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ABSTRACT

A review of literature on learning strategy instruction in first and second languages focuses on the strategies of summarization, notetaking, and cognitive mapping techniques aimed at improving students' reading comprehension skills. The literature suggests that summarization is a technique that can be taught, and because it appears to be developmental, it will be most effective with older students. In addition, it could contribute to comprehension of both content and text organization in the second language. Training in notetaking has also been shown to have positive results, but to be effective, it must include sufficient modeling and practice. It may also be especially helpful for second-language students in content-area instruction. Mapping was found to be an excellent technique for classroom instruction, consistently improving reading comprehension. It is noted that individual differences in thinking and learning should be taken into account when presenting this technique. Contextualized instruction, extensive practice, and feedback are seen as essential elements for instructional effectiveness. Contains 28 references. (MSE)

Summarization, Notetaking, and Mapping Techniques: Lessons for L2 Reading Instruction

Lia Kamhi-Stein

Abstract

This paper was designed to review the literature on learning strategy instruction in L1 and L2. Specifically, this paper focused on summarization, notetaking, and mapping techniques which are aimed at improving students' reading comprehension skills. An analysis of the literature revealed that both native speakers of English and language minority students appear to benefit from the teaching of summarization, notetaking, and mapping techniques. Finally, the studies reviewed for the purposes of this paper suggest that for students to incorporate the strategies in their repertoires, there needs to be intensive modeling and practice.

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Background

The numbers of language minority students in the United States are growing fast. The impact of such language minorities is especially being felt in institutions of higher learning where considerable numbers of language minority students achieve test scores that place them in pre-baccalaureate developmental reading courses (California State University Office of Public Affairs and Analytical Studies, 1992). In this context, the most common approach to the teaching of reading involves the "practice of basic skills" (Shih, 1992). Those who advocate this approach believe that by promoting the practice of discrete skills, students will become good readers and will ultimately be able to face the requirements in content-area classes.

In contrast, a different approach to the teaching of reading involves the teaching of learning strategies. Those who advocate the teaching of learning strategies assume that such instruction affects the students' encoding process. In turn, this improved encoding process is expected to affect the students' learning outcome and performance (Weinstein and Mayer, 1986).

Weinstein and Mayer (1986) identified eight categories of learning strategies. Two categories are of particular importance for the teaching of reading and writing. They are: complex elaboration strategies and organizational strategies for complex learning tasks. Summarizing and notetaking can be classified within the category of elaboration strategies for complex learning tasks. In this context, "the learner actively searches for prior knowledge and transfers this knowledge to working memory" (Weinstein and Mayer, 1986, p. 317). Then, the learner builds the connections between incoming information and prior knowledge. In contrast, mapping, also called networking, can be classified within the category of organizational strategies for complex learning tasks. In this context, the learner "actively builds connections between ideas in the information that have reached working memory" (Weinstein and Mayer, 1986, p. 317). This internal-connection building involves the development of an outline or schema.

Research in the area of L1 (first language) reading has emphasized the importance of learning strategy instruction (Shih, 1992). By contrast, this research has not had much impact in the context of L2 (second language) research or teaching. However, if developmental reading courses are expected to serve the needs of at-risk language minority students, then more attention should be given to the teaching of strategies which would help students become more independent learners.

Definition of Terms

This section will include a definition of the terminology included in the review of the literature.

Summarizing: Summarizing is a synthetic strategy that requires readers to determine the degree of importance of the information included in the text (Hayes, 1989). Summarizing requires students to synthesize the information and, as Dole, Duffy, Roehler, and Pearson (1991) explain, "create a new coherent text that stands for , by substantive criteria, the original text" (p. 244).

Notetaking: For the purposes of this paper, notetaking will be used to mean a strategy which is designed to teach students to " a) distinguish between superordinate and subordinate information, b) abbreviate words, c) paraphrase in one's own word, and d) use an outline format" (Weinstein and Mayer, 1986, p. 320).

Mapping: Mapping is a practical, visual way to help students see the connections among the ideas in the passages to be read or studied. Mapping is a term that "embraces a variety of strategies designed to display graphically information within categories related to a central concept" (Johnson, in the foreword to Heimlich and Pittelman, 1986, p. v). Categories are visually shown in a diagram or map (Carell, Pharis, and Liberto, 1989).

Purpose of this Paper

This paper will review the literature on summarizing, notetaking, and mapping techniques and their effects upon students trained in their use.

Review of the Literature

While this section is intended to be comprehensive, it should be seen as a preliminary overview of the literature.

Summarizing

To review, summarizing can be classified as an elaboration strategy for complex learning tasks. Other elaboration strategies include paraphrasing and question answering. The objective of these activities is to integrate new information with the students' prior knowledge ((Weinstein and Mayer, 1986).

Summaries can be of two kinds, reader-based and text-based (Hill, 1991; Hidi and Anderson, 1986). Reader-based summaries are those that students write for a particular audience to read. Examples of reader-based summaries are summaries of articles, books, or stories. In contrast, writer-based summaries are those that only the student reads in order to be able to promote comprehension and recall important information.

Hidi and Anderson (1986) analyzed the operational procedures used to summarize and suggested four requirements for writing a summary. They are comprehension, evaluation, condensation, and frequent transformation of ideas. The writer's task in summary writing, as Hidi and Anderson (1986) explain, is not only to originate and organize ideas but also to choose what to include, eliminate and reorganize. Summarizing is more complex than simple recall. As Hidi and Anderson (1986) state, summarizing reflects the

reader's ability to comprehend text information and organization.

Summarization skills appear to be developmental in nature. Research studies comparing college and older high school students indicate that high school and college students outperform younger students in their propensity to plan ahead, in their sensitivity to find the main idea in the text, and in their ability to condense more idea units into the same number of words (Hill, 1991; Brown, Day, and Jones,1983; Brown, Smiley, and Lawton, 1978). Brown, Day, and Jones (1983) conclude that the students' ability to provide an adequate written summary of a lengthy text is a "late-developing skills that continues to be refined throughout the school years" (p. 977).

Winograd (1984) examined the possibility that eighth-grade students' difficulties in summarizing were linked to a deficit in strategic skills. Results of the study indicated that most of the students were aware of the task demands of summarization. However, good and poor readers differed in what they considered important, in what they included in their summaries, and how they transformed original texts. The study suggested that when comprehension difficulties are encountered, teachers should assess the students' use of strategic skills and provide appropriate training.

Bensoussan and Kreindler (1990) investigated whether the reading comprehension of English as a foreign students who were trained to summarize improved more than that of

students who responded to short answer-questions. Since the reading comprehension of all students increased significantly, it was difficult to determine whether either summarization training or answering the questions was a major cause of improvement.

In another study involving foreign speakers of English, Kozminsky and Graetz (1986) attempted to determine whether second language speakers (L2) would be more less efficient in writing summaries. As a result of the investigation, it was found that L2 speakers focused more on the word level than did first language speakers. However, L2 summaries contained more abstraction operations when compared to L1 summaries which contained more copy operations. Kozminsky and Graetz (1986) concluded that L2 students should be trained in writing summaries at the paragraph level rather than on the global level of the text. This study presents two problems. First, if L2 students focused at the word level, how did they produce more abstraction operations? Second, this study's rationale appears to be based on the idea that because students are not proficient in a second language, they are not strategic learners. In contrast to this assumption, research in the area of bilingual education (see Crawford, 1989 for a complete discussion) supports the notion that skills are transferred from L1 to L2, leading to the idea that if students are strategic learners in their first language, they will transfer the strategies when using or learning L2.

A different point of view is presented in a study by Garner (1984) who investigated whether 12 teachers who were expected to provide explicit summarization instruction to K-12 students actually engaged in providing summarization training. The results of the study indicate that only two teachers in the group discussed more that one of the five summarization rules assessed. This study has important implications because, before implementing strategy instruction in the classroom, staff development programs should train teachers in the techniques they will later present in class.

Finally, according to Wi[illegible]rad, 1984; Taylor and Beach, 1984; Brown, Day, and Jones,1983; and Day, 1980) students can be trained how to summarize as an effective technique for improving students' comprehension.

Notetaking

Among the various elaboration strategies for complex learning, generative notetaking is another technique. There appears to be a debate regarding the value of notetaking. While some researchers argue that the value of notetaking lies in its encoding function, others believe that the value of notetaking lies in the fact that it provides students with opportunities for transforming the information into more meaningful and usable forms (DiVesta and Gray, 1972).

Peck and Hannafin (1983) and Carrier and Titus (1981) investigated the results of pretraining students to use a

notetaking strategy, and compared the results to those of a group of students who did not receive pretraining in notetaking. Both Peck and Hannafin (1983) and Carrier and Titus (1981) found that students who had been pretrained in notetaking performed better on a test than students who did not receive training in notetaking. With these results, it would be possible to support the idea that training students in how to take notes appears to be a useful strategy for promoting higher student achievement. However, Peck and Hannafin (1983) present an important consideration which should be taken into account. In their study, Peck and Hannafin (1983) noticed that while instructed notetakers recorded more information, they were not necessarily more efficient in identifying important information. The researchers concluded that structured notetaking requires substantially more time than is often provided. Additional training should then, focus on notetaking mastery, including different aspects of notetaking like quality, quantity, and structure of recorded notes.

In a study whose results were contradictory, Hale (1982) investigated the effects of notetaking on students' delayed retention. Contrary to other studies by Doctorow et al. (1978), Hale (1982) found that delayed retention was not facilitated by notetaking. However, by comparing these results to those of Carrier and Titus (1981), Hale's contradictory findings could be explained by hypothesizing that, while the students had to take notes, they had not

received any specific training in notetaking techniques. Therefore, the students' performance could have been undermined as a result of the lack of direct training, or as Spires and Stone (1989) hypothesize, by a lack of understanding of the material presented resulting from a lack of self-monitoring during notetaking.

Spires and Stone (1989) support the idea that taking notes promotes higher achievement. Additionally, they hypothesize that the reason why taking notes does not necessarily ensure comprehension of the material may be that notetakers do not always self-monitor while they are taking notes. For this reason Spires and Stone (1989) developed a process approach to notetaking instruction. This approach, called Direct Notetaking Approach (DNA) is based on three instructional principles: a structured format for taking notes commonly referred to as the split page method, a self-questioning strategy for monitoring levels of involvement before, during, and after notetaking, and direct explicit teaching of the notetaking process adapted for notetaking instruction from Pearson's model (1985) for teaching reading comprehension.

In a study that tested the utility of training students in DNA, Spires and Stone (1989) concluded that students who were trained in DNA were not only more actively involved with a lecture and monitored their level of involvement before, during, and after notetaking, but they also retained more information than those students who did not receive

notetaking strategy instruction. Therefore, Spires and Stone (1989) concluded that teaching this strategy is an effective way of helping students develop independence in notetaking.

Mapping

By using Weinstein and Mayer's (1986) framework for classifying learning strategies, mapping or networking could be considered or regarded within the organizational strategies for complex learning tasks. Training students in the use of mapping would help them organize the information included in materials to be read or studied.

Mapping usually involves a brainstorming session in which students verbalize associations on a topic or key concept as the teacher writes them on the board. The teacher then facilitates the students discussion to organize or categorize the associations into the form of a map. This activates the students' background knowledge of the topic and helps students focus on the relevant content schema by preparing them to understand, evaluate and assimilate the information to be read. Before reading, students prepare a first map which is extended after students have done the reading. As a postreading activity, semantic mapping helps students recall, organize, and represent graphically the information read (Heimlich and Pittelman, 1986; Carrell, Pharis, and Liberto, 1989).

Peresich, Meadows, and Sinatra (1990) investigated the effects on rural high school students in Mississippi of the training of semantic mapping as a way to improve the students' reading comprehension and writing skills. For the successful implementation of semantic mapping in the classroom, classroom teachers were trained first in the use of semantic mapping. Then, they provided students with maps to show students the way in which the ideas in the passage connected. After this preliminary step, teachers assigned the reading selection to the students who, after the reading was completed, were faced with blank maps. Students were guided in the use of semantic mapping by the teacher, who had students either focus on the main idea first, or complete one of the sections of the map. After teachers provided students with this model, students were asked to use cognitive mapping in a more open way. The implementation of mapping, according to Peresich, Meadows, and Sinatra (1990) resulted in a dramatic increase of scores for those students who had to take the Basic Skills Assessment required by the state of Mississippi. Similarly, Sheldon (1984), compared the effects of training nine-year old students to understand a reading passage by using semantic mapping and answering multiple choice questions. The study concluded that the students trained in semantic mapping made considerable reading gains over those who had received training in questions and answers. Additionally, Sheldon (1984) found that poor readers' scores were

considerably enhanced by being trained in semantic mapping. This study has important implications because it suggests that children trained to use mapping strategies employ additional procedures for extracting meaning and developing more flexible reading strategies.

Sheldon's (1984) idea that semantic mapping helps students extract meaning from the text is confirmed by Reutzel (1984). Reutzel (1984) conducted an investigation to test the effects of training in the use of semantic mapping on students' comprehension in comparison to students who were trained in answering questions. After providing students with training on semantic mapping and answering questions, students were given questions to reproduce the story. As a result of this study, Reutzel (1985) concluded that students trained in semantic mapping were better in presenting the story and in making connections between the different elements of the story. This study has important implications for the classroom because, very often, students fail to see the connection among different parts of a text. Therefore, because of this lack of in-depth understanding, students have to resort to studying word by word.

In a study that investigated the effect of training L2 students in the use of mapping techniques, Carrell, Pharis, and Liberto (1989) concluded that while mapping techniques enhanced the students' reading comprehension, adult students of ESL would benefit from the inclusion of explicit, comprehension-fostering strategy training. However, the

study concluded that such training should be varied to accommodate individual students' differing learning styles. While this study has important implications for the classroom, in the sense that teachers should try to accommodate to individual differences in learning, this does not seem easy to implement in a classroom with large numbers of students.

Discussion and Conclusion

By analyzing the studies presented in the previous section, it would appear that summarization is amenable to instruction. However, several considerations should be made. First, since summarization skills appear to be developmental in nature, it would seem more appropriate to teach it to older students, who would probably benefit more from summarization training.

Second, answering questions and answers regarding a text would only promote recall. In contrast, summarizing would provide students with opportunities for comprehending, evaluating, condensing, and transforming ideas (Hidi and Anderson, 1986). In the context of an ESL or bilingual class, students would be expected to gain an improved understanding not only of text organization in English, but also of the information included in the text.

As in summarizing, it would appear that training students in the use of notetaking strategies promote positive results. However, it should be noted that when

introducing not only notetaking, but also other techniques for improving students' information processing strategies, sufficient modeling and practicing should be provided so that students can incorporate the strategies in their repertoires.

While notetaking appears to be useful when working with L1 students, I believe it appears to be particularly appealing for L2 university students who could benefit from notetaking instruction in the context of content-area instruction.

When analyzing the studies on mapping techniques, it appears that mapping is an ideal technique to be introduced in the classroom. All the studies reviewed for the purposes of this paper were in agreement that there was improved performance by students who were trained in mapping techniques. In fact, all the studies concur that mapping enhanced students' reading comprehension. However, it is important to note that Carrell, Pharis, and Liberto (1989) indicate that individual differences in thinking and learning should be taken into account when presenting this technique.

Summarizing, notetaking, and mapping are three techniques which can be explicitly taught in developmental reading courses for both L1 and L2 students. Finally, contrary to established university programs which offer short seminars and train students in the use of different learning strategies in a decontextualized manner (Weinstein

and Mayer, 1986), several studies presented in this paper emphasize the importance of providing sufficient modeling, practice, and feedback by offering students contextualized instruction and extensive practice.

BIBLIOGRAPHY

Bensoussan, M., Kreindler, I. (1990). Improving advanced reading comprehension in a foreing language: summaries vs. short-answer questions. Journal of Research in Reading, 13(1), 55-68.

Brown, A.L., Day, J.D., Jones, R.S. (1983). The development of plans for summarizing texts. Child Development, 54, 968-979.

Brown, A.L., Smiley, S., Lawton, S.C., (1978). The effects of experience on the selection of suitable retrieval cues for studying texts. Child Development, 49, 829-835.

California State University Office of Public Affairs and Analytical Studies. (1992). University Reports.

Carrell, P., Pharis, B.G., Liberto, J.C. (1989). Metacognitive strategy training for ESL reading. TESOL Quarterly, 23(4), 647-673.

Carrier, C, Titus, A. (1981). Effects of notetaking pretraining and test mode expectation on learning from lectures. American Educational Research Journal, 18 (4), 385-397.

Day, J.D. (1980). Teaching summarization skills: a comparison of training methods. Unpublished doctoral dissertation, University of Illinois.

Crawford, J. (1989). Bilingual education: History, politics, theory, and practice. Trenton, N. J.: Crane Publishing Co., Inc.

DiVesta, F.J., Gray, S.G. (1972). Listening and note taking. Journal of Educational Psychology, 63, 8-14.

Divesta, F.J., Gray, S.G. (1973). Listening and note taking II. Journal of Educational Psychology, 64, 278-287.

Dole, J., Duffy, G., Roehler, L., Pearson, P. (1991). Moving from the old to the new: research on reading comprehension instruction. Review of Educational Research, 61(2),239-264.

Garner, R. (1984). Rules for summarizing texts: is classroom instruction being provided? Journal of Educational Research, 77(5), 304-311.

Hale, G. (1983). Students' predictions of prose forgetting and the effects of study strategies. Journal of Educational Psychology, 75(5), 708-715.

Hayes, D. (1989). Helping students GRASP the knack of writing summaries. Journal of Reading, 33(2), 96-101.

Heimlich, J.E., Pittelman, S.D. (1986). Semantic mapping: classroom applications. Newark, DE: International Reading Association.

Hidi,S., Anderson, V. Producing written summaries: task demands, cognitive operations and implications for instruction. Review of Educational Research, 56, 473-493.

Hill, M. (1991). Writing summaries promotes thinking and learning across the curriuculum-but why are they so difficult to write? Journal of Reading, 34(7), 536-539.

Johnson, D.D., Pittelman, S.D., Heimlech, J.E. (1986). Semantic reading. The Reading Teacher, 39, 778-783.

Kozminsky, E., Graetz, N. (1986). First vs. second language comprehension: some evidence from text summarizing. Journal of Reading Research, 9(1), 3-21.

Peck, K., Hannafin, M. (1983). The effects of notetaking pretraining and the recording of notes on the retention of aural instruction. Journal of Educational Research, 77(2), 100-111.

Peresich, M., Meadows, J., Sinatra, R. (1990). Content area mapping for reading and writing proficiency. Journal of Reading, 33(6), 424-432.

Reutzel, D. (1985). Story maps improve comprehension. Reading Teacher, 38(4), 400-411.

Sheldon, S., (1984). Comparison of two teaching methods for reading comprehension. Journal of Research in Reading, 7(1), 41-52.

Shih, M. (1992). Beyond comprehension exercises in the ESL Academic reading class. TESOL Quarterly, 26(2), 289-318.

Spires, H.A., Stone, P. (1989). The directed notetaking activity: a self-questioning approach. Journal of Reading, 32, 36-39.

Taylor, B., Beach, R. (1980). The effects of text structure on middle-grade students' comprehension and

production of expository text. Reading Research Quarterly, 19(2), 134-146.

Weinstein, C.E., Mayer, R.E. (1986). The teaching of learning strategies. In M.C. Wittrock (Ed.), Handbook of Research on Teaching. (pp. 315-327). New York: MacMillan.

Winograd, P.N. (1984). Strategic difficulties in summarizing texts. Reading Research Quarterly, 19(4), 405-425.