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Comprehension

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A writer only begins a book. A reader finishes it. (attributed to Samuel Johnson)

What is comprehension?

Comprehension is not just finding answers in a piece of text—it is an active process whereby the reader creates a version of the text in his or her mind.

Comprehension is heavily dependent on the reader's oral language abilities; understanding of word meanings and the syntactic and semantic relationships among them; and the ability to engage with the text at a deep level (Snow et al, 1998).

Why comprehension matters

Comprehension is the ultimate goal of reading and the means by which much cognitive growth, learning and sheer enjoyment occurs. Comprehension enhances both the quality of our learning and the quality of our lives. While always the goal, mature and critical reading will come about only if all the contributing elements are securely in place. Many children readily acquire these skills and go on to reap the many benefits that high levels of literacy afford. Other children, however, will not share these benefits unless they receive our very best teaching, which entails a deep understanding of all the processes involved, as well as how best to teach them.

Extracting meaning from text requires an array of skills that go far beyond the ability to decode or word recognition. Each of the first five components of the 'Big Six' of reading contributes to comprehension, the ultimate goal of reading, and the extent to which each is developed to the point

of automaticity will affect the level of understanding that can be accessed by the reader. It is this depth of understanding that differentiates the beginning, or poor reader, from the mature and critical reader.

Characteristics of good readers

Four important behaviours characterise good readers (Paris & Myers, 1981; Torgesen, 1982; Pressley, 1998; Torgesen, 2000; McMaster et al, 2014). These four behaviours are expanded in this section of the paper, before a discussion of some strategies that can develop comprehension at a range of levels.

1 | Good readers are purposeful

Good readers understand the purpose of their reading and so are able to adjust their reading style accordingly. They know why they are reading and how they should read to accomplish their purpose. If they need a telephone number, they know how to use alphabetic and scanning skills to locate the name and number quickly; if they want to know if a book is suitable for their needs, they can skim content sections, chapter headings and a paragraph or two to make their decision; if they need to upload new software or make a complicated recipe, they can follow directions carefully and sequentially; if they need to synthesise information from a range of sources, they can read critically, extract key information, and interpret what it means on the basis of their existing knowledge. The use of **targeted strategies** in different circumstances and for different purposes identifies the skilled reader who has a range of strategies at their disposal.

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2 | Good readers understand the purpose of the text

Good readers are not only purposeful themselves, but they also understand that writers are purposeful. A writer may wish to provide very simple information (eg, a recipe for ANZAC biscuits) or extremely complex information (eg, a scientific report). A writer may wish to entertain, drawing the reader into a stirring or poignant narrative. Writers can also have other purposes and agendas, endeavouring to advertise or persuade readers to accept a certain point of view. Sometimes text is presented as indisputable information, but is in fact drawn from highly selective sources. Having some understanding of a writer's purpose alerts good readers to the use of particular **literary devices** that are designed to affect their response and possibly their future behaviour.

3 | Good readers monitor their comprehension

All teachers have heard students who can read quickly and fluently, but are unable to give any indication of understanding what they read: in some cases, they cannot answer simple content questions. Good readers, because they are reading for a purpose, monitor their comprehension to ensure that there are no gaps in their understanding. They relate the information to personal experience or existing knowledge; they evaluate the information as they read to determine whether it confirms or contradicts what they know; they ask questions as they read and search for the answers in the text; they create mental images as they read; and they differentiate between key information and supporting detail. They are able to do all these things because of their constant **interaction with the text**.

4 | Good readers adjust their reading strategies

As they monitor their comprehension, good readers are able to adjust their reading strategies when required. They may slow their reading rate if sentences are long and complex, or reread a section if they begin to lose meaning. If they encounter a word they don't know, they have a repertoire of strategies to call on: they can draw inferences from surrounding text to help construct the word meaning; they can scan the new word to see what parts of it they do know; they can chunk words into syllables; they can use their letter-sound knowledge in combination with their vocabulary knowledge to ascertain the meaning of unknown words. They can also stop and take notes to help retain complex information; complete a retrieval chart or semantic grid; gradually build a concept map as they read; or use a thesaurus or dictionary.

> **The four characteristics of good readers are typical of readers who are actively engaged in the process of reading.**

This is the pivotal difference between how good readers and less able readers respond to the act of reading. One is an **active process**, the other passive: one leads to a **shared understanding** between writer and reader, the other to an 'information gap' between the two. Active engagement with the text leads to greater content knowledge, a broader vocabulary, and intellectual growth: with these come improved prospects for academic success, greater vocational options, and a raft of other positive life outcomes. All of these are harder to achieve for readers who do not have the capacity to engage with the text.

Levels of text comprehension

Comprehension occurs at different levels, depending not only on the skill of the reader, but also on the nature of the text. Comprehension can be broadly divided into three levels:

1 | Independent level

At this level, the reader is able to read all or almost all of the text fluently, finding no more than about one word in twenty difficult. This equates to a reading success rate of at least 95%. When students are reading for themselves, the text should be at their independent level, as it is only when they are able to read fluently that they have any chance of engaging with the material to draw meaning from it. They will still need to use strategies to decipher the occasional unknown word, but should be able to do this independently and without loss of meaning if this occurs infrequently.

2 | Instructional level

The reader finds this text challenging but manageable and can read it with support. A maximum of one word in ten is difficult or unknown. This equates to a reading success rate of 90%. When support is readily available, reading at this more difficult level allows the reader access to more sophisticated vocabulary, sentence structures and content knowledge, but the availability of support with the reading is an important caveat.

3 | Frustration level

At this level, the reader has difficulty with more than one word in ten and thus finds the text frustrating to read. This equates to a reading success rate of less than 90%. Students should never be asked to read at this level, but this is precisely what happens as they progress through school if they do not master the preliminary skills associated with reading. The constant interruptions as they struggle with word recognition results in inevitable frustration. We have all met students who no longer have the energy or motivation to continue the struggle.

Students can still access higher-level texts if they are read to them.

Children beyond the early primary years still enjoy listening to stories. The great advantage of this is that you can read at a level that is well beyond the students' reading capacity, target their interest level, and expose them to more sophisticated vocabulary and language structures. Teachers can also model their own thinking processes as meaning is drawn from the text.

Helping students master both **learning to read** and **reading to learn** is a primary responsibility of teachers. The first of these two processes is the primary responsibility of teachers in the junior grades, because it is the key that unlocks many other doors to learning. However, if those students who have missed out are to have any chance of accessing the opportunities open only to the literate, teachers in senior primary and secondary school must also assume that responsibility.

Guidelines and strategies for developing comprehension

Before discussing some specific strategies that teachers can use to support students' comprehension, this section will revisit some key messages about the teaching of comprehension.

Comprehension needs to be taught, not just tested

Advanced ways of constructing meaning from text do not just follow automatically once the decoding aspect of reading has been mastered. In an effort to help children understand text, some teachers do nothing more than ask questions about the content. Too often, this is only a test of what the child has understood, rather than a tool to develop deeper understanding. Cloze exercises, that were originally designed to test children's comprehension, are often used in the mistaken belief that they are teaching comprehension. Teachers need to explain and demonstrate a range of **comprehension strategies**, guide students as they are practised, and evaluate their use.

A variety of reading materials should be used, including short texts

Much of the material that we ask children to read, even those who struggle, is comparatively long, despite the fact that much of the reading we do is quite short. Newspaper headlines, notes, lists, labels, emails, reports, newsletters, instructions and so on make up much of our daily reading. Text types of all lengths, but particularly short ones for struggling readers, can be used for classroom activity. Poems, short pieces of prose, descriptive paragraphs, magazine articles, sports stories, current events and editorials—even materials like cartoons and jokes can be used to build comprehension in addition to chapter books and information texts.

Active listening should be taught

Teaching comprehension is really **teaching thinking** and there are ways of encouraging this even before children can access print (Teale & Yokota, 2000).

Oral comprehension precedes reading comprehension and can be developed from the earliest years, but it requires active listening.

Some students can hear but do not actively listen. This requires selective and sustained attention, cognitive processing in working memory and information storage, and retrieval mechanisms. Teachers can help students develop these skills by giving them tasks such as listening for specific or key information, teaching them strategies to remember this information (for example, rehearsal, mnemonics, linking it to known information), and asking them on later occasions to recall it. Helping children to 'make movies in their mind' as they listen to stories will also facilitate later reading comprehension. Barrier games require active listening and can be adapted in many different ways to suit all age groups (Cameron & Dempsey, 2016). These strategies can be used in different forms from preschool to the secondary years and will ultimately support language facility and reading comprehension.

Readers need multiple strategies

Mature and critical reading requires the coordinated and flexible use of multiple strategies.

Students need to use a repertoire of active comprehension strategies, such as prediction, linking text content with their own experiences and knowledge, asking and answering questions, image construction, and summarising (Cameron, 2009).

Specific strategies for developing comprehension

The following section discusses ways in which teachers can maximise comprehension of narrative or content material through activities undertaken before reading, during reading, or after reading. Some strategies can be effective across all stages of reading. For example, a graphic organiser, such as a retrieval chart, can be started before reading, partially completed during the reading process, and completed after reading. Students need to have a **range of strategies** and know when and how to use them (Shanahan et al, 2010; Palincsar & Schutz, 2011; Foorman et al, 2016). Strategies, such as questioning, are pervasive and useful in all contexts.

Before reading

Prepare students before reading

- If reading an information text, explore what the students already know about the topic.
- Discuss students' experiences related to the text.
- To build background knowledge and motivation for reading, have students make predictions about the text, based on the title and illustrations.
- Supply background information for unfamiliar non-fiction texts. This is preferable to dealing with misconceptions (Wexler et al, 2015).
- Discuss any other texts about the same topic. For example, an information text about trains may have been read in preparation for a narrative about a train. This gives children an opportunity to use their new knowledge and new vocabulary.
- Introduce new vocabulary, especially those words that will be crucial to understanding the text (Burns et al, 1999).
- Introduce any comprehension organisers that may be used during or after reading.

During reading

Facilitate engagement during read aloud

- Read the story or meaningful sections of the text without too many interruptions so students can grasp the sequence of events and become attuned to the more literate style of written language. Questions before and after reading are more effective and less intrusive than questions during reading (Beals et al, 1994).
- Emphasise new words that were introduced before reading.
- Stop just a few times for children's reactions, comments, questions and predictions.
- Point out relevant details in the illustrations.
- Acknowledge children's attempts to read along, add sound effects, etc.

Facilitate student comprehension during independent reading

Successful readers are metacognitive: they monitor their reading in relation to their goals. Hence it is important to teach children how to monitor their understanding (Afflerbach et al, 2013; Foorman et al, 2016).

- Teach children to use 'fix-up' strategies when they begin to lose meaning, ie:
  - re-read the sentence carefully
  - think about what might make sense
  - re-read the sentence before and after
  - look for a prefix or suffix that might help identify an unknown word
  - look for smaller known words inside an unknown word.

- **Help students make connections** (Harvey & Goudvis, 2007).

- As students read, they can use sticky notelets, stick-on flags or sticky arrows on the text to monitor their understanding of the material. Stickies should be big enough for brief comments, questions marks, exclamation marks and anything that indicates some interaction with the text. Stickies can:
  - indicate a connection between what they are reading and a personal experience, another text, or the world at large
  - identify information or a story development that surprised them
  - point out something they want to ask about
  - highlight new information.

After reading

Promote comprehension after reading

- Teach students to identify key words in a passage (the words that explain who, what, where, when, how or why). When they are able to do that consistently, teach them note-taking and other summarisation strategies.
- Ask questions that help children determine the sequence of events and look for cause-effect relationships.
- Help children link the content to their own experiences.

- With narratives, provide different ways in which the students can retell the story (some suggestions drawn from Dickinson et al, 1992):
  - draw (or use a flannel board for younger children) to retell story
  - retell using puppets
  - retell to a parent
  - retell onto a tape
  - younger students can read to a peer, or a soft toy
  - act out using props.
- Ask children how they might change the ending.
- Ask students to 'change the form', a strategy that requires the student to integrate information and change it into another form, for example:
  - text from a diary could become a time-line
  - a recipe could become a flow chart
  - a description of a character could become a portrait
  - an event in a narrative could become a newspaper report
  - descriptive text could become a labelled picture.
- Teach students to use resources, such as a glossary, dictionary and thesaurus.
- Teach students to use graphic organisers. Information presented in graphic or pictorial form has been demonstrated in many studies to improve children's ability to recall and comprehend information within a text (Fowler & Davis, 1985; Sinatra et al, 1985; Idol, 1987; Antonacci & Callaghan, 2012; Sousa, 2014). Graphic organisers include:
  - skeleton diagrams
  - pyramids
  - semantic maps
  - retrieval charts
  - story maps
  - time lines
  - flow charts
  - plot profiles.

Examples of each of these and others are readily available on the Internet. The important point to remember is that the use of graphic organisers must be explicitly taught: students must see them modelled in a step-by-step demonstration; be given opportunities to practise them under guidance; and be given feedback on their use (Barton-Arwood & Little, 2013).

There is evidence that teaching students just one or two strategies has better results than asking them to use many different kinds (Deshler, 2005; Seifert & Espin, 2012).

Use questioning as a comprehension strategy

Questioning, an accessible and low resource strategy, is central in the teaching-learning process and has traditionally played a large role in classrooms and teaching contexts.

Teachers ask an average of one question every minute (Glasson, 2005). As with many such strategies, however, its effectiveness depends almost completely on the capacity of the teacher to use it for maximum impact. Teachers need to have a clear purpose for their questions (Wiliam, 2015).

Different questions demand different levels of understanding and different cognitive processes. There is a place for lower order questions: when teaching very basic factual material, asking straightforward questions can give students the opportunity to display the knowledge that they will build on later in their study of that topic. These questions can also alert the teacher to any students who do not understand essential material (Wiliam, 2014).

Other questions can promote higher order thinking. Questions that begin with how or why and include modal verbs, like *would*, *might*, *should* and *could*, tend to promote more imaginative and complex thinking, as do questions that include words like *imagine*, *decide*, *think*, *believe* and *hope*.

Understanding the sorts of questions and how to phrase them to develop higher cognitive processing are important aspects of a teacher's role.

There are several ways in which researchers have levelled types of questions.

Blank's levels of questioning

Speech and language therapist Marion Blank and colleagues (1978) devised a four level system of questioning for oral language development aimed at children in the very early years (Avery, 2010). Her questioning hierarchy begins with questions that relate to the immediate environment for children aged from just two years ('What is that?' What is _____ doing?') while the highest level questions involve problem solving, making predictions, finding solutions and testing explanations ('What will happen if…?' 'What should we do now?'). The highest level of questions is designed for children from the age of five, but these questions are appropriate for many children throughout the school grades.

What will happen if…? What should we do now?

Bloom's Taxonomy

Bloom's Taxonomy of Educational Objectives (1956) has been traditionally used to differentiate levels of questioning. Originally having six levels, Bloom's Taxonomy has been revised (Krathwohl, 2002; Glasson, 2005). One version of the revised levels in ascending order of sophistication is:

1 Remember

2 Comprehend

3 Apply

4 Evaluate

5 Create.

At each level, use verbs to begin sample questions and related learning activities when planning learning and differentiating the curriculum for learners at different levels (Churches, 2008; Costello, 2016).

3H (Here, Hidden, in my Head) (Graham & Wong, 1993)

This strategy moves students through stages from literal to deductive questions. 'Here' questions are literal, the answers to which are apparent in the text, for example: 'What was Lockie Leonard's girlfriend's name?' A 'Hidden' question combines information given in different parts of the text to come to the correct answer: 'How did Lockie's life change when he became Vicki's boyfriend?' Questions that require students to use prior knowledge to decide, predict, or deduce are 'Head' questions: 'Do you think Lockie changed his mind about what the important things in life are? Why do you think that?'

This strategy relies on the teacher being able to devise questions at the different levels and use them to extend students' thinking. The teacher should demonstrate the process of using each strategy, using 'think aloud' strategies to model how each question may be approached.

QAR

The question-answer relationship (QAR) framework includes four types of questions that help students to ask and answer questions about their reading (Raphael et al, 2006). 'Right there' helps students create or find answers to literal questions, often using the same words as in the text. 'Think and search' means students need to search across the text to create questions or find answers. With 'author and you' questions, student are invited to make connections between parts of the text and their own experience. 'On my own' encourages students to use their background knowledge to answer a question. QAR challenges students to think metacognitively and can be used across the curriculum and year levels.

Reciprocal teaching

Reciprocal teaching, sometimes called reciprocal reading, is a small group instructional method where the teacher and students engage in dialogue as they think critically about a text. The teacher models predicting, clarifying, generating and summarising strategies until the students can confidently use these strategies themselves (Palincsar & Brown, 1984; Spörer et al, 2009; Oczkus, 2010).

Guidelines for classroom questioning

Based on findings from the research on classroom questioning (Cotton, 1988; Wilen, 1991; Chuska, 1995; Gast, 2016), the following guidelines are suggested:

• Phrase questions clearly.

• When teaching students basic factual material, use lower level questions to check for understanding and keep pace brisk.

• Question younger students and those with learning difficulties mainly after material has been read and studied.

• With older and higher ability students, ask questions both before and after material is read and studied.

• Structure questions for younger students and those with learning difficulties so that most will elicit correct responses.

• Ask a majority of higher cognitive questions when instructing older and higher ability students.

• Keep wait-time to about three seconds when conducting discussions involving a majority of lower level questions.

• Increase wait-time when asking higher-level questions.

• Increase wait-time for students with learning difficulties.

• **Acknowledge correct answers but ensure praise is credible and directly connected to the students' responses.**

'The more that you read, the more things you will know. The more that you learn, the more places you'll go.' (Seuss, 1978)

Further information

Associate Professor Deslea Konza has also prepared a series of clips on each of the 'Big Six' components of reading for the Australian Primary Principals Association:

- An introduction to the teaching of reading
- Oral language
- Phonological awareness
- Phonics
- Vocabulary
- Fluency
- Comprehension.

Clips available at https://www.youtube.com/playlist?list=PL0YAmB9RzlMy20KlMcWUfFoZBgLd3MppA

Deslea Konza (2014) 'Teaching Reading: Why the "Fab Five" should be the "Big Six"', *Australian Journal of Teacher Education*, 39(12), accessed at http://ro.ecu.edu.au/ajte/vol39/iss12/10/

Anne Bayetto, Lecturer, School of Education, Flinders University has also published *The BIG 6 of Reading articles* for the Australian Primary Principals Association, accessed at http://www.appa.asn.au/publications/principals-as-literacy-leaders/. Comprehension article.

> **The 'Big Six' reading practices for teachers can be accessed at http://bit.ly/BestAdviceSeries.**
> 1.0   The 'Big Six' components of reading
> 1.1   Oral language
> 1.2   Phonological awareness
> 1.3   Phonics
> 1.4   Vocabulary
> 1.5   Fluency
> 1.6   Comprehension.

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This paper is part of the DECD Leading Learning Improvement *Best advice* series, which aims to provide leaders with the research and resource tools to lead learning improvement across learning areas within their site.

Produced by the Department for Education and Child Development

1.6 | SEPTEMBER 2016