primary year one, with students being taught how to ask themselves questions as they read (active reading) and monitor their understanding. For example, "Do I understand what I am reading?" "How does this connect to what I already know?" "What do I think might happen next?"

When students pick up an inconsistency in the text they are reading (often the result of misreading a word or sentence) they need to know there are steps they can take to address this. Essentially they should: identify and isolate the difficulty; use 'think aloud' strategies to highlight where and when the difficulty began; restate what was read; look back through the text; and/or, look forward in the text.

2. COLLABORATIVE LEARNING

Collaborative learning occurs when students work together in pairs or in small groups on structured activities — often with specific roles. For example in the Collaborative Strategic Reading program From Oink to Click (Vaughn & Klingner, 1999) students are provided with cue sheets and asked to work collaboratively through three phases of an activity.

a) Prior to reading: they brainstorm in order to identify prior knowledge and predict what they will learn.

b) During reading: the students identify and discuss the parts of text that are difficult to understand, including any unfamiliar vocabulary. They also work at identifying the main focus (or 'gist') of the text by selecting the most important person, place or thing and then identifying the most important ideas about that person, place or thing.

c) After reading: students review their findings. They identify some questions to check their understanding, and then determine whether they can answer those questions.
3. GRAPHIC AND SEMANTIC ORGANISERS

The value of graphic and semantic organisers is that they provide a visual representation of knowledge. This can be particularly valuable for students with poor working memory or with learning disabilities. Three important uses have been identified:

a) They help students focus on text structure while reading;

b) They provide tools to examine and visually represent textual relationships; and,

c) They assist in the writing of well-structured summaries.

Graphic organisers have been used for multiple purposes, including: generating lists of character traits; improving vocabulary; identifying relationships in expository texts; activating background knowledge; setting a purpose for reading; and, helping students to see the text structure. An important finding by the NRP in relation to the use of semantic and graphic organisers was the recognition of their capacity to activate prior knowledge.

One strategy, KW-L, was identified as being particularly successful:

K – Identifying what I already Know.

W – Deciding what I Want to learn (setting a purpose for reading including determining what new information will be gathered).

L – Recalling what I Learned from my reading.

4. QUESTION ANSWERING

Students need to analyse the types of questions being asked, and consider both the text and their prior knowledge, in order to successfully formulate answers to questions being asked (including self-generated questions). In the Questions-Answers Relationships (QAR) program (Marzola, 2011), students are taught two major categories of question-answer relationships: ‘in the book’ or ‘in my head’. Readers need to refer to the text to answer ‘in the book’ questions but need to explore further, drawing on prior knowledge, to answer ‘in my head’ questions. Essentially through strategies like the QAR program, students learn to identify different types of questions and also develop different strategies to answer the questions being asked.

This allows students to discriminate between questions that can be answered by referring back to the text (literal and inferential) and those that require skills in higher-level thinking (critical analysis, interpretation, generalisation and extension of ideas from text). Students need practice in answering a range of question types and to understand the difference between them.

5. QUESTION GENERATING

Teaching students strategies to improve their capacity to generate questions as they read is important and those teachers who model appropriate questioning before, during and after reading have been found to have a positive impact on their students’ comprehension of text.

In the NRP’s review of the research into successful reading comprehension instruction, it was suggested that there was “the strongest scientific evidence available … for the effectiveness of asking readers to generate questions during reading” (NICHD, 2000, p. 45). Used in isolation, it was found to have the strongest impact of the top seven strategies identified. Self-questioning has been found to distinguish good readers from poor readers in that good readers ask themselves questions before, during and after reading, whereas poor readers often fail to self-question.

6. STORY STRUCTURE

Many of the texts introduced in the primary school setting are stories. The structure of which tend to follow a predictable format involving characters, setting, problem, goal, action, and outcome (or resolution of the problem). When students are taught about story structure, they become more capable of retelling stories within a logical framework. They also show improvements in asking and answering who, what, when, where, why, and how questions.

For those students who struggle to recall the classic story structure, including those with working memory problems, additional strategies can be introduced (Marzola, 2005). For example:

a) Five finger recall – each finger is used as a memory prompt for one of the structural elements – characters, setting, problem, plot, resolution.

b) STORE – a mnemonic used to assist students in the retelling of stories – Setting (who, what, when, where); Trouble (what is the trouble / problem to be solved?); Order of action (what happened to solve the problem?); Resolution (what was the outcome (resolution) for each action?); and, End (what happened in the end?).

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Current Research

An ongoing project undertaken by the University of York (UK) entitled the Reading for Meaning Project: Evaluating interventions designed to support reading comprehension has set out to examine three approaches thought to improve reading comprehension in poorly performing children:

- An intervention program incorporating oral language activities (the Oral Language OL) program);
- An intervention program incorporating written language activities (the Text Comprehension TC) Program);
- An intervention program incorporating both oral and written language activities (the Combined COM Program).

The effectiveness of the interventions has been evaluated using the WIAT II (Wechsler Individual Achievement Test) and compared to students in classes where the teaching approach had remained unchanged. The results indicated that all intervention groups improved significantly in comparison to the control groups and that these gains were maintained over time. However, the Oral Language intervention group achieved the greatest gains beyond the intervention period.

The Oral Language program focused on the development of the students' understanding and production of oral language and used a listening version of the Reciprocal Teaching approach to target vocabulary, figurative language and spoken narrative.

For more information about this research and to access teaching resources once they become available visit:
www.york.ac.uk/res/crl/readme.html

Final Comments

As indicated at the beginning of this article, comprehension is the goal of both reading and listening. The fact that many students struggle to develop adequate reading comprehension skills is of major concern, as is the lack of information available to teachers on evidence-based intervention. It is hoped that this snapshot of some of the teaching strategies known to have an impact on student outcomes proves to be of value to teachers looking for effective comprehension strategies.

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REFERENCES:

Clarke, P., Snowling, M., Truelove, E., and Hulme, C. Ameliorating Children's Reading Comprehension Difficulties: A Randomized Controlled Trial, Psychological Science, (2010), 21, pp 1106-1115.


