Seven steps to improving reading comprehension

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We often test comprehension, but how do we teach it?

In the so-called reading wars, all sides agree on one thing: comprehension is the goal of reading. However, whole language, meaning-first proponents work from the assumption that reading is language, which is a fatally misconceived notion. Reading is a written representation of language, which is something quite different from language itself. So teachers of the code-first approach show students how the written code represents the sounds of the spoken language. We do this not so that they will "bark at print", as Michael Rosen gleefully incants at every opportunity; we do it so that they will be able to know what the words are, and when these words are in their vocabulary, they will understand. If the words are not in their vocabulary, it is a teaching opportunity.

However, comprehension can neither be expected to develop on its own, nor can it be taught in isolation from the many aspects of language and human culture that impinge upon our reading experience. It is not developed merely by administering comprehension tests, although repeated testing does tend to have a slight positive effect on learning. Factors contributing to developing good comprehension include vocabulary, background knowledge, morphology, syntax, accuracy of decoding, and reasoning skills including logic and inference.

1. Background knowledge

Daniel Willingham has written this excellent article on teaching comprehension strategies: http://www.aft.org/sites/default/files/periodicals/CogSci.pdf. In essence, he argues that teaching specific comprehension strategies is useful and creates gains. However, these gains are achieved in a relatively short time and thereafter, extended training in comprehension strategies does not lead to additional gains. Instead, Willingham argues that schools will invest time more profitably if they also build students' background knowledge.

Such knowledge is essential for drawing logical conclusions and picking up inferences. If a student doesn't know that Mercury is a small, very hot planet closest to our sun, she is not going to pick up on the implied meanings in a slogan such as "Hotter than Mercury, cooler than Venus". Further, if she doesn't know that Venus is the seductive goddess of love, she won't pick up on the play of words between science and mythology. She might even form a misconception, gaining the mistaken impression that Venus is a cool planet while Mercury is hot. In fact, the temperature on the surface of Venus is nearly 500 degrees Celsius!

2. Vocabulary

Vocabulary is of course closely related to domain-specific knowledge. Vocabulary has been an important topic in the research literature for decades. For example, Bill Nagy's 1988 paper, 'Teaching Vocabulary to Improve Reading Comprehension', begins by pointing out that not all attempts to increase vocabulary result in improved understanding. What is required first is that

the approaches taken produce a greater depth of word knowledge – that is, more awareness of the shades of meaning attached to words. Secondly, Nagy asserts that it is important to read more, and to read more challenging material, in order to encounter and infer the meanings of new words.

Isabel Beck and her colleagues have produced the well-known book *Bringing Words to Life* (2013) which draws similar conclusions to Nagy, and offers a variety of practical strategies for teachers to develop students' vocabularies. Amongst other useful considerations, the authors suggest that students need to encounter a word 10 times or more in a variety of contexts for them to assimilate it into their own working vocabulary. They encourage explanations of words rather than definitions. They also recommend systematic methods for identifying which words should be prioritised for study in lessons, because they are 'higher leverage' words – that is, they enable students to access deeper meanings and more challenging texts.

3. Language structure: morphology and etymology

Another area of knowledge that enables students to increase their understanding is morphology. Morphology is the study of how parts of words carry meanings. Obvious examples are prefixes which mean 'the opposite of': un-, im-, anti-, etc. Suffixes too carry meaning: words ending in -ation will almost always be abstract nouns; -ment will also transform a word into a noun (can you think of an exception?). Once students readily recognise these familiar components, it becomes easier to identify the root word. For example, 'incantation' has

a prefix in-, a suffix -action, and root 'cant'. It is easier now to focus on the root and demonstrate how this is derived from the same word that gives us 'chant' in English and 'chanteur' (a singer in French). So to incant means to engage in a song or chant, probably repetitively. This example demonstrates how knowledge of morphology is closely linked to etymology, the study or word origins. Etymology is able to bring words to life if it is joined with clear explanations, because the history of a word is also a part of the history of our culture. Both etymology and morphology also assist students with spelling, enabling them to take a more structured and analytical view of the words they are working with.

4. Main idea

A key goal of comprehension instruction is to enable students to identify 'the main idea', and more specifically to identify super-ordinate and sub-ordinate ideas. In other words, which one is the bigger idea, or which idea is more important in this text? Bob Dixon and colleagues developed a very useful strategy for this based on the idea of identifying the referents to an earlier stated topic idea or idea in a passage. This resulted in a Direct Instruction programme for reading comprehension called Reading Success which develops this and related principles over a series of lessons. Perhaps the simplest way to employ this strategy is to check that students are correctly linking pronouns to the original nouns. It is surprising how often students are unclear on who 'he' or 'it' might have been in a passage. Clearing up these confusions is usually straightforward and enables students to

access what may have previously been baffling text.

5. Inference

There are three kinds of inferences that we may draw from a text: logical implications, probable inferences and possible inferences. Logical implications are those that must be true, even though they are not stated, because of other statements. If I invited five friends to go camping, and only two didn't come, how many people went camping? (Four.) If a character arrived home at seven o'clock, they must have been elsewhere before that. And so on.

Probable inferences are likely to be drawn from a text and from our personal knowledge. If the passage says "I ate four sandwiches when I got home from school", a probable inference is that I was hungry. There are of course other possible inferences, e.g. I had not had lunch, or that I am greedy.

Fiction writers frequently invite readers to speculate in order to generate possible inferences. This keeps the reader's imagination actively engaged, and adds to suspense and narrative power. For example, in "The tall man stood at the door for some time before he finally knocked," the writer doesn't tell us why the man paused, or even who he is, but we know that this detail must be important, so we begin to speculate: he is hesitant; he has doubts about his course of action; he is waiting for something or someone; he is listening. It is not important that the speculations should be correct at this stage – these will be confirmed or otherwise as the story proceeds. What is important is that we have considered the possibilities. Students need to be conscious that such opportunities are deliberately contrived

by authors to help draw their attention to important ideas.

Practice with inferences can happen both incidentally, as the teacher works through a text with students, or more systematically, for example as starter activities.

6. Reasoning

Precise use of logic and reasoning is also an essential part of developing reading comprehension. This is particularly important as we seek to develop independent critical thought. There are very few programmes which set out to teach students important logical patterns, like analogies, or logical fallacies (Corrective Reading Comprehension is one that does). Once students get used to spotting errors, they may even find the exercise fun. For example, at a simple level, we can ask students to explain what is wrong with this syllogism:

> *All Dalmatians have spots.*
> *My cat has spots.*
> *Therefore my cat is a Dalmatian.*

Common logical fallacies include ad hominem, straw man, argument from authority, false cause and middle ground. (See www.yourlogicalfallacyis.com for an extensive list with explanations.) Teaching students to identify logical fallacies arms them with powerful tools and also (hopefully) helps them to avoid such mistakes themselves.

7. Memory

Finally, there is no substitute for memory. Just as knowledge is important, so

is the recall of that knowledge when it is needed. If we want students to understand key ideas, we need to ensure that they have been taught the necessary knowledge well enough that it is retained in long-term memory. Such teaching requires a systematic approach to planning, and guided practice with feedback. Independent practice without feedback is likely to result in errors being learned more thoroughly.

In conclusion, reading comprehension can be taught through developing students' reasoning, inference and deduction skills, and is also built by strengthening background knowledge, vocabulary, language skills and memory training. Some specific strategy training is desirable; but explicit teaching of knowledge is also vital for strong comprehension.

As for the meaning-first approach to reading: guessing from pictures is not reading comprehension, it's guessing. Perhaps that is why we are still getting so many students arriving at secondary school with poor comprehension skills.

Recommended

For further reading on teaching reading comprehension, we recommend the excellent practice brief below by Alison Boardman and colleagues. Along with specific strategies such as activating prior knowledge, using graphic organisers, and summarising, the authors also show how word study, fluency and vocabulary are important to developing comprehension.

References

Boardman, A. G., Roberts, G., Vaughn, S., Wexler, J., Murray, C. S., & Kosanovich, M. (2008). *Effective instruction for adolescent struggling readers: A practice brief.* Austin: Center on Instruction.

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