

SCHEMA THEORY, READER/TEXT INTERACTION,
TEXT
ANALYSIS AND METACOGNITION: OVERVIEW AND
EDUCATIONAL IMPLICATIONS

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Durkin's (1978) study of reading instruction in elementary classrooms found that teachers spent less than one percent of instructional time teaching comprehension. In 1981, Durkin followed-up this study by examining the teachers' manuals of six basal reader series for evidence of specific comprehension instruction suggestions; she found that the manuals emphasized assessment and practice rather than explicit instruction. Furthermore, she found that "children receiving the instruction never do see the relationship between what is done with reading in school and what they should do when they read on their own" and noted the absence of "attempts to explain what it means to answer to question, and, second, what the possible strategies are for getting it answered." In a study of basal readers, Johnson and Byrd (1983) assessed five basal series for comprehension instruction that included the following four elements: goals, structure, causal relationship between strategy and comprehension improvement, and evaluation. They found no instruction which included all of these components.

Thus, it appears, for the most part, good readers are not taught how to be good readers by classroom teachers nor do they learn these skills from their basal readers. In addition, as teachers of developmental students, our experience has been that texts do not go beyond merely defining reading skills and providing practice. Too many times "remediating the skill" is synonymous with giving students additional skill practice, not teaching or re-teaching the skill. These instructional techniques did not work in elementary and high school and will not work in the post-secondary developmental class.

How, then, do good readers acquire the skills which make them good readers? Gambrell and Heathington (1981) assessed good and poor adult readers' awareness of task and strategy variables which influence reading. They found that, in general, adult poor readers are not as aware of strategy variables or their role in facilitating comprehension as better readers. It appears that good readers have internalized some system or process, which they learned intuitively, for comprehending text. This process, subconscious in the good reader, is one in which the reader has some concept about what should be understood from expository text. The good reader determines which information s/he needs to understand by using his/her background knowledge and information provided by the text. The good reader seems to know when reading purposes are met and adds what is learned to past learning. When reading expectations are not met, the good reader seems to have a system for coping with the discrepancies.

If good readers possess this process, then it must be possible to conceptualize the process. And if we can conceptualize the process, we can teach it. Collins and Smith (1980) agree that the cognitive approach to education assumes that if the

explicit processes which underlie reading comprehension can be specified in enough detail, we can find methods to teach this process to students. Since the developmental reader does not subconsciously internalize the process, we must explicitly teach a method of controlling the reading process.

Models of Reading

Metacognition is the conscious control of reading and is the framework which embodies text and reader variables. Kluwe conceptualized the relationships between these variables and the metacognitive framework, and Buschel (1982) further developed this relationship. These models of Kluwe and Buschel combine Flavell's (1979) variables of person, task, and strategy variables with Brown and Smiley's (1978) directive and evaluative variables of executive control. Because these models are complex and are written with a research perspective, they are not suitable for instructing developmental students.

We need to develop an instructional model of the reading process which is theoretically based and which developmental students can understand and learn is needed.

An Instructional Model of Reading

Our instructional model, like the models developed by Buchel, is based on a combination of metaknowledge and executive control factors and is composed of several factors which constantly interact with each other as reading takes place. The reader should always be able to know his/her location on the model and where s/he is going. This knowledge will enable the reader to be more informed and active about the process of reading as it takes place.

Two sources supply information to be processed. The first and most obvious source is the text itself. The text brings information to the reader. This information consists of words (vocabulary) and meaning (content) presented in an organized text structure. The second source of information is less obvious to the reader and is often not even considered as part of the reading process by the reader. This source is the reader. The reader contributes background knowledge and knowledge-related concepts to the text information. The reader is also responsible for knowing what s/he wants to get out of the text and how that information will be acquired.

The interaction between these two sources of information determines the quality of the reading process. The reader uses background knowledge along with a survey of what the text contains to make predictions about what s/he plans to derive from the text. This aspect of the process is indirectly related to the evaluation component of the process in that the reader must know what s/he wants to get out of the text in order to know if s/he was successful. The reader uses pre-set standards of evaluation to decide if s/he was successful in accomplishing reading goals. If the reader is successful, s/he adds the new information to old information and begins the process again. If the reader is not successful, s/he has preplanned strategies to resolve problem areas. These strategies are used to help the reader meet reading goals. The procedure is then repeated.

Text

Although understanding of written discourse takes place in the reader's mind, the readability of the text exists independent of the reader (Moe, 1979). In this instructional model of reading, the degrees of understanding within the text basically consist of three aspects: structure, context and vocabulary.

In the past readability formulas have dealt mostly with the number of syllables in words and the length of the sentences within a passage, both of which are surface features of text. This shallow examination of text omits, to a large extent, consideration of content and structure and thereby falls short of a thorough understanding of text needed to evaluate a developmental reader's difficulty in processing text.

Kintsch and Vipond (1979) have developed a more complete model of text which takes into account all three elements of text (structure, content and vocabulary) and which provides a method of determining readability which considers the text's concept load and the way the text conveys these concepts to the reader. They propose that readability might be better determined in terms of concepts drawn from Kintsch's model, such as how often a reader must search long term memory in order to make a connection between present and past input and the number of bridging inferences that must be made. The more inferences the text requires, the more difficult the text for the reader.

Using text analysis instructors can better understand their texts and thereby "prepare comprehension lessons that emphasize processes (both top-down and bottom-up) as well as products. Such lessons provide students with tools for comprehension which can be implied independently in later reading" (Richgels, 1984). Richgels lists four areas in which teachers may improve classroom instruction:

1. Meaning vocabulary and paraphrasing. Teachers can help readers to better comprehend by developing their repertoires of known concepts and their ability to paraphrase sentences. By doing so teachers increase students' potential for . . . understanding the smallest elements of the text, the words.

2. Main idea. Identifying the main idea . . . is usually approached in terms of identifying the topic of a selection, which in turn is picked out on the basis of which is the most frequently mentioned concept. Teachers should help students distill the gist of a selection in a manner that parallels Kintsch's chunking and consolidating cycles.

3. Inferring. Inferring is a natural and pervasive part of comprehension (Schallert, 1982). Kintsch shows where gaps in a text's coherence graph require that inferences be made. Otto, et. al. (1981) and Richgels and Hansen (1984) have described a procedure, glossing, for writing marginal notations which facilitate readers' understanding.

4. Prior knowledge. All teachers know that it is easier for their students to comprehend a passage when its subject is familiar to them. Good teachers provide background information before assigning reading on unfamiliar topics.

METACOMPREHENSION

Readers use metacognitive knowledge, control of text and reader variables to develop goals and establish criteria for comprehension success. Goals and evaluation standards, in turn, are used to select processing strategies for comprehension. If the criteria for comprehension success are met, new information is added to the schema of the reader; if the criteria are not met, resolution strategies are selected by the reader. Goal-setting, processing, monitoring, and resolving comprise the basis of metacomprehension (Davey and Porter, 1982).

In the instructional model of reading, comprehension processing strategies include identifying text structure, finding main ideas and supporting details, drawing conclusions, and perceiving relationships.

We can teach the structure of expository text through the use of signal words and relationship between content area and structure patterns. Knowledge of these structures aids the reader in setting appropriate goals for understanding. The reader can identify the type of information needed by examining the questioning words used to set purposes for reading.

Teaching readers to find main ideas and supporting details, to draw conclusions, and to perceive relationships can be accomplished through direct and explicit instruction of these skills. Since direct instruction assumes that teaching is more than placing students in a conducive atmosphere in the hope that they will invent the appropriate strategies for themselves (Roehler and Duffy, 1978), the instructor must be able to verbally demonstrate these skills, as well as explain the processes involved in their use.

These instructional strategies are based on the concepts of informed teaching and modeling. Informed teaching includes knowing what strategies are, how they operate, and when and where readers should use them. These strategies are often not used because they are not understood and because there are no descriptions of these strategies in teachers' manuals (Paris, 1984). The basis of modeling is the assumption that if instructors describe their own conceptions of a text (so that students can see cognitive processes responding to a specific passage), students will realize how and when to do apply these processes (Davey, 1983).

Modeling and explicit instructional strategies include the following:

(1) Text/schema links. Text clues (key words, phrases, etc.) or background associations which affect coherence are identified by the instructor.

(2) Direction. Leading questions that foster the reader's logical organization of concepts and enable the student to identify main ideas, locate supporting details, and draw conclusions are modeled by the instructor.

(3) Association. The instructor identifies and/or requests other relationships (i.e., comparison/contrast, analogies, uses, etc.). Perceiving these relationships aids in the expansion and use of background knowledge (Atkinson and Longman, in press).

(4) Justification. Students are asked to identify text/schema links used to indicate main ideas, supporting details, and conclusions.

One reason for comprehension failure may be the reader's incorrect formulation of hypotheses and comprehension goals. The reader can resolve this problem by comparing comprehen-

sion purposes with the content of the text. If the original hypotheses seems to be correct, the reader should focus on re-reading and re-organizational strategies. Re-reading strategies include skimming and narrowing text information (Davey, 1983) while re-organizational strategies encompass paraphrasing or verbalizing confusing points (Brown, Campione, and Day, 1981). Reading ahead for clarification is the third way to resolve comprehension difficulty (Davey, 1983).

The reader may also fail to comprehend because of his/her inability to identify unknown words. One strategy for the resolution of word identification failures is the use of text-based (Table 2) and framework-based context clues. Framework-based context clues do not rely on written text clues, but are derived from the reader's background knowledge/schemas of surrounding words. (Atkinson and Longman, 1985.).

Summary of Implications

In summary, we have noted the following implications for the instruction of post-secondary developmental readers:

1. Students have received little instruction from teachers or basal readers in elementary schools.

2. Post-secondary texts often provide definitions and drill of skill rather than direct instruction of skills.

3. Good readers have a subconscious model for processing expository text; poor readers have no model.

4. A model for processing expository text can be conceptualized and explicitly taught.

5. Instructors must be aware of all phases of the instructional model and must be able to demonstrate and teach them.

6. Readability should focus on concept load and text cohesion.

7. The instructor can provide students with tools for comprehending difficult text.

8. Teachers must provide background knowledge for schema development and opportunities for developing schema.

9. Instructors must utilize informed teaching and modeling strategies to demonstrate comprehension processing and resolving strategies.

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