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ALTERNATIVE USES OF NETWORKING

Kay Camperell, Lawrence L. Smith

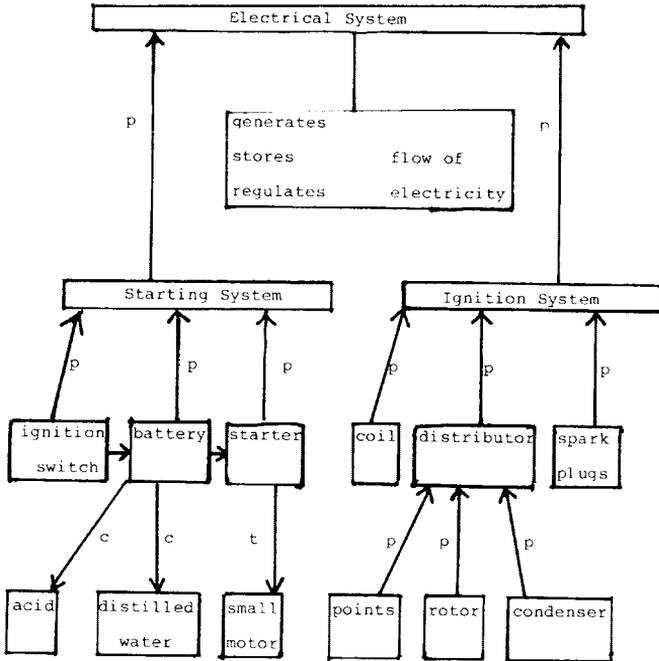
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In secondary schools, many remedial reading teachers are beginning to work with texts students use in their content area classes. Reading teachers are doing this because they feel that students do not transfer skills they learn in reading classes to help themselves understand and study content area texts. Many reading teachers, however, are not always familiar with information in content area texts, especially if they use books from vocational technical areas. One way reading teachers can begin to familiarize themselves with these texts is to create network diagrams or maps of the information (Dansereau, 1978; Anderson & Armbruster, 1980). We have found that such diagrams not only help us learn new information but also provide us with a tool for planning instruction.

Networking and mapping are note-taking procedures which involve representing ideas from texts in some sort of symbolic or graphic diagram. These procedures are different from outlines in that to create a diagram readers must organize and reorganize ideas abstracted from a text and then depict them as clusters of related ideas. Lines and arrows are used to show relationship among ideas and each relationship on the diagram is labeled. Major or superordinate ideas in outlines are distinguished from supporting details through indentation and use of different types of letters and numerals. Important ideas appear on the left of a page. With maps or network diagrams, however, important ideas are placed on the top of a page. Lines rather than letters and numbers are used to link less important ideas to the major ideas they support. For example, the following passage has been partially diagrammed in Figure 1. The superordinate idea is the electrical system. Major subordinate ideas are descriptions of the parts of which this system is made. Each subordinate idea is further divided into subparts. Lines with arrows are used to depict the flow of electricity through the parts of a starting system. This is simply one way to diagram the passage, and each teacher's diagram might differ depending upon his or her familiarity with the topic.

The sample passage:

The electrical system generates, stores, and regulates the flow of electricity in a car. It is made up of several functional systems that make a car start and keep it running. The starting system provides an electrical current that flows along wires. These



p = part of c = contains
 l = leads to t = type of

wires lead from the ignition switch to the battery and from the battery to the starter. The battery is a box filled with acid and distilled water. It stores electric current that turns the motor, and fires the spark plugs. The starter is a small motor that makes the crankshaft turn so that pistons fire and the engine starts running.

Another part of the electrical system is the ignition system. It consists of a coil, distributor, and spark plugs. The coil is a metal cylinder with wires coming out of it. It amplifies small amounts of electricity voltage from the battery into large amounts needed to fire the spark plugs. The distributor contains the points, rotor, and condenser. The points are two pieces of metal that can touch and draw apart. The points control the flow of electricity to the spark plugs so that current reaches the plugs at the correct time and with the right intensity.

Researchers suggest that creating these diagrams engages readers in learning strategies that are more effective than those involved in outlining because readers have to attend to and process relationships among all of the idea in a passage (Anderson & Armbruster, 1980). Outlines, on the other hand, require readers to distinguish only among superordinate and subordinate relations. Other types of relationships such as compare/contrast relations, temporal relations, or causal relations are not specified.

Results of studies designed to test the effects of networking or mapping on recall and recognition measures are inconclusive (Holly, et al, 1979; Dansereau, et al, 1977; Armbruster & Anderson, 1980). Moreover, in our efforts to teach networking to junior college students, we have observed that extensive amounts of instructional time are needed to teach the strategy to academically unsuccessful students. The students we have worked with lack even such a prerequisite skill as the ability to paraphrase. Thus, we hesitate to recommend teaching a strategy like this to students in remedial classes. Teachers, however, have been successful students in the past and can easily learn a diagramming procedure. All they have to do is modify the notetaking skills they already use.

Developing diagrams from texts in which the content is not familiar can assist teachers in understanding ideas that may be new to them. Even if teachers are familiar with the ideas in a content text, creating such diagrams enables teachers to identify places in the text which may pose learning difficulties for students. More importantly, however, the diagrams provide a tool teachers can use to design instructional activities. We have found such diagrams especially helpful in creating graphic organizers (Barron, 1979) and developing various types of questions.

Major concepts and relations among concepts can be clearly depicted in a diagram. Teachers can then use that information to develop a graphic organizer for lessons. These organizers can be employed to (1) discuss and clarify ideas before students read about them, (2) focus student attention on the organizational structure of reading assignments, or (3) provide a type of concept guide students can complete as they read the assignments. Teachers can also use the organizers to model recitation strategies for students and monitor the rehearsal strategies they employ to study for tests.

As teachers create a diagram, they have to analyze all the explicit and implied ideas and relations among ideas in a text. In so doing, teachers have a basis for developing various types of questions to use in reading guides or class discussions. Pearson and Johnson (1978) suggest that teachers should be aware of the data-sources students draw on to answer comprehension questions. They recommend that teachers classify questions according to whether or not the expected "correct" response is textually explicit, textually implicit, or scriptally implicit. To develop such questions teachers must know which information is implied

or directly stated in a text and when students should use prior knowledge (scripts) to derive their responses. The diagram provides a simple tool teachers can use to develop such questions.

Teachers who use a content text in remedial settings find that students appreciate receiving help learning. Students actively participate in reading classes when the information they are expected to read is information that will help them achieve their academic or vocational class. Content area teachers also appreciate the extra help students receive. When content teachers see low-achievers performing more successfully in their classes, they begin to perceive the reading teacher as a colleague who supports their efforts to teach students who have difficulty learning.

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