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ABSTRACT

Reading strategies that have been identified and recommended by recent literature can be classified into four categories: cognitive strategies, compensation strategies, memory strategies, and test-taking strategies. Research indicated that the use of appropriate strategies may improve reading comprehension. Research has also suggested that readers could be trained to learn and use reading strategies, which raised the need to incorporate reading strategy instruction into the school curriculum. Reading strategy instruction is making its way into regular classrooms. The integration of reading strategy instruction with cooperative learning has changed the traditional pattern of reading as an individual activity. Group efforts, peer cooperation, and teacher-student interaction become an important part of the new reading strategy instruction approach. Considering the large number of students in a regular reading class, this seems to be a feasible solution. (Contains 32 references.) (RS)

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Literature Review On Reading Strategy Research
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Literature Review On Reading Strategy Research

Reading is an essential way of obtaining information in contemporary society. Research discovered that readers spontaneously use reading strategies in the reading process (Pritchard, 1990). Literature also suggested that the use of appropriate reading strategies may improve reading comprehension (Oxford, 1990, Olsen and Gee, 1991). Using reading strategies can be of great help to non-native readers because it may serve as an effective way of overcoming language deficiency and obtaining better reading achievement both for regular school assignments and on language proficiency tests (Zhang, 1992). In this paper I will review current research in reading strategies. The emphasis will be placed on (1) summarizing various reading strategies that have been identified and recommended in current research, and (2) identifying the new trend in reading strategy instruction.

Reading strategies that have been identified and recommended

1. Cognitive strategies

Reading comprehension is a cognitive process. Various cognitive strategies can be employed to facilitate reading comprehension. Examples of cognitive strategies include the skills of predicting based on prior knowledge, using statements to check their comprehension, analyzing text organization by looking for specific patterns (Numrich, 1989, Oxford, 1989), and self-questioning (Nolan, 1991).

Perhaps the most discussed topic relating to cognitive strategies is the use of prior knowledge. Many reading

researchers believe reading is an interactive process between the reader and a text. Successful activation and utilization of relevant prior knowledge is of primary importance in this interactive process (Anderson, 1977, Lipson, 1983, Langer, 1984, Zhang, 1989, Zhang, 1992). The more background knowledge a reader brings to a text, the easier it is to comprehend the text. Quite a few studies have been conducted recently to investigate the effects of prior knowledge on reading comprehension.

In their experimental study with a group of college students, Feeley, Wepner, and Willging (1985) assessed how background knowledge affected the subjects' performance on the Nelson-Denny Reading Test. During the experiment, the experimental group subjects were exposed frequently to the background knowledge and topics which would be encountered on the upcoming standard test. At the close of the semester the experimental group outperformed the control group on the Nelson-Denny Reading Test. This finding once again lent support to the notion that readers' prior knowledge about a topic had a powerful influence on their comprehension of the material concerning that topic. It also pointed out the fact that a reading test may be biased against those without the necessary background experience.

In a similar study with a group of six graders, Langer (1984) used the schema-activating task to raise the quality of knowledge children brought to the reading and consequently raised the comprehension scores of the average readers. Langer

concluded that specific background knowledge was a reliable predictor of passage-specific comprehension.

Based on a study with a group of expert readers, Afflerbach (1990) concluded that comprehending a text was similar to a hypothesis testing process in which the reader would use what Afflerbach called initial hypothesis strategy or draft-and-revision strategy. These strategies would allow the reader to first form a general idea about the text. Through constant interaction with the text, the reader would then revise the initial hypothesis and construct the main idea of the text. Afflerbach explained that the task of constructing main idea (which was the result of comprehension) was more difficult for those readers without adequate background knowledge. The reader's prior knowledge for the content of a text may significantly influence the nature of the reader's prediction strategy.

The importance of background knowledge has been examined by schema theorists. According to schema theory, comprehension is an interactive process which involves assimilation of new knowledge into existing schemata and accommodation of existing schemata to fit new knowledge. Research indicated that (a) lack of schemata or failure to activate an appropriate schema can significantly impair comprehension, (b) appropriate content schema application can increase comprehension, and (c) comprehension is facilitated by explicitly introducing schemata through pre-reading activities (Zhang, 1989, Scarcella & Oxford,

1992). Successful activation of the relevant previous knowledge and the use of that knowledge in comprehending a text is often an indication that distinguishes proficient readers from poor readers (Golinkiff, 1975-1976, Smith, 1967).

Another two cognitive strategies recommended by Nolan (1991) were self-questioning and prediction. According to Nolan, self-questioning directed the reader's attention to critical aspects of the text, thus increasing understanding of important textual elements. Prediction provided a purpose for reading and activated a cognitive blueprint to guide the reader during reading. Moreover, prediction encouraged the reader to have a personal investment in the reading task. Nolan's research findings indicated that the combination of both strategies was more effective than any one of them.

2. compensation strategies

One problem encountered by many readers is unfamiliar vocabulary and unknown concepts. This is where the reader needs to use compensation strategies to arrive at comprehension. Pritchard (1990) discovered that readers unconsciously used such compensation strategies as accepting ambiguity, and establishing intrasentential and intersentential ties. Using context clues is a more familiar term recommended by many researchers for the same purpose. In their research paper, Sinatra and Dowd (1992) suggested a comprehension framework for the use of context clues. The framework has two major divisions: syntactic clues and semantic clues. The syntactic clues were related to grammatical

structure whereas semantic clues involved intra- and inter-sentence meaning relationship. Sinatra and Dowd argued that, by understanding how the writer used grammar, the reader would have a direct key to unlocking a word's meaning. The reader should also use semantic clues such as restatement, use of examples and summary clues when guessing the meaning of a new word. When talking about compensation strategies, Oxford (1990) distinguished between linguistic clues and other clues. Suffixes, prefixes, and word order are useful linguistic clues for guessing meanings. Other clues include using text structure such as introductions, summaries, conclusions, titles, transitions, ways of dividing the text, and using general background knowledge. These clues not only help readers overcome a limited vocabulary but also enable them to make guesses about the meaning of a paragraph, the position of the author, and theme of an article. In addition, these strategies may significantly raise reading efficiency (Zhang, 1992).

3. memory strategies

The study of memory strategy is another focus in reading research. Under the heading of memory strategies a number of techniques have been identified such as creating mental/visual images, grouping, story mapping, and organizing information in meaningful patterns.

According to Paivio's dual coding theory (1986), visual imagery and verbal code are two related cognitive codes. Linguistic competence and performance are based on a substrate of

imagery. Paivio claimed that comprehension is more dependent on imagery in the case of concrete than abstract sentences. Imagery includes not only static representations of objects, but also dynamic representations of action sequences and relationships between objects and events. The verbal system and nonverbal system can be active independently or in parallel. The activation of verbal and nonverbal representations is a joint function of variables in the stimulus situation and relevant individual difference variables. Paivio's theory suggests (1) visualizing verbal material is part of cognitive process, (2) using visual imagery may enhance comprehension, and (3) people are different in their ability to generate imagery based on verbal material.

The notion that people differ in their ability to generate imagery based on verbal materials has been supported by other studies. In his book Principles of Mental Imagery, Finke (1989) stated explicitly: "People differ in their imagery skills. Some claim to be able to form clear and vivid images at will; others claim to have little if any imagery ability" (p. 27). From interviews and open-ended questions with two school-age subjects, Cothorn, Konopak and Willis (1990) also discovered their imageries of literary characters were divergent. The subjects' imageries of the characters, their text interpretation and subsequent meaning construction deviated somewhat from the text and varied between themselves. Cothorn et al. claimed this difference could be accounted for by the difference in the

readers' personal experience. Their study lent support to the notion that both text and reader factors contribute to text meaning development. It also suggested personal experience and prior knowledge may affect the reader's imagery and meaning construction. The issue of individual differences in relation to visualization and imagery was also investigated by Bell (1991). From her clinical experience with language-disorder patients, Bell discovered that individuals with weak oral language comprehension had trouble integrating linguistic parts into a whole. These readers may recognize individual words, but they did not have the imaging ability to hold and integrate vocabulary with incoming language and images. Hereditary factor and the lack of stimulation or relevant prior knowledge may account for what Bell termed gestalt imagery disorder. Bell argued that people could be trained to develop gestalt imagery and consequently improve language comprehension. Her techniques included picture to picture, sentence imaging, sentence by sentence imaging, sentence by sentence with interpretation, and multiple sentence imaging, paragraph imaging, paragraph by paragraph imaging. The patients receiving the treatment to stimulate gestalt imagery experienced a significant gain in reading comprehension. Bell's study suggested that imagery and visualization may help the reader grasp thematic information. In addition, developing imaging and visualizing ability is an indirect way to improve language comprehension.

Another advantage of visualization is that it retained longer than verbal recall, (Paivio, 1986, Sadoski, Goets, Olivares, Lee and Roberts, 1990). Sadoski et al. claimed that imagery was associated with comprehension of deeper levels of information processing such as a story's plot and theme. Thus the use of images was a useful technique for narrative and expository writings.

Similarly, story mapping has been proved to enhance retention and recall of major concepts of a written text (Holly, Dansereau, McDonald, Garland & Collins, 1979, Bech, Omansen & McKeown, 1982). According to Oxford (1990), the mind's storage capacity for visual information exceeds its capacity for verbal material. Visual images may effectively transfer large chunks of information to long-term memory and may also act as the most potent device to aid recall of verbal material. Reutzel (1984) argued that the use of story map may help the reader identify meaningful relationships among concepts or events.

In addition to imagery, visualization and story mapping, a few other empirically- or theoretically-validated memory strategies have been recommended by Olsen and Gee (1991). Included were semantic mapping, organizing information in meaningful patterns (sequence pattern, descriptive pattern, cause/effect pattern, comparison/contrast pattern, problem/solution pattern), and group summarizing. All these memory strategies plus the ones we have previously discussed may help to improve learner' reading comprehension.

4. test-taking strategies

A number of test-taking strategies have been recommended by reading researchers. This is in tune with the wide use of multiple-choice items in standardized tests.

Pearson and Johnson's (1978) study was mainly concerned with question type and corresponding question-answering strategies. They identified three types of questions and the corresponding locations or information sources for their answers: (1) textually explicit questions-their answers can be located in the text directly "on the lines", (2) textually implicit questions -their answers can be located "between the lines", and (3) scriptally implicit questions-their answers can only be generated "beyond the lines" (students need to use background knowledge). Recognizing question type (often through key words) is the first step in utilizing appropriate skills to tackle test items.

Jacob (1985) made two suggestions to test takers: (1) Before reading a passage, the test taker should first read questions and answers. This will help the reader focus on the relevant information in the passage. (2) The test taker should answer each question by a process of elimination (for multiple-choice questions). The same test-taking strategies were recommended by Fry (1989), Oxford (1990), and Zhang (1992) with the assumption that reading with a purpose would significantly improve efficiency and test results.

From the previous discussion we can see that the four sets of reading strategies are all associated. To some extent cognitive element is present in all four divisions. The fact that readers use various strategies is a manifestation of their conscious cognitive efforts. This explains why some strategies such as organizing information in meaningful patterns is included in both cognitive section and memory section.

Reading strategy instruction

For some researchers, identifying reading strategies should not be an end in itself. They argued that reading strategies should be integrated into classroom instruction (Oxford, 1989, Numrich, 1989, Olsen and Gee, 1991). Many of these studies are theory-based but application-oriented. The purpose is to equip readers' with necessary reading skills.

Blanton and Wood (1984) argued that most comprehension instruction failed to provide students with demonstrations and strategies on how to comprehend written material and how to take a test. They provided an alternative model of direct instruction in reading comprehension test-taking strategies. The model consisted of three stages: (1) modeling, (2) repeated exposure via guided practice, and (3) transfer to printed settings (or application). In this model Blanton and Wood demonstrated step by step how to identify question type and locate corresponding answers from a written passage. They also gave students plenty of opportunities to practice the strategies following direct instruction. Blanton and Wood claimed that their model of

direct instruction on test-taking strategies was heuristic.

Roe (1992) also proposed a model on reading strategy instruction. The target audience in his study were middle school students and the strategy taught was compensation strategy. The reading materials used were either students' textbooks or books of their own choice. Having given examples of how to infer a word's meaning from the context, the teacher would give students sentences with some unknown words and ask them to use context clues to infer their meaning. Cooperative learning was stressed as the students worked in groups. Spokespeople for each group then shared their thinking and inferences with the whole class. Roe claimed that this model was an answer to the challenge to middle school teachers who had to deal with students of diverse reading competence and interests. Another advantage of this model was that it integrated reading instruction with cooperative learning techniques.

This new trend of combining strategy instruction with cooperative learning approach is also found in McConnell's experiment (1992). In this case, students were encouraged to integrate verbal understanding with visual imagery in the reading process. They were first informed of the general topic of the text they were going to read. Then they were asked to draw their mental impression of the topic in a picture form. In this process of drawing mental impression, the students not only developed their visual ability but also used unique background knowledge. Following this they would read the text and redraw

their pictures again. The last step of the activity was to share mental pictures with other students and had group reading. Three valuable characteristics of this experiment were (1) students' initiative and input were stressed, (2) visualization was included as part of reading process, and (3) peer cooperation and learning were integrated with regular reading strategy instruction. As the editor commented, this strategy of translating mental images into simple drawings helps students at all levels bridge the gap to better comprehension and learning.

In short, reading strategy research has found its market for application in regular classrooms. This occurs as a reply to the urgent demand to meet the diverse needs and backgrounds of our students and to raise the general level of their reading achievement. Two noticeable trends in recent reading strategy instruction are (1) combination of strategies is preferred than a single strategy and (2) reading strategy instruction is integrated with cooperative learning approach. Considering the fact that reading strategy instruction is often conducted with a large group of students, the use of cooperative learning approach seems to be a suitable solution.

Conclusion

The reading strategies that have been identified and recommended by recent literature can be classified into four categories: cognitive strategies, compensation strategies, memory strategies, and test-taking strategies. Research indicated that the use of appropriate strategies may improve reading

comprehension. This finding was best summarized by Carroll (1977) when she said: "It's is through the adoption of appropriate learning sets and strategies that learners can often be successful even when the talents they bring to the task are moderate, or indeed only minimal" (p. 100). Research also suggested that readers could be trained to learn and use reading strategies. This raised the need to incorporate reading strategy instruction into school curriculum. Right now reading strategy instruction is making its way into regular classrooms. The integration of reading strategy instruction with cooperative learning has changed the traditional pattern of reading as an individual activity. Group efforts, peer cooperation, and teacher-student interaction become an important part of the new reading strategy instruction approach. Considering the large number of students in a regular reading class, this seems to be feasible solution. We would to see more learners benefit from reading strategy instruction.

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