**Comprehension: Categories and Influential Factors**

There are four major categories or levels of comprehension that readers need to achieve. They generally operate together so that students can totally understand the text under scrutiny

***Levels of Comprehension***

Literal or text-explicit comprehension: Often described as “reading on the lines,” this level requires the reader to process information that is explicitly stated in the text, to understand what the author specifically reported. For example, the reader may be called on to recall or locate precisely stated main ideas, details, directions, or sequences of events. Literal comprehension requires a lower level of thinking skills than the other three levels because the reader must only recall from memory what the book said. Still it is the foundation for content-area courses and remains the most frequently tested comprehension category. It consumes the bulk of instructional time in the classroom and is the level that struggling readers and ELLs strive to attain.

Interpretive or text-implicit comprehension: Described frequently as “reading between the lines,” this level demands that the reader process ideas based on what was read but not explicitly stated in the text. It involves understanding what the author meant, and the reader must call on his or her intuition, personal experiences, and imagination as the foundation for making inferences.

Children may be asked to predict outcomes, find main ideas, determine word meanings from context, draw conclusions, make generalizations, or infer cause-and-effect relationships. Behaviors commonly associated with critical thinking are involved in text-implicit comprehension, which is said to separate the active reader from the passive reader.

Furthermore, the overall pattern of interpretive processes activated during reading may affect the amount of text actually remembered (van den Brock, Rhoden, Fletcher, & Thurlow, 1996). That is the reason that teachers should pose thought-provoking questions to stimulate classroom discussion and thereby promote interpretive comprehension.

Critical or applied comprehension: Sometimes stated as “reading beyond the lines,” this level requires readers to integrate their own thinking with the facts from the text. Consequently, they evaluate and apply information and ideas from the printed page to their own experiences and judgment. It concerns skills such as the abilities to distinguish fact from opinion and fantasy from reality and to detect propaganda techniques, as discussed in Chapter 5.

Creative comprehension: This most advanced level calls for readers to develop original ideas based on the pages read. They must use divergent thinking skills as they ponder new or alternative solutions to problems or crises presented by the writer. They can write new endings to familiar folktales.

**Factors That Influence Comprehension**

Several factors are known to influence the comprehension of all readers, but to varying degrees depending upon the individuals and situations involved.

The first of these factors is purpose, which focuses the readers’ attention and helps them understand the text. While teachers routinely help students focus in the classroom, self-directed purpose is the better route to promote the feeling of competency that leads students to independent reading both in and out of school. In the classroom, children can make individual predictions about their reading (e.g., Do tsunamis occur in only one part of the world?), and those predictions then become purposes under the careful direction of their teacher. Outside of school, students may wish to assemble a toy for a younger sibling, and thus reading the directions for that task also has a clear purpose. In both instances, comprehension is stronger when the purpose is specific.

The second is being an active reader because active readers, according to Blachowitz and Ogle (2001), think as they read. They use their prior knowledge (which stems from previous experiences) and their vocabulary as well as reading strategies to help them comprehend what they are reading presently.

The third factor that affects comprehension is the type of text being used. Children who have had experience with story texts may encounter difficulty with expository or informational materials. Therefore, they should be introduced to these materials early and review them often as they usually contain concepts, vocabulary, and format that are markedly different from those found in storybooks. Teachers must keep in mind that the less familiarity students have with expository texts, the harder it is for them to comprehend such books.

The fourth factor affecting comprehension is the quality of literacy instruction. The Center for the English Language Arts at the State University of New York, Albany (1998) has identified effective literacy instructors as those who engage the students productively and keep them on task about 90% of the time and use and review/reteach explicit skills instruction in vocabulary, word recognition, writing, and spelling. They schedule daily reading and writing for at least 45 minutes in each skill. They emphasize literature by reading aloud, maintaining a classroom library, and discussing books and author studies; they integrate the curriculum by making direct connections between reading/writing and the content areas. These instructors manage all aspects of classroom learning, including planning, scheduling, and student behavior, and they maintain an environment characterized by fair rules, high expectations, and a learning atmosphere. They offer supportive instructional context by monitoring student accomplishments and establishing realistic but challenging expectations. Finally, they promote self-monitored learning by teaching students how to organize their work habits and use their time productively.

The fifth factor influencing comprehension is interest. When children are curious about a subject, sometimes to the point of absorption, they will read to seek information and discover answers to satisfy that curiosity.

The final factor is independent practice preceded by adequate instruction. Life-long readers evolve from students who are allowed to choose their own books, read them independently in class daily, and have the opportunity to discuss and share them with classmates.

**Comprehension Strategies**

Concluding that comprehension can be taught, a report of the National Reading Panel (NRP, 2000) listed several strategies that have proven through research to be highly effective in teaching students to become active readers who understand what they are reading.

• Self-monitoring: This strategy assists students in determining when they understand what they have read and when they do not, as well as what strategies they can use to help them understand. It is considered a form of metacognition (or thinking about thinking) in which children can ask themselves these questions: “Is what I’m reading making sense?” and

“What can I do to be certain that I know what I am reading?” One effective means that teachers can use to present self-monitoring to students is a demonstration of “think-alouds,” following specific strategies outlined by Frey and Fisher (2007): (a) choose a short piece of text running from one to four paragraphs, (b) let the text tell you what to do after you have read it several times, (c) keep the think-alouds authentic by using a conversational tone,

(d) think like an expert in the subject area under discussion to show students that your understanding of content is affected by prior knowledge, (e) tell students what strategies you are using to help you comprehend the material (e.g., highlighting important phrases or terms), and (f) resist the urge to “over-think” or else the meaning of the passage will be lost.

• Cooperative learning: When students work together to discuss comprehension strategies such as “think-alouds,” they begin to take more control over their own learning.

• Story structure: Once students understand the elements of a story—plot, characterization, setting, theme, style, and point of view—they are better able to comprehend the story and recall it. One means that teachers can use to increase students’ understanding of story structure is to introduce them to a plot relations chart that has four headings: “Somebody” (character),

“Wanted” (goal), “But” (problem), and “So” (solution) (Schmidt & Buckley, 1991).

• Summarizing: This strategy assists the students in identifying critical facts from the text or story. Summarizing demands that readers decide what it is important, how to condense it, and how to rephrase the information. Children must comprehend that summarizing involves the ability to identify and connect main ideas, eliminate unnecessary information, and recall what they have read. An experienced teacher knows that asking students to summarize what they have read is a useful, significant, but difficult assignment, whether verbally or in writing, so he or she may choose to model the strategy (Armbruster, Lehr, & Osborn, 2003). Summarizing is explored further under the Reading in the Content Areas section of this chapter.

• Graphic organizers: Visuals that help students organize concepts and ideas, graphic organizers aid in the development of knowledge of text structure. They also aid in the summarization of text, as well as the visual representation of information (Meddey & Jefferies, 2000/2001). Bromley and Irwin-Devine (1999) have identified 50 graphic organizers, including flow, tree, and Venn diagrams; concept and compare/contrast maps; and matrices. Three steps are involved in teaching the preparation of graphic organizers: First, the teacher chooses a particular graphic organizer that matches the text under scrutiny and models its outline for the students. Second, student groups complete the modeled example. Third, students individually complete the graphic organizer with teacher assistance, if needed. Hoyt, Mooney, and Parkes (2003) warn, however, that a graphic organizer that does not match the text will actually hinder students’ comprehension so teachers must be cautious about their selection.

• Activating prior knowledge: This strategy helps readers draw on previous experiences to better understand the new material they are reading. Teachers can assist students in recalling what they already know about the topic, author, or text structure. They can also take the class on a picture walk through a storybook and have readers draw predictions about the plot and characters.

• Question generating and question answering: This critical strategy is discussed fully in the next section.

Implementing Strategies for Instruction

It is recommended that only one of the research-based strategies listed above (from the National Reading Panel, 2000) be taught at a time and that children then practice that strategy in a variety of texts before being introduced to another (Barone, Hardman, & Taylor, 2005).

Directed comprehension instruction includes explaining the strategies involved, providing practice in using them, assessing (and if necessary) reteaching them, and finally demonstrating how they can be applied. Such instruction takes place before reading, during reading, and after reading. Before the children begin their reading lesson, the teacher can first promote comprehension by making certain the boys and girls are reading materials of an appropriate level of difficulty, with slower readers often needing to spend more time at a particular plateau than one basal series can accommodate and with advanced students doing most of their reading in content texts and other materials because they can read through their basals so quickly. Then the teacher can enhance comprehension by making sure the children have appropriate background concepts by using the introductory activities in the series to activate or build on prior knowledge, whether the topic is river rafting or life in Borneo. Finally, the teacher can promote comprehension by making certain that girls and boys understand that the purpose of reading is to obtain meaning and that what they already know can help them attain that purpose. Children should be made aware of what the teacher is doing and understand why he or she is doing it so they can gradually be taught to accept responsibility for attaining comprehension.

During the reading lesson, the teacher can identify trouble spots such as vocabulary or figurative language and instruct students in how to address those problem areas. (The questions that accompany each guided reading lesson in most basal series may be helpful in this task.) However, the teacher’s role is not complete until each child assumes an equal share of the responsibility for comprehension. Students must be taught to monitor their reading and to identify problems and solve them. Skilled readers can use one or more of the following techniques when they come to a problem sentence: Ignore and read on, suspend judgment, form a tentative hypothesis, reread the current sentence, reread the previous context, or go to an expert source.

After the reading, the teacher should focus instruction on summarizing the entire text and on relating it to other information or to other books or stories. All students, and particularly ELLs and slower readers, need this kind of comprehension activity. Other activities include having children write their own stories or participate in discussion comparing the most recently completed story to other stories or contrasting characters found in various assigned selections. One activity that does not belong in this segment of the reading lesson is answering a series of detailed, literal questions. Students must not get the impression that reading is just an exercise in factual recall.

**Strategies Used by Good Readers**

Whether before, during, or after reading, good readers use some strategies in one or more of the stages in the reading process. Not every strategy will be used in every text nor will the order of application be identical in each instance. Consequently, skilled readers choose individually those that work most effectively for them for each text they read. According to Barone and colleagues (2005), before reading good readers set a purpose for reading and activate prior knowledge, making connections between real-life experiences and textual content. They predict what the text might be about and then decide which strategies would be useful while reading the text. Finally, they develop mental images and use graphic organizers.

During reading, good readers monitor their own comprehension as they continually make and revise their predictions. They identify the main idea and answer and generate questions. Having determined which strategies would be appropriate for reading this text, they are also able, however, to incorporate remedial strategies when the text does not make sense. Finally, they are able to make inferences, develop mental images, and summarize.

After reading, good readers discuss the material, answering and generating questions. They share information after deciding whether or not it is worth remembering. If it is important and should be learned, they use graphic organizers to help them organize the information and identify the main idea. Finally, they develop mental images and summarize the information.

**Questioning: A Critical Comprehension Strategy**

Among the strategies that the National Reading Panel (2000) concluded have proven to be effective in teaching children how to become active readers (who comprehend what they are reading) is one that is particularly critical: questioning. This strategy covers both question-generating and question-answering skills.

Because they believe that it helps them assess student learning, teachers traditionally use questioning more than any other strategy for developing comprehension. Furthermore, the majority of questions at the elementary school level are not only teacher-generated but also explicit and require only one correct answer, thereby qualifying as “lower-order questions.” As a result, numerous studies have concluded that students have little practice in answering implicit or “higher-order” questions and are virtually unprepared for answering those that require critical thinking.

Both lower-order and higher-order questions are included in a classification system commonly referred to as Bloom’s (1956) taxonomy (in the cognitive domain): Frey and Fisher (2007) consider this taxonomy to be the cornerstone in the description of questions used in the classroom. The six levels require increasingly more difficult questions, as follows (with examples):

Level One: Knowledge (requiring information)

Where did . . .

List the . . .

What was . . .

How many . . .

Name the . . .

Level Two: Comprehension (understanding meaning)

Give me an example of . . .

Describe what . . .

Honing questioning skills helps children become active readers, provided that the questions push them to analyze and evaluate information.

Tell me in your own words . . .

Make a map of . . .

What does it mean when . . .

Level Three: Application (using learning in new situations)

If you had been there, would you . . .

How would you solve the problem in your own life?

What would happen to you if . . .

Would you have done the same as . . .

On the Internet, find information about . . .

Level Four: Analysis (using the ability to see parts and relationships)

What kind of person is . . .

What is the main idea of the story?

What message was the author trying to tell us?

Which part of the story was the most exciting? Funny? Sad?

Which events could not have happened in real life?

Level Five: Synthesis (using parts of the information to create an original whole)

What would it be like to live . . .

Pretend you are . . .

Write (or tell) a different ending.

What would have happened if . . .

Design a . . .

Level Six: Evaluation (making judgments based on criteria)

Could this story really have happened? Why or why not?

Select the best . . . .Why it is the best?

Which person in the story would you like to meet? Why?

Was . . . good or bad? Why?

What do you think will happen to . . . . Why do you think so?

Levels One and Two (knowledge and comprehension) are sometimes referred to as literal or explicit questions because the answers to them are found verbatim in the text. They are also the easiest questions to write. Students who have experience with such lower-order questions do well on tests of basic skills because those tests reflect that type of questioning. Knowledge and comprehension questions comprise the bulk of those asked in the typical classroom.

If, however, students are consistently asked only literal or recall kinds of questions, they will focus their attention on remembering details and not on analyzing or evaluating the information and storing it for future use. Instead, they will remember the information only until the questions have been asked (and answered) and then they will promptly forget it. On the other hand, if students are asked to read between or beyond the lines, they will be forced to integrate new input with what they already know about the topic, and therefore, they will retain much of the information. Students will be able to focus attention on significant aspects of the text if they can relate the information from the text to the most appropriate set of background experiences or prior knowledge, develop a coherent framework for remembering or understanding the text material, and practice cognitive skills that they will ultimately be able to use alone (Pearson, 1990).

An effective means for accomplishing student-generated questioning is the question-answer relationship strategy (QAR; Raphael, 1986). It covers the classifications established by Pearson and Johnson (1978) of text-explicit (Right There), text-implicit (Think and Search), script- and text-implicit (Author and You), and, finally, script-implicit (On Your Own). Teachers can model the QAR framework and typically present it in one lesson.

QAR should not be confused with Bloom’s taxonomy of questions because it does not classify questions in isolation as the latter does. Instead, it considers the reader’s background knowledge as well as the text because comprehension is influenced by both (McIntosh & Draper, 1996).

Two final but crucial elements to questioning are wait time and the teacher’s response to the student’s answer. The first has been defined as the amount of time between the teacher’s asking a question about the passage read and allowing a student to respond. Providing sufficient wait time is particularly significant in the area of higher-order questioning because children must have adequate time in which to organize complete, original, and thoughtful answers. The amount of wait time affects both the quantity of the student response (i.e., the actual number of words used in the answer) and the quality of that response (i.e., the level of thinking demonstrated). Furthermore, if teachers respond too quickly after the student begins to answer, those answers are more often apt to be incomplete. Consequently, by increasing the duration of wait time, teachers elicit answers that will probably be clearer and more elaborate, and at the same time, their own replies to the student will be more appropriate.

In addition, teachers should be open to many possible responses to a particular question and not have a preconceived notion of one “correct” answer. They should give the student immediate feedback when he or she gives a correct answer to a comprehension question to reinforce learning.

Teachers’ responses to student answers fall into three categories: acceptance, clarification, or rejection—with rejection being defined as a teacher response that could damage the student’s self-image and his or her subsequent learning or participation in class discussion. Should the student response be only partially correct, teachers should recognize all its correct aspects while simultaneously directing the student toward the correct response. Even when the child gives an incorrect answer that is irrelevant or incongruent to the teachers’ question, it is important that teachers respond in a accepting manner and, at the same time, redirect the child’s thinking by clarification measures such as Let’s go back to the story to check that fact or Let me ask the question in a different way.

**Teaching Questioning Strategies**

Teachers need to pose questions and then show the students how these questions may be answered by modeling aloud the thinking process used to come up with the responses. Such modeling includes sharing with readers what kinds of clues are found in the selection itself as well as how to integrate previously known information (or prior knowledge). By sharing his or her own knowledge as a teacher and by drawing on the background and knowledge of students, the teacher can make the task of presenting comprehension skills much more manageable.

By beginning lessons with questions that focus attention on what students already know about the topic and by encouraging them to use that knowledge to make predictions, teachers are helping the children deal with the questions in a more familiar framework. It is not enough to assign students to read a story and then have students answer questions about it. Instead, each teacher should have children share their thinking processes by going back to the assigned story and inquiring, “How did you know that? Which words gave you the clues that led you to this answer?” Although students who give incorrect responses are often redirected through clarification measures, teachers generally overlook the value of questioning students who give correct responses as well. When such girls and boys respond to questions, they not only reinforce the thinking process of individuals but model that process for their classmates.

**Reading in the Content Areas**

Reading in the content areas demands the acquisition of study skills so that the learner can obtain, organize, and present information. Study skills enable children to find and interpret information from numerous sources and to synthesize it to achieve a resolution of a question or the solution of a problem. In other words, study skills are valuable learning tools, and many students do poorly in school because they have never learned to use them.

Reading in the content areas should include lessons in study methods, reading flexibility skills, locational skills, and organizational skills.

***Study Methods***

SQ3R is the classic and most widely used study technique (Anderson & Armbruster, 1984). It consists of five steps:

1. Survey: Children read the table of contents, the introductory and concluding paragraphs, and the headings and marginal notes; then they inspect any visual aids such as maps, graphs, or illustrations. The purpose is to obtain an overview of the author’s intent and the format of the section, article, or chapter. Sometimes unfamiliar vocabulary poses a problem for some students and should therefore be defined promptly. This step enhances prior knowledge.

2. Question: Children change each heading and subheading into a question before that section is read. The purpose is to focus reader attention, to offer a means for self-checking comprehension, and to provide a goal for reading. This step requires the most explanation from the teacher.

3. Read: Children read in order to answer the questions formulated in Step 2. The objective is to notice how the paragraphs are organized (to help readers recall the answers they uncover). Students should also be warned not to overlook any important information not included in the questions already developed and should be cautioned to make brief notes during the purposeful reading time.

4. Recite: Many consider this step to be the most critical of the five. Children give the answers to each of the questions formulated earlier and do so without looking back at the material. Recitation may be done subvocally or in some more permanent written form such as note taking or informal outlining. The primary purpose is to self-check how well the material has been understood and recalled. The check is really accomplished by the student’s expressing the author’s language in his or her own words. A secondary purpose is to help memorize the information.

5. Review. Children reread to correct or verify the answers given during the recitation just completed. The purpose is to recall the main points of the selection, article, or chapter and to understand the relationships among the various points. This step involves spending considerable time to go over the material promptly (both after reading and at varying intervals) to ascertain how well the material is still understood.

A second study method, especially appropriate for children in Grades 4 through 6, is the ***RESPONSE approach*** (Jacobson, 1989). While it asks students to generate questions, much like SQ3R, it adds the additional step of listing important points as well as new terms and concepts. It demands interaction between the student and the teacher as the student completes a form and the teacher “responds” either in class discussion or in writing. The areas to be completed are Important Points, Questions, and New Terms/Concepts/Vocabulary/Names—all with page numbers. By including page numbers, this study method is efficient for both teachers and students.

A third study method was developed expressly for use in mathematics, especially with word or story problems, and is titled ***SQRQCQ*** (Fay, 1965). It consists of six steps:

1. Survey: Children read through the problem quickly to obtain an idea of its general nature.

2. Question: Children must determine what is being asked in the problem.

3. Read: Children read the problem slowly, paying close attention to specific details.

4. Question: Children decide which mathematical operations must be carried out and, in some instances, in which order are these operations to be completed.

5. Compute: Children must perform the computations decided upon in Step 4.

6. Question: Children must examine the results of the computation performed in Step 5 and determine whether they have reached a correct and reasonable answer.

**Reading Flexibility Skills**

Reading flexibility has been defined as adjusting one’s rate of reading to one’s purpose for reading, to one’s prior knowledge, and to the nature of the reading matter (Harris & Sipay, 1990). It therefore becomes one aspect of monitoring one’s reading comprehension and is a concern during silent reading only. Children in the intermediate grades should be introduced to four skills: skimming, scanning, study reading, and surveying.

Skimming: Skimming is a quick type of superficial reading that is completed in an effort to get the overall gist of the material. Girls and boys generally skim at about twice the normal reading rate, selectively eliminating nearly one-half of the material because they are in a hurry and therefore willing to accept lowered comprehension. They may read only the topic sentence and then let their eyes drift down through the paragraph, picking up a date or name. Their intention is to get the main idea from each paragraph with only a few specific facts.

Instances when skimming is useful include sampling a few pages to determine whether the material is worth reading, looking through reading matter to judge whether it contains the kind of information the reader is researching, and previewing a text chapter before settling down to serious study in an effort to get a general idea of its scope. In this kind of skimming, the student must have a particular purpose in mind.

Scanning: One special type of skimming is called scanning and involves rapid reading to locate answers to very specific questions concerned with matters such as names, dates, or telephone numbers:

Two common occasions that call for scanning are using a dictionary and using an index or television schedule. Children quickly identify with such practical needs and sense the obvious importance of scanning.

Study reading: Study reading differs from scanning because it demands a deliberate pace that allows reflection and rereading. Readers must contrast text concepts with their own prior knowledge. The emphasis is not on simple recall but on comparing and evaluating information. Students preparing to write a thoughtful essay are not concerned with reading rate because the quality of their reflection is more important than the speed with which it can be completed.

Surveying: The purpose of surveying is to preview a large piece of text to get an overall sense of its contents. A long chapter or entire book should be surveyed before it is read. A survey might include an examination of the table of contents and the index, but not detailed reading. Chapter books of fiction as well as novels would be surveyed differently from nonfiction materials. Therefore, the rate for reading surveys depends upon the type of texts and the purpose for reading them.