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READING PROFICIENCY, READING STRATEGIES, METACOGNITIVE AWARENESS AND L2 READERS

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Abstract

This paper provides an overview of the research related to second language learners and reading strategies. It also considers the more recent research focusing on the role of metacognitive awareness in the reading comprehension process. The following questions are addressed: 1) How can the relationship between reading strategies, metacognitive awareness, and reading proficiency be characterized? 2) What does research in this domain indicate about the reading process? 3) What research methodologies can be used to investigate metacognitive awareness and reading strategies? 4) What open questions still remain from the perspective of research in this domain, and what are some of the research and methodological concerns that need to be addressed in this area in order to advance the current conceptual understanding of the reading process in an L2. Since so much of second language research is grounded in first language research, findings from both L1 and L2 contexts are discussed.

Introduction

The current explosion of research in second language reading has begun to focus on readers' strategies. Reading strategies are of interest for what they reveal about the way readers manage their interaction with written text and how these strategies are related to text comprehension. Research in second language reading suggests that learners use a variety of strategies to assist them with the acquisition, storage, and retrieval of information (Rigney, 1978). Strategies are defined as learning techniques, behaviors, problem-solving or study skills which make learning more effective and efficient (Oxford and Crookall, 1989). In the context of second language learning, a distinction can be made between strategies that make learning more effective, versus strategies that improve comprehension. The former are generally referred to as learning strategies in the second language literature. Comprehension or reading strategies on the other hand, indicate how readers conceive of a task, how they make sense of what they read, and

what they do when they don't understand. In short, such strategies are processes used by the learner to enhance reading comprehension and overcome comprehension failures.

Since the early seventies, for the most part, research in this area has concentrated on teaching second language students to use a variety of language strategies in order to read better. These strategies consist of a whole range of strategies including skimming and scanning, contextual guessing, reading for meaning, utilizing background knowledge, recognizing text structure and so forth. Less common; however, have been empirical investigations into reading strategies used by successful and unsuccessful second language learners. Furthermore, while many of the previous studies have employed think-aloud methods to obtain information about learners' reading strategies and the reading process, few of these studies have examined readers' metacognitive awareness of reading strategies, strategy use, and reading proficiency. Although it is not possible to cover the range of studies conducted in this area, this paper will address the following questions: 1) How can the relationship between reading strategies, metacognitive awareness, and reading proficiency be characterized? 2) What does research in this domain indicate about the reading process? 3) What research methodologies can be used to investigate metacognitive awareness and reading strategies? 4) What open questions still remain from the perspective of research in this domain, and what are some of the research and methodological concerns that need to be addressed in this area in order to advance the current conceptual understanding of the reading process in an L2. Since so much of second language research is grounded in first language research, findings from both L1 and L2 contexts are discussed.

Reading Strategies and Reading Comprehension

Because numerous studies have investigated strategies used by L2 learners, before proceeding to an overview of these studies, it would be beneficial to provide the reader with a conceptual framework in order to allow for consistency in the terminology used throughout this paper. Although a number of studies have attempted to conceptualize the notion of strategies used by language learners, as stated, Oxford (1990) offers a useful and comprehensive classification scheme of the various strategies used by learners. Within the broader context of reading strategies, the following six strategies can more appropriately be referred to as sub-strategies. Cognitive strategies are used by learners to transform or manipulate the language. In more specific terms, this includes note taking, formal practice with the specific aspects of the target language such as sounds and sentence structure, summarizing, paraphrasing, predicting, analyzing, and using context clues. Techniques that help the learner to remember and retrieve information are referred to as memory strategies. These include creating mental images through grouping and associating, semantic mapping, using keywords, employing word associations, and placing new words into a context. Compensation strategies include skills such as inferencing, guessing while reading, or using reference materials such as dictionaries. Metacognitive strategies are behaviors undertaken by the learners to plan, arrange, and evaluate their own learning. Such strategies include directed attention and self-evaluation, organization, setting goals and objectives, seeking practice opportunities, and so forth. In the context of reading, self-monitoring and correction of errors are further examples of metacognitive strategies. Learners also use affective strategies, such as self-encouraging behavior, to lower anxiety, and encourage learning. Lastly, social strategies are those that involve other individuals in the learning process

and refer to cooperation with peers, questioning, asking for correction, and feedback; for example, while reading, a student may ask another individual for feedback about his/her reading responses.

It is important to recognize that the above strategies can be used to facilitate learning, or can be used to facilitate comprehension. For example, a learner can employ the memory strategy of grouping in order to learn vocabulary words more quickly and more effectively. Similarly, grouping can also be used to facilitate the understanding and meaning of words. Furthermore, such strategies will vary depending on the language area or skill to be mastered. In other words, task requirements help determine strategy choice; learners would not use the same strategy for writing an essay as they would for engaging in informal conversation in a second language.

Reading Strategies of Successful and Unsuccessful Learners

Since much of the research in the area of reading strategies has stemmed from first language studies in reading, a review of both the major research in first language and second language learning is included. In many first language studies, the use of various strategies has been found to be effective in improving students' reading comprehension (Baker and Brown, 1984; Brown, 1981; Palinscar and Brown, 1984). Some studies have also investigated the reading strategies used by successful and unsuccessful language learners. In a second-language study, Hosenfeld (1977) used a think-aloud procedure to identify relations between certain types of reading strategies and successful or unsuccessful second language reading. The successful reader, for example, kept the meaning of the passage in mind while reading, read in broad phrases, skipped inconsequential or less important words, and had a positive self-concept as a reader. The unsuccessful reader on the other hand, lost the meaning of the sentences when

decoded, read in short phrases, pondered over inconsequential words, seldom skipped words as unimportant, and had a negative self-concept.

Block (1986) also used a think-aloud procedure in her study of non-proficient readers from which she was able to obtain information about four characteristics, namely integration, recognition of aspects of text structure, use of general knowledge, personal experiences and associations, and response in extensive versus reflexive modes which differentiated successful from less successful, non-proficient readers. In the reflexive mode, readers related affectively and personally, directed their attention away from the text and toward themselves, and focused on their own thoughts and feelings, rather than on information from the text. In addition, they tended to respond in the first or second person. In the extensive mode, the reader's focus was on understanding the ideas of the author, not on relating the text to themselves. They tended to respond in the third person. Among the non-proficient readers Block investigated, one group which she designated as "integrators", integrated information, were generally aware of text structure, responded in an extensive mode by dealing with the message conveyed by the author, and monitored their understanding consistently. The "non-integrators" on the other hand, failed to integrate, did not recognize text structure, and were more reflexive in that they relied much more on personal experiences. Overall, the "non-integrators" made less progress in developing their reading skills and demonstrated less success after one semester in college.

Strategy Use and Individual Differences

Knight, Padron and Waxman (1985) conducted a study to determine whether there were differences in either the type or frequency of cognitive strategies reported by ESL and monolingual students. Individual interviews which were audiotaped for analysis were conducted

with 23 Spanish-speaking ESL students and 15 monolingual students from the third and fifth grades of an inner-city public school. The San Diego Quick Assessment was used to determine their reading levels. A matched passage from the Ekwall Reading Inventory Manual (Ekwall, 1979) was used to identify the strategies the students were using during a reading task. Spanish-speaking students were permitted to speak in their native language in order to clearly explain the strategies being used. Using an adapted version of a structured interview format from Chou Hare and Smith (1982), the students' strategies were categorized as follows: 1. Rereading, 2. Selectively reading, 3. Imaging, 4. Changing Speed, 5. Assimilating with personal experiences, 6. Concentrating, 7. Assimilating with passage events or thinking about previous events, 8. Noting/searching for salient details, 9. Summarizing, 10. Predicting outcomes, 11. Self-generated questions, 12. Student perceptions of teacher expectations, and 13. Rehearsal. It was found that English monolinguals cited the strategy of Concentrating the most, while the strategy of Student's Perceptions of Teacher's Expectations was least cited. ESL students, on the other hand, cited this strategy the most. The categories of Imaging, Noting Details and Predicting outcomes were not cited by any bilingual students during the interviews. The use of three strategies, Concentrating, Noting Details, and Self-Generated Questions was reported significantly more often by monolinguals than ESL students and overall, English-speaking subjects used more strategies than ESL students. One explanation that the authors offered for these results was that ESL students may not have had enough time to develop these strategies in their first language and were transferred to English texts too quickly.

Differences in strategy use were also examined by Anderson (1991). He carried out a study to investigate the individual differences in strategy use by adult second language learners while engaged in two reading tasks: taking a standardized reading comprehension test and

reading academic texts. The subjects consisted of twenty-eight Spanish-speaking students enrolled at a university level intensive ESL program in the Southwestern United States. Their English proficiency level as determined by a placement test ranged from beginning to advanced level. Students were administered two forms of the Descriptive Test of Language Skills (DTLS) and The Textbook Reading Profile (TRP). The questions on the DTLS were grouped into clusters according to the type of reading skill being measured. The TRP questions asked the subjects to use think aloud protocols as they responded to comprehension questions at the end of the passage. Analysis of both quantitative and qualitative data revealed that there was no single set of processing strategies that significantly contributed to success on these two reading measures. Both high and low scoring readers appeared to be using the same kinds of strategies while answering the comprehension questions on both measures; however, high scoring students seemed to be applying strategies more effectively and appropriately. Anderson's (1991) study seems to indicate that strategic reading is not only a matter of knowing which strategies to use, but in addition, the reader must know how to apply strategies successfully. This may be one factor contributing to the relationship between proficiency level and reading strategies used by readers.

Olshavsky's (1977) study was designed to identify reader strategies and to relate their usage to three factors: interest, proficiency and writing style. A 2x2x2 design was used with two types of reader interest, high and low; two types of reader proficiency, good and poor; and two types of writing styles, abstract and concrete. The subjects included fifteen boys and nine girls enrolled in a tenth grade English class. Each subject was asked to read a short story and to stop at various points in order to answer questions. At predetermined stopping points in the story, they were asked to talk about what happened in the story and about what they were doing and

thinking as they read it. Despite a number of limitations in this study, Olshavsky's (1977) study showed that readers do use strategies. While this is a well-known fact today, the types of strategies that were identified lent support to the theoretical position that reading is a problem-solving process. This study seemed to indicate that a reader identifies problems and applies strategies to solve those problems. Although the types of strategies do not change with the situation, the frequency of use of strategies does change. As stated, most strategies were applied when readers were interested in the material, with readers that were proficient, and when they were faced with abstract material.

Reading Strategies and Younger Learners

Various other studies in the area of reading strategies have found that younger and less proficient students use fewer strategies and use them less effectively in their reading comprehension (Garner, 1987; Waxman and Padron, 1987). Waxman and Padron's (1987) study involved 82 Hispanic ESL students in the third, fourth, and fifth grades of a public elementary school. The reading comprehension section of the Stanford Diagnostic Reading Test (Karleson, Madden and Gardner, 1966) was administered twice in a four month period to determine the relationship between the strategies cited by students and gains in reading comprehension. The Reading Strategy Questionnaire, a fourteen item Likert-type questionnaire (Waxman and Padron, 1987) was administered to the subjects so that students could indicate the extent to which they used a particular strategy. A score of 3 meant that the student perceived using the strategy all the time, a score of 2 meant it was used some of the time, whereas a score of 1 indicated that the student perceived using the strategy none of the time. The results showed that the most cited strategies were asking questions about the parts of the story that weren't understood, checking

through the story to see if the student remembers all of it, imaging or picturing the story, and looking up words in the dictionary. The least cited strategies were reading as fast as one could, thinking about something else while reading, writing down every word, and skipping parts in the story that were not understood. Results of the questionnaire were compared to results on the task which indicated that student's perceptions of the strategies they use have predictive validity for their reading comprehension. These findings support previous metacognitive research conducted with monolinguals which has found that lower achieving students use less sophisticated and inappropriate reading strategies during reading (Brown, Armbruster, and Baker, 1986). This study also suggests that the use of negative strategies by Hispanic students, specifically strategies that are ineffectively applied, may be another factor other than English proficiency that interferes with their reading comprehension and hence reading achievement. Both studies indicated that there is indeed a relationship between the types reading strategies readers use and proficiency level. Overall, these studies suggest that high proficient students seem to use different strategies than low proficient students, and also appear to apply them more effectively.

Other studies have shown that students who use metacognitive strategies, such as those who monitor their reading comprehension, adjust their reading rates, consider the objectives and so on, tend to be better readers. A two-part first language study by Paris and Meyers (1981) was carried out to examine comprehension monitoring and study of strategies good and poor readers. The initial part of their study investigated the differences in comprehension monitoring between good and poor fourth grade readers during an oral reading of a story. Their ability to monitor comprehension of difficult anomalous information was measured by spontaneous self-corrections during oral reading, by directed underlining of incomprehensible words and phrases, and by study behaviors. Their study demonstrated that poor readers do not engage in accurate

monitoring as frequently as good readers. Furthermore, poor readers also demonstrated less accurate comprehension and recall of the stories than good readers. The second phase of their study was conducted to provide additional information about the differences between good and poor readers' comprehension skills. The researchers paid particular attention to children's strategies for deriving meaning for difficult vocabulary words. It was found that good readers used comprehension strategies far more frequently than poor readers. For example, good readers wrote notes and summaries related to the text. The children were also asked to define specific vocabulary words. Most good readers reported using strategies of asking questions or referring to the dictionary to determine word meaning, while none of the poor readers did so. Poor readers were more concerned with the pronunciation of words rather than meanings. Overall, poor readers engaged in a few spontaneous study behaviors, failed to ask questions, take notes or use a dictionary as often as good readers. High proficient readers, on the other hand, used cognitive, memory, metacognitive, compensation, and social strategies to a far greater extent than low proficient readers. Although the above discussion pertaining to reading strategies and second language learning is by no means exhaustive, it does provide one with an overview of the kinds of investigations and range of studies that have been carried out by researchers in this area.

From the above findings of research in reading strategies, it becomes clear that there are indeed differences between successful or good readers, and less successful or poor readers in terms of strategy use. There is also a strong relationship between reading strategies used by readers and proficiency level. Overall, successful readers or high proficient readers, appear to be using a wider range of strategies. Moreover, these readers also appear to use strategies more frequently than less successful or poor readers. Results of some studies have also shown that successful readers know when and how to apply reading strategies on a given task. A pertinent

point to note; however, is that while many of these studies have examined strategy use by different types of readers, (successful vs. less successful, good vs. poor, and so forth), such simplistic dichotomies can tend to be limiting in nature. While descriptions are needed to identify different types of readers, such broad categories may also overlook subtle and important differences between learners and strategy use. One must use caution in employing descriptions as mere labels. These differences must be examined closely in order to assist learners in improving their reading abilities, and skills.

Metacognitive Awareness and Reading Comprehension

Research in the area of reading has also begun to focus on the role of metacognition. While previous research has focused on strategy use, researchers are examining readers' awareness of strategies during the reading process – their metacognitive awareness. Metacognition is a relatively new label for a body of theory and research that addresses learners' knowledge and use of their own cognitive resources (Garner, 1987). Metacognitive knowledge or awareness is knowledge about ourselves, the tasks we face, and the strategies we employ (Baker & Brown, 1984). Knowledge about ourselves may include knowledge about how well we perform on certain types of tasks or our proficiency levels. Knowledge about tasks may include knowledge about task difficulty level. For example, in the area of reading, we may know that familiar-topic material is easier to understand than unfamiliar material; explicit sentences assist us in tasks that require reduction of texts to their gists. About strategies, we may know that verbal rehearsal and elaboration of material assist in retrieval, or that prediction of article content based on titles improves comprehension, and so forth. Metacognitive awareness therefore, also involves the awareness of whether or not comprehension is occurring, and the conscious

application of one or more strategies to correct comprehension (Baumann, Jones, & Seifert-Kessel, 1993). This body of work has enormous explanatory power for description of the reading process in both the L1 and L2 contexts. First language reading researchers, most notably Baker and Brown (1984) have investigated several different aspects of the relationship between metacognitive ability and effective reading. Two dimensions of metacognitive ability have been recognized: 1) knowledge of cognition or metacognitive awareness; and 2) regulation of cognition which as stated includes the reader's knowledge about his or her own cognitive resources, and the compatibility between the reader and the reading situation. For example, if a readers is aware of what is needed to perform effectively, then it is possible to take steps to meet the demands of a reading situation more effectively. If, however, the reader is not aware of his or her own limitations as a reader or of the complexity of the task at hand, then the reader can hardly be expected to take actions to anticipate or recover from difficulties (Carrell, 1989).

Related to this is the reader's conceptualization of the reading process. Devine (1983) has investigated L2 readers' conceptualizations about their reading in a second language. Analysis of transcripts of reading interviews provided information on beginning ESL readers' theoretical orientations toward reading in their second language. Devine's results are reminiscent of first language reading research which has generally shown that younger and less proficient readers tend to focus on reading as a decoding process rather than as a meaning-making process (Myers and Paris, 1978; Garner & Krauss, 1982). Some of these first language studies using self-report data have also found a lack of correlation between what readers say they do and what they actually do when reading. While at other times, a reader does not describe how to use a particular strategy but in fact does use it when reading. To explain this, Baker & Brown (1984) point out that "knowing that" (declarative knowledge) is different from "knowing how" (procedural

knowledge), and that knowledge that a particular strategy is useful (awareness) precedes its routine use, which in turn precedes the ability to describe how it is used.

Some studies have shown that better readers are also better strategy users. Carrell (1989) for example, conducted a study to investigate the metacognitive awareness of second language readers about reading strategies in both their first and second language, and the relationship between their metacognitive awareness and comprehension in both first and second language reading. Two groups of subjects of varying proficiency levels including forty-five native speakers of Spanish enrolled at an ESL intensive program at a university, and seventy-five native speakers of English studying Spanish were involved in the study. A metacognitive questionnaire was developed to elicit relevant information from subjects to tap their metacognitive awareness and judgments about silent reading in their first and second language. Subjects were also tested in both their first and second languages by reading a text in each language and then answering comprehension questions pertaining to the text. The findings of the study yielded some interesting results. For reading in the L1, local reading strategies such as focusing on grammatical structures, sound-letter, word meaning and, text details tended to be negatively correlated with reading performance. For reading in the L2, there were some differences between the Spanish L1 and the English L1 groups. The ESL group, of more advanced proficiency levels, tended to be more global (used background knowledge, text gist, and textual organization) or top-down in their perceptions of effective and difficulty-causing reading strategies, while the Spanish-as-a-foreign language group, at lower proficiency levels tended to be more local or bottom-up, perhaps because they may have been more dependent on bottom-up decoding skills. Carrell (1989) cautions these results are to be taken as suggestive as further research in this area is needed.

In another recent study of L2 reading involving 278 French language students, Barnett (1988) investigated the relationships among reading strategies and perceived strategy use on reading comprehension. The initial part of the study required students to read an unfamiliar passage and write in English what they remembered. The second part of the study asked the students to answer a series of background knowledge questions before reading a text, and the third part of the study required students to continue the ending of a text. The final part required the subjects to answer a seventeen-item questionnaire in English about the types of reading strategies they thought best described the way they read. "Background knowledge scores", "comprehension scores" and "strategy-use scores" were used for analysis which revealed that students who effectively consider and remember context as they read, (ie. strategy use) understand more of what they read than students who employ this strategy less or less well. Moreover, students who think they use those strategies considered most productive (ie. perceived strategy use) actually do read through context better and understand more than do those who do not think they use such strategies" (p. 156).

Given the above discussion, there appears to be a strong relationship between reading strategies used by readers, metacognitive awareness, and reading proficiency. In essence, successful readers appear to use more strategies than less successful readers and also appear to be use them more frequently. Better readers also have an enhanced metacognitive awareness of their own use of strategies and what they know, which in turn leads to greater reading ability and proficiency (Baker & Brown, 1984; Garner, 1987; Pressley & Afflerbach, 1995). Researchers in this area have found that in general, more proficient readers exhibit the following types of reading behaviors: Overview text before reading, employ context clues such as titles, subheading, and diagrams, look for important information while reading and pay greater

attention to it than other information, attempt to relate important points in text to one another in order to understand the text as a whole, activate and use prior knowledge to interpret text, reconsider and revise hypotheses about the meaning of text based on text content, attempt to infer information from the text, attempt to determine the meaning of words not understood or recognized, monitor text comprehension, identify or infer main ideas, use strategies to remember text (paraphrasing, repetition, making notes, summarizing, self-questioning, etc), understand relationships between parts of text, recognize text structure, change reading strategies when comprehension is perceived not be proceeding smoothly; evaluate the qualities of text, reflect on and process additionally after a part has been read, and anticipate or plan for the use of knowledge gained from the reading (Aebersold & Field, 1997; Pressley & Afflerbach, 1995). While this list is not prioritized or complete, it does provide one with a description of the characteristics of successful readers, and continues to grow as more research into reading is conducted.

Methodological Concerns in Reading Strategy and Metacognition Research

Protocol analysis is the main methodology through which the reading comprehension is investigated. In most of these studies, interviews or think-aloud procedures are used. Interviews may occur during or after the task, while in the think-aloud method, the researchers provides a task and asks subjects to say aloud "everything they think and everything that occurs to them while performing the task" (Garner, 1987). Think-alouds require a reader to stop periodically, reflect on how a text is being processed and understood, and relate orally what reading strategies are being employed. In other words, think alouds involve the overt, verbal expression of the normally covert mental processes readers engage in when constructing meaning from texts

Investigations of reading have used protocol analysis both as an exploratory methodology (inductively) and as a means of testing hypothesis about reading that emanate from initial explorations (ie. deductively). Protocol analysis has been used to investigate the range of reading strategies and behaviors as subjects read, and to better understand the cognitive processes during reading (Afflerbach & Johnston, 1986; Ericsson & Simon, 1980; Pressley & Afflerbach, 1995; Wade, 1990).

While protocol analysis based on verbal interviews and think-aloud data continues to be used in reading research, it is not without its problems. The most basic concern expressed in the literature is that we may not be able to observe the workings of our own minds with any accuracy. In other words, we may be unaware of the operations of memory, attentions, comprehension processes, and the like – perhaps because many of these processes are so automatic. Ericsson & Simon (1980) point out that as processes become more automated, and hence unconscious, only the final products are left in memory available for reporting to an interviewer. Subjects may draw inferences about what probably occurred in processing and report these events rather than what actually occurs. Memory failure can also be a particularly serious problem for verbal-report data. Reports taken at a great distance from processes they are intended to tap, may reveal little about the reading comprehension process and strategies used by the reader. Such methodology has also shown that while students may report using a particular strategy, it is not used at all, and by the same token, strategies that are used by readers, are not reported. Therefore, the discrepancy between knowledge versus use should be recognized when using think-aloud report data. Lastly, verbal facility of the reader may affect the outcome of the interviews. Learners, especially younger children can fail to provide a full response for a number of reasons other than lack of knowledge. One reason is limited language skills. Even in instances

in which cognitions are generally accessible and remembered, it is possible that they cannot be verbalized. It must also be recognized that considerable differences exist in the tendency to speak aloud.

Despite the criticisms of verbal report data, most researchers do believe that a great deal can be learned about the reading comprehension process and the psychology of thinking by making subjects think aloud about definite problems. Ericsson and Simon (1993) and Garner (1987) offer the following methodological recommendations and conclusions about how verbal-reports should be collected.

1. Avoid asking about processes that are engaged in automatically and which are therefore inaccessible upon reflection. Complex, difficult, and novel tasks may provide more information than much-practiced simple tasks.
2. Reduce the interval between processing and reporting.
3. Use multiple methods to assess knowledge and use of strategies (interview questions, questionnaires, data from verbal-reports and think-alouds).
4. Avoid general questions asking subjects to provide a generalized description of their processing as this may fail to reflect processing accurately.
5. Emphasize that reporting should reflect exactly what is being thought.
6. Provide directions to subjects that encourage intermediate and final products of processing rather than descriptions of explanations of processing.
7. Use reliable categories to code verbal and think-aloud reports.
8. Recognize that there are individual differences in the ability to provide think-aloud reports and in thinking.

In essence, verbal protocol and metacognitive research has made important contributions to our understanding of reading which provide rich descriptions of ways in which younger and less successful readers differ from older and more proficient readers. We can conclude that less effective readers often have misconceptions about the reading process, fail to monitor their comprehension, underutilize effective reading strategies, and employ fewer reading strategies when reading. Skilled readers, on the other hand, know and use many different strategies in coming to terms with text. They employ both "bottom-up" and "top-down" reading strategies, use a wider range of strategies and use them more frequently, and employ metacognitive knowledge, that is knowledge and when and how comprehension and monitoring processes apply.

Classroom Implications and Future Research

Based on the findings of numerous studies, recent research in the area of reading comprehension has focused on reading-related strategies, and strategy-training studies. For the most part, such studies have found that strategy training leads to improved reading performance. Though awareness and monitoring change have been implicit components of many of the training programs, the core of this instructional work has been the teaching of text-processing strategies. The content of the instruction has been academically fundamental strategic components and the recipients of the instruction have been those learners who have failed to use reading strategies in text processing. On the basis of strategy-instruction literature, the following guidelines for effective strategy instruction in classrooms is offered.

1. Teachers must care about the processes involved in reading and studying, and must be willing to devote instructional time to them through direct strategy-instruction and modeling.

2. Teachers must do task analyses of strategies to be taught. In other words, teachers must think about how a particular strategy is best applied and in what contexts. Teachers can observe students as they read in order to determine students' strengths and weaknesses in terms of strategy use, which is turn will help in providing effective and appropriate strategy instruction.
3. Teachers must present strategies as applicable to texts and tasks in more than one content domain so that strategies can be applied in a variety of reading situations and contexts.
4. Teachers must teach strategies over an entire year, not just in a single lesson or unit allowing strategic instruction to permeate the curriculum.
5. Teachers must provide students with opportunities to practice strategies they have been taught.
6. Teachers must be prepared to let students teach each other about reading and the studying process.

They only way classrooms will become arenas for extensive strategy instruction is for such instruction to be wholly-intertwined with content-areas. In essence, failing to teach students strategies they do not use and from those they could benefit is to fail the students, to neglect to show them ways of reaching reading (Aebersold & Fielding, 1997; Garner, 1987; Pressley & Afflerbach, 1995).

Future Research Considerations

Research has also provided much information on different-age and different-ability level readers in the literature. Typically, readers in these studies read the same materials, with inferences about the development of reading processes or differences in reading processes as a

function of skill inferred from the differences in reported processes. Younger learners and less able readers would be expected to produce less complete verbal reports than older and more able readers. (e.g., older and more able readers are more verbally skilled, with verbal skill an important determinant of at least the quality of self-reports; see Afflerbach & Johnston, 1984). Also, the same text is more difficult for younger and less able readers, so that the processes associated with difficult reading are collected for some participants and the processes associated with easy reading for other participants. Again possible confounds created by the degree of automaticity of a reader processing text must be considered. Another factor to be considered in future research is the accuracy of verbal-protocol transcripts. Before verbal protocols can be analyzed, they must be transcribed. Given the importance of such data, there is clear need to the development of transcription codes and symbols for preserving the quality of spoken language when it is transcribed. Non-verbal and tone of voice information may be important and such information must be represented in analyses of self-reports. Lastly, researchers should be precise in their coding of categories if predetermined categories are not used. Pressely and Afflerbach (1995) offer a comprehensive coding scheme which can prove to be a useful starting point.

Despite the present set of limitations, reading protocol studies have provided a great deal of information about the reading process in a second language. To date, however, many questions about reading comprehension and the reading process still remain. Research needs to consider such limitations in order to lead to more refined, rigorous studies. Additional studies of reading strategies and metacognitive factors in second language reading are needed. Subsequent research must follow with additional studies of second language readers' awareness of various reading strategies and the relationships between awareness and reading ability and performance on a wide variety of tasks. Also needed are training studies on the most effective instructional

means for teaching reading strategies. Given the enormous range of research studies that are needed in this area, this field should remain a major locus of second language reading research for the next decade.

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