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ABSTRACT

Based on the idea that teachers and researchers generally agree that students should learn how to study effectively and efficiently, this concept paper reviews the research in study skills; points out faulty assumptions about study skills as well as ineffective classroom practices; outlines some implications for instruction; and presents study skill strategies that show promise in helping students develop the skills for themselves. The skills the paper focuses on are good listening techniques, structural notetaking, visual learning, memory techniques, test-taking strategies, and correct reading rate. An 18-item annotated bibliography is attached. (NKA)

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Concept Paper

Oregon Department of Education

Number 9

STUDY SKILLS: THE KEY TO LEARNING

INTRODUCTION

Teachers and researchers generally agree that students should learn how to study effectively and efficiently.

Teaching and reinforcing the use of these skills is the responsibility of all teachers if they want students to have optimum understanding of their various subjects.

Children who master study skills early as a part of their basic educa-

tional program have distinct advantages in elementary school, high school, college and throughout their lives (Devine, 1989).

Study skills "is a general term for those techniques and strategies which help a person read or listen for specific purposes with the intent to remember" (Harris and Hodges, 1981). Graham and Robinson (1984) define study skills as "specific abilities which students may use alone or in combination to learn the intent of a curriculum on their own."

Many teachers are providing instructional activities to students before, during and after listening to a presentation or reading a passage in order to help them understand and retain what they encounter (Moore and others, 1989). However, teachers and researchers do not believe that what is happening in the classroom has caused students to improve their studying techniques. Students are not internalizing the skills to the point where they can use them in situations away from the classroom (Simpson, 1983; Anderson and Armbruster, 1984).

SUMMARY OF RESEARCH

A New Approach Toward Study Skills:

Some researchers maintain that until teachers take a different approach in teaching study skills, the situation will not change. They must refocus and plan their teaching from a different base or point of view. Teachers should seriously think through the following premises (Simpson, 1983):

1. Teachers must include classroom practice and training in how students develop their own learning strategies. This is quite different from giving students a list of study skills to use in their assignments. Teachers and students must drop the notion that there is a "magic" list of learning strategies that will guarantee all students to be independent learners. Any system of study skills will pay off if it leads students to:
 - a. Pay attention to the material
 - b. Reconstruct the problem mentally
 - c. Move beyond the particular knowledge to a general application

"Children who master study skills early as a part of their basic educational program have distinct advantages in elementary school, high school, college and throughout their lives."

2. Learning study skills is an individualized interactive process. Teachers cannot teach how to study in a general sense. Students

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must learn how to analyze their own personal patterns of thinking, how to pinpoint what it is the task stresses, and how to choose and apply certain study skill strategies for specific tasks and/or assignments.

Though primarily concerned with reading, Anderson and Armbruster (1984) agree with Simpson (1983) concerning study skills in general. They see students really learning study skills only after they have determined the reasons for doing so and have developed the ability to make decisions about the best method to use. These authors concluded, also, that some study skills may have more potential than others for the more difficult tasks in understanding and/or remembering. Outlining, networking, mapping, and schematizing are the particular skills cited. They see these as most likely to produce the highest learning outcomes, if internalized by the student. Unfortunately, these skills are the most costly in terms of time and energy for the teachers to teach and the student to learn.

"Students must learn how to analyze their own personal patterns of thinking, how to pinpoint what it is the task stresses, and how to choose and apply certain study strategies."

Faulty Assumptions About Study Skills

Estrin and Thomas (1987) reiterate what other researchers stated about teachers needing to concern themselves more with the process of how students learn study skills. However, he adds that many teachers and students must eliminate the following fallacious notions they have about studying:

- Teachers think that study skills are learned easily and can be taught quickly. This is not true for there are many skills: sequencing, outlining, notetaking, locating main and sub-points, etc. Knowing which skill to use, how to use it, and when to use it is not a simple task.
- Teachers think that they cannot take time out of their content instruction period to teach study skills. To some degree, this does pose a problem for content area teachers. At the same time, it must be remembered that if students can learn independently, they may do work outside of class that will make it easier for the teacher to have a successful class. Add to this the fact that if a student has some success studying on his own, as well as doing

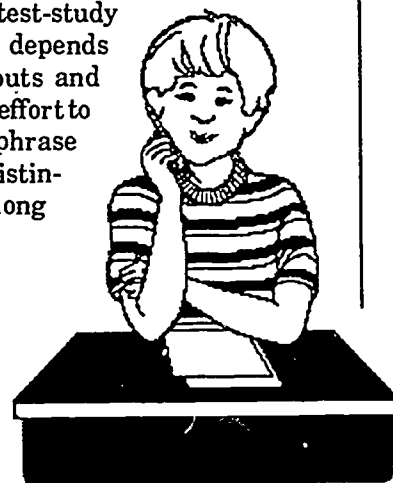
well in the classroom, his own self-esteem will grow and his grades will improve.

- Students think that reviewing the content over and over is the only way to study. This process can be the poorest way to study. Students should have other strategies as well. A student who can study material, make the ideas personally meaningful, and connect one main point to another will be much better off.
- Students think studying should be done only just before the big test. Crash studying may help in terms of rote recall; however, if the test involves a comprehension of relationships, as well as long-term retention, periodic study of materials is the better route.
- Teachers think there is one best way to study and fail to teach other methods. They often overlook students' different learning styles.
- Students think that their poor performance is a sign of low ability. Associating poor performance and low ability does not take into consideration the possibility that good study habits could very well change that relationship.

Ineffective Classroom Practices

Estrin and Thomas (1987) recommend also that teachers note carefully some of the following classroom practices which tend to discourage good study habits. For example, sometimes teachers may, through learning aids, overcontrol student progress. They provide too many handouts, summaries, and test-study questions. The student depends completely on the handouts and does not make a personal effort to select main ideas, paraphrase difficult material, or distinguish relationships among ideas.

Teachers who give too many multiple choice or fill-in-the-blank tests undermine the possibility of students developing good study habits. Tests of this nature require only recall. But they do not do much to encourage students to assimilate and use materials from readings, classroom discussions, lectures, and demonstrations. Teacher assignments often require students to employ only rote methods of study rather than deeper, integrative



methods. The student merely recycles information rather than interpreting it or pinpointing relationships among items of information.

Teachers mistakenly think they are promoting studying when they offer the following generalities to students:

- "Study the material."
- "Analyze the short story."
- "Get a good grip on your subject."
- "Concentrate on the second and fifth chapters."
- "You have two days to prepare your first draft."

None of these instructions are of value to the student unless he or she has already developed study strategies. What, then can the teacher do for those who do not have those strategies? The teacher can design class activities designed to strengthen student abilities to:

- Regulate time and develop concentration power.
- Know and practice particular study strategies.
- Become motivated from any success in learning how to study.

Needed Research

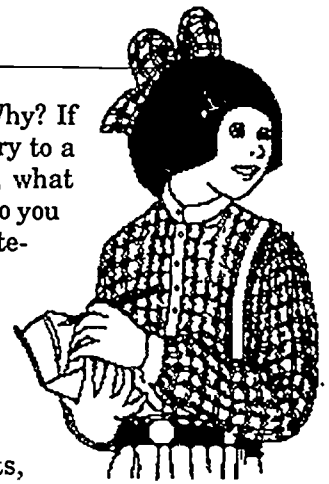
Anderson and Armbruster (1984) see a need for further research—research that focuses on the way certain study skills' instruction might be coordinated with various instructional programs, subject areas, and different student populations. The questions to be asked are many: How is studying language mechanics different from studying English literature? How is listening to a story different than listening to a teacher's instruction? How is writing a concise summary different from writing an essay of comparison? How should a student prepare for an in-class essay test compared to a take-home test? Research in study skills is in its infancy. No doubt, much more will be said by research about study skills. In the meantime, teachers are urged to use what is available and rethink their instructional approaches.

IMPLICATIONS FOR INSTRUCTION

Beginning in the primary grades, children can understand the purpose for study, begin establishing good study habits, have some knowledge of the functioning of memory, and learn ways to remember better. Some ideas for teaching these four topics suggested by Devine (1989) are:

- Ask questions like "What points are impor-

tant in the selection? Why? If you had to tell this story to a friend in a few words, what might you say? Why do you need to study some material rather than just read it for enjoyment?"



- Make sure every child has copied the assignment and keeps a notebook of assignments, notes and progress.
- Help children to break tasks down into smaller segments.
- Discuss how to handle distractions like television, friends and family members.
- Explain that they cannot remember everything that is taught, but if they want to remember more, they must make deliberate attempts to do so.
- Discuss how once you learn something well, the information will be there forever, even though you may have trouble recalling it. The more meaningful the information is to you, the greater the likelihood you will remember and be able to retrieve it.

As students move on into the middle grades, more attention should be given to self-regulation of study time, ways to study and the role of anxiety in studying and test-taking. Estrin and Thomas (1987) offer the following suggestions for good class activities related to these topics:

1. Provide direct instruction and feedback in the classroom about ways to study, and the strengths and weaknesses of each strategy. Time should be allowed for practice on each strategy. The teacher can address what can be done to facilitate studying. For example, discussion might involve how teacher directions and explanations can be made clearer, or when information about tests or assignments should have advance notice.
2. Discuss self-regulation of time and effort. Talk about techniques one can use to maintain concentration. Teachers might model how they do it. The teacher should give feedback on how well students are concentrating. Students will need teacher instruction not only on study strategies, but also on how much time to spend with each strategy for each task.

3. Set up an environment so students experience a minimum of anxiety. They should have open discussion about the relationship of self-esteem and success. This kind of discussion and activity, claims Burley (1981), is particularly significant to students who fail to recognize the need to become proficient in test-taking skills. More often than not they are the ones who perform poorly on tests, partly because of test anxiety. They are usually frustrated over their academic performance and develop very low levels of self-esteem.

During the past five years education institutions and commercial companies have flooded the market with study skills resource materials. Most of them are basically teacher-directed activities. The following study skill strategies show considerable promise in that the instruction challenges the student to develop the skill himself.

"The more a student comprehends how a presentation is organized, the more he is apt to make sense of the presentation."

Learning The Techniques Of Good Listening:

In the primary grades children should be taught the difference between "hearing" and "listening." As they move into the middle grades they should be taught the following good listening habits: (The Study Skills Group, 1980-1986)

1. When you're listening, try to make sense of what the speaker is saying.
2. Try to connect what you're hearing with what you already know.
3. Try to picture in your mind what is being said.
4. Listen for words that tell you about the order in which events occur.
5. Listen to what the speaker has to say first, then decide what you think or feel about it.
6. Try to retell what you've heard in your own words.
7. Try to practice your listening skills every day.

To listen actively means knowing what one is hearing. One way to know what one is hearing is to try to figure out how the presentation is organized. When a student determines how a presentation is organized, that understanding guides his listening. In fact, the more a stu-

dent comprehends how the presentation is organized, the more he is apt to make sense of the presentation. The teacher can help students by having them practice hearing presentations and analyzing these presentations for organization. The selections read should cover the following common patterns of organization: (The Study Skills Group, 1980-1986)

1. **Description or Narration:** a detailed story about someone or something, often in numerical order.

Example: *As the morning sun rose, Dotson peered through his binoculars, watching the fishing boat sail around the curving shoreline into the cove.*

2. **Cause and Effect:** A reason for something or the effects of actions.

Example: *Today we will consider the following: how does computer packaging contribute to pollution?*

3. **Comparison/Contrast:** Indicates how two or more things are alike and/or how they are different.

Example: *General Lee and General Grant represented two entirely different types of Americans.*

4. **Definition:** Explains the meaning of something.

Example: *What do we mean by the term "democracy?"*



5. **List:** Presents a series of details or ideas.

Example: *As we look at student performance, three basic student needs emerge time and again.*

6. **Sequence/Time:** Refers to the order in which events take place.

Example: *Let us trace the events that led to the fall of Ferdinand Marcos in the Philippines.*

When students are comfortable in recognizing how a presentation is generally organized, they can begin to ask themselves the right questions. Since the student can think three times faster than the speaker can talk, the teacher can give students practice presentations wherein they use that extra time to answer the following questions:

1. What specifically is the main point of the speaker's presentation?
2. How is the speaker supporting his or her thesis?
3. In what ways do the speaker's main ideas and supporting points make sense to me?
4. What kind of notes will help me remember this presentation?

Taking Structured Notes

Smith and Tompkin (1988) maintain that teaching students to take good notes offers four benefits:

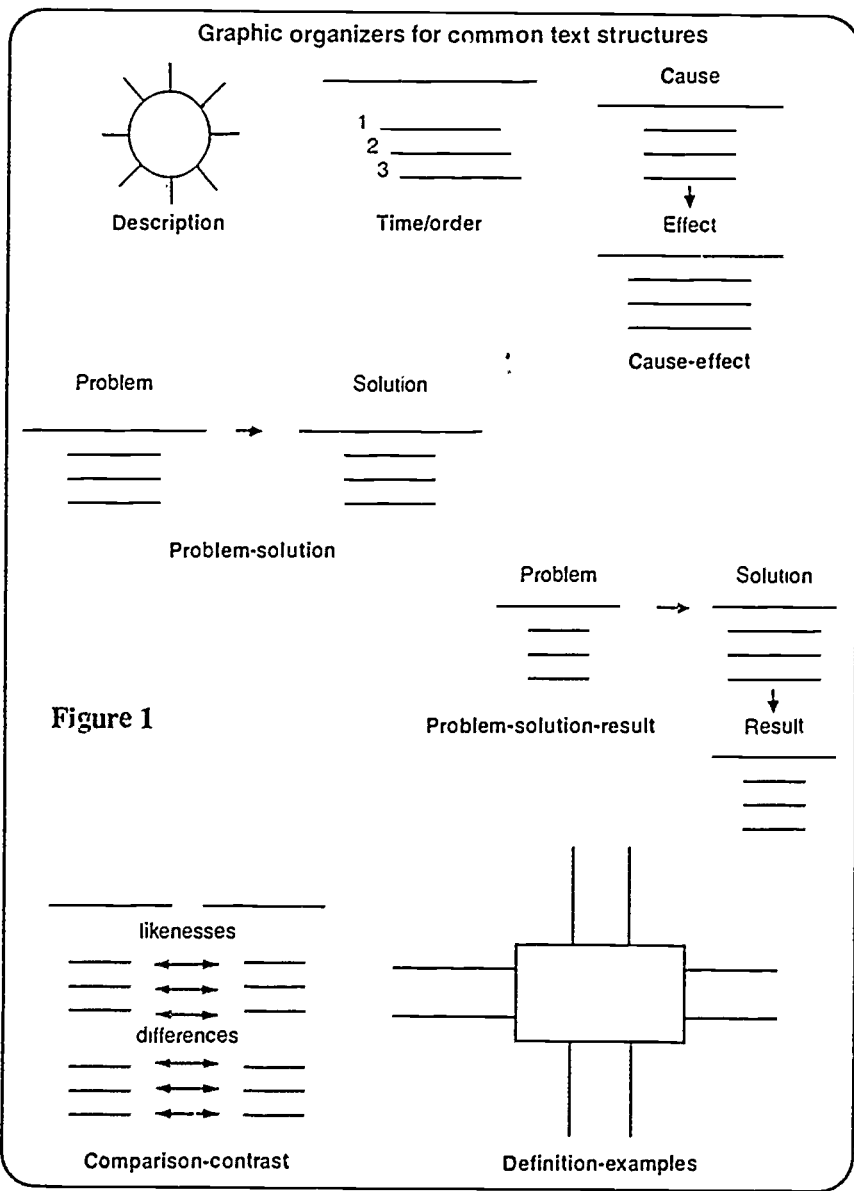
1. Students must read the material and select important ideas to put in notes.
2. Students who write notes usually include comments and examples that are actually connecting their own knowledge to new information.
3. As students take notes they are absorbing the content more deeply, increasing the possibility of comprehension and retention.
4. The notes themselves become a permanent reference available for review.

Slater (1985) suggests that students use organizational patterns of expository text as the basis for organizing the main ideas in their notes. It appears that students whose notes follow a text's structure encode information more easily than do students who do not take notes or students whose notes do not reflect the organization of the text. Students need to know the graphic representation of the organizational structures to do this type of notetaking. Smith and Tompkin (1988) describe these in Figure 1.

These structures should be taught beginning with the more obvious and familiar and moving to the more abstract: Time/order; comparison/contrast, problem-solution, problem-solution-results, cause and effect, description and definition.

Example: *Suggestions for sequencing the instruction are recommended as follows:*

1. Discuss the purposes for taking notes.



2. Talk about the difference between content and structure. Students must see that structure is the shape of the selection. Content is the substance or actual thought of the article. The teacher introduces the time/order structure through examples of simple short passages. The class looks for sentences, phrases and cue words that indicate the kind of structure being used.
3. When this is understood, students are ready to use a graphic organizer. Have students draw graphic organizers for the particular structure used. If, for example, they are beginning with time/order, they will use that organizing pattern—writing the main idea and details from the passage on to the organizer to complete it. Point out that they will be creating their own notes in this form.
4. Have students continue practicing by working with all the structures—looking for main ideas and details. Have considerable feed-back from students during the instruction. Students should be able to defend why they identified segments as representing that structure and why they included particular information on that organizer.
5. Have students work in pairs taking notes on new material—preferably with some obvious and not so obvious cued passages.
6. Move to longer passages, letting students work in pairs on explicitly cued passages.
7. For an additional challenge, go over some models that have implicit cues and are not clearly structured.

visuals in print is a further understanding of the print (Graham and Robinson, 1984).

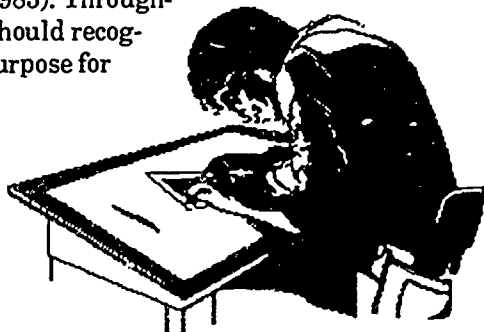
A unit taken from the Harvard Milton series (Study Skills Group, 1980-86) describes some activities to help middle grade and secondary students recognize the value of visuals, the specific skills needed to learn from visuals, and how to formulate useful questions to learn from visuals.

1. Students begin work with several kinds of visuals. They look for meanings by:
 - a. Looking for the main idea and supporting detail.
 - b. Asking and answering exploratory question.
2. Group discussion should bring out the fact that a caption or title of a visual usually states the main idea.
3. Through teacher and student discussion and questioning, students will realize that certain types of visuals are appropriate for certain kinds of information. They might see, for example, that:
 - a. Graphs tend to present data that has two dimensions.
 - b. Graphs are good visuals for comparison and contrast.

"The purpose for visuals in print is a further understanding of the print."

Learning From Visuals

In the primary grades, children should be taught to gain information from pictures and should be introduced to maps. As they move into intermediate grades, they should be taught to make interpretations from maps, graphs, tables, diagrams, charts and timelines (Mangrum II, 1983). Through-out, students should recognize that the purpose for



4. The teacher must motivate students to ask exploratory questions regarding their visuals. The students must be able to analyze, look for implications, and assume the role of the critic. To be able to do this the student must become familiar with general patterns of organization.
5. Once students can spot how the visual is organized, they will be able to ask exploratory questions that will lead somewhere.
6. Students should also try to determine how well the visual communicates its message. This calls for judging the accuracy and worth of the visual. For example, in evaluating a picture or prose selection, the student might ask exploratory questions such as:

- a. Are the facts accurate?
- b. Are they explained sensibly and accurately?
- c. Are the facts recognizable and distinct from the subjective commentary?

Learning How To Remember:

Bragstad and Stumpf (1982) present a chapter on memory that contains good study skills strategies teachers from K-12 might include in their how-to-do-it file. The following is a condensation of that chapter, stressing the significant aspects of instruction a teacher should follow:



1. Becoming Aware Of Memory:

Making students aware of memory ability is the initial step. If students keep journals or notebooks, have them start a new section under a caption such as, "How to Sharpen Memory." Ask them to think a moment and then write down their reactions to the following questions:

- a. What would your day be like if you had no memory?
- b. If you could not remember, would life be better or worse for you? Explain.

Discussion that follows should be lively. Some students may bring out the advantages of not having a memory—such as one may not have prejudices, or retain anger, or seek revenge. However, in most classes the advantages of having a memory will outweigh the disadvantages, and students will tend to appreciate the gift of memory, something they have not thought about before.

2. Discovering That Memory Can Be Improved:

- a. Knowing what it is that causes a person to remember some things and not others is an issue the class should consider.
- b. Remind students that most students who do not work at improving their memory will forget what they have read in an assignment within 24 hours.
- c. Point out, also, that students who do not use special memory techniques will forget 80 percent of a reading assignment within 2 weeks.

3. Memory Strategies:

Provide the following general memory strategies to students and have them consider how many of these strategies they actually use in studying.

- a. Are you interested in the subject?
- b. Is it your intention to remember what you are reading?
- c. Are you giving the subject your complete attention?
- d. Is your mind open for new ideas?
- e. Do you feel confident about remembering the material?
- f. Are you looking for organization of ideas? (check title, captions, summaries, boldface writing, etc.)
- g. Are you attempting to accurately understand and learn the selection?
- h. Do you test yourself or quote from memory the material you read in a passage, section, chapter?
- i. Do you go over your notes from readings and class work frequently?
- j. Do you use your notes, class discussions, and reciting aloud to reinforce your memory?
- k. Do you associate what you have learned to what you already know?
- l. Do you study subjects that are different, rather than similar, one after the other?
- m. Do you use any memory system to learn lists of items?
- n. Do you see any basic patterns of organization in what you are studying?

4. Using Mnemonics:

Special memory systems known as mnemonics are very helpful to students when they need to



learn lists of ten or so items. Whether it be lists of dates; items; causes and effects of political, social, or economic events; laws of science, or characters in a play, the student must resort to some sort of rote learning. Using a system of mnemonics will help the student improve his chances of memorizing the material.

The teacher might begin by familiarizing the student with the history behind the word, "Mnemonics:"

Mnemonics comes from Mnemosyne, Greek goddess of memory. It refers to the practice of improving memory by using a system. The

Greeks used it when they delivered hours and hours of oration from memory. The Greek accomplished this by imagining that he was in a familiar area such as his home. As he mentally walked about the location, he associated specifics in his speech with items of his home that he saw in his mind's eye. Certain points of his oratory would be associated with a chair, a table, the dishes and so on. When he delivered his oration, he mentally viewed the house and recalled the lines he found with each item that came to his mind.

Some students might try this technique by associating some daily pattern, i.e.; bedtime routines or breakfast practices to something they must memorize.

The teacher asks students to recall mnemonic devices they already know that relate to basic information. For example, a few might be:

"I before E, except after C"

"Every Good Boy Does Fine." (lines of a music staff)

"Thirty days hath September....."

Number-rhyme Or Peg-word System

Another method for learning a list of items is the "number-rhyme" or "peg-word" system. In this system, each number from 1 to 20 is linked with a rhyming word. The first numbers are linked to the following for instance:

- | | |
|---------|-----------|
| 1. bun | 6. sticks |
| 2. shoe | 7. heaven |
| 3. tree | 8. gate |
| 4. door | 9. vine |
| 5. hive | 10. hen |

When attempting to learn a list of items, then, the student creates a vivid image which associates the number 1, the word bun, and the first word on the list of items to be learned. Then the student focuses on this image for several seconds to be sure that it is imprinted in the brain.

Since this strategy will be a new experience for many of the students they will have to have considerable practice with class content before it becomes a good study skill strategy for them.

Learning Test-Taking Strategies

Mangrum II (1983) in his *Learning to Study* lessons recommends that students in the primary grades become familiar with the three most frequently found types of tests they will encounter, i.e.; true-false, matching, and sentence completion. Lessons are provided on the characteristics of each of these tests and the different ways for marking answers. In the intermediate grades, discussions for taking multiple choice, essay, fill in the blank and, by seventh grade, cloze tests are added. Some suggestion for some of these tests are:

1. Multiple choice tests

- a. If you are given a reading selection, read it carefully.
- b. Read each item in the test and all the possible answer choices.
- c. Eliminate choices you know are incorrect. Try to narrow the number of answer choices to two.
- d. Choose the best answer.
- e. Mark the answer the way you are told.

"Students should try to find out which type of test they will be taking as each type of test calls for specific study strategies."

2. Essay tests

- a. Read the essay test item carefully and decide what information you need to fully answer the question.

- b. On a separate piece of paper outline in some form the information you want to include in your answer. Start with a theme or main idea statement.
- c. Using your outline, write your answer in complete sentences and paragraphs.
- d. Read your answer over to be sure it contains all your points.
- e. Divide your time carefully among these steps so you can complete the task.
- f. Answer every question even if you have only a partial answer.



3. Cloze tests

- a. Read the entire passage.
- b. Try to think of the information that should go in the blank.
- c. Try each answer choice.
- d. Select the best answer.
- e. Reread the passage to see if it fits.

If at all possible, students should try to find out which type of test they will be taking as each type of test calls for specific study strategies (Christen, 1985).

True-false tests require you to recognize stated facts, to know definitions, to identify a rule, and to recognize fact from opinion. As you are studying, ask yourself true-false questions. If even part of a statement is false, then the answer will be false. Statements having words like always, only, never, or no-one are usually false. Statements with often, generally, many, sometimes are usually true.

Multiple-choice and matching tests require you to know definitions, to recall factual information, and to determine how ideas are related. When studying, try to keep your information organized.

Completion tests ask you to give correct words, names, numbers, dates or symbols missing from the test. Answers are short and specific. When studying, try to memorize this type of information.

Essay questions require you to explain, discuss, summarize or outline a topic. When studying for this type of test, ask yourself broad questions. Organize your thoughts and write practice answers using complete sentences organized into paragraphs.

Students need help in reviewing for tests. These procedures should be guided by teachers in lower grades and then used independently by students throughout their schooling (Devine, 1989).

1. Turn main idea sentences into questions and then try to answer them.
2. Make questions from your notes and then answer them.
3. Put factual questions on 3x5 inch cards with answers on the back.
4. Develop mnemonic devices.
5. Look for relationships among information, developing graphic organizers, if appropriate.
6. Concentrate on important points.
7. Relate dates, numbers, names, etc. to events or people in your own life.
8. Double check meanings of highlighted words and phrases.
9. Overlearn important information.
10. Have a healthy meal, a good night's sleep and a quick review the morning before the test.

Using the Correct Rate of Reading

Children in the primary grades generally read word by word at the same approximate rate unless they have to pause to figure out the next word. Particular attention must be given to enable students to adjust their rate to the purpose for the reading (Crawley & Mountain, 1988). Slow, careful reading (50-150 words per minute) is necessary for problem solving or analysis of the material. A moderate rate (250 - 350 wpm) is appropriate for magazines or newspapers. Easy, fast-moving stories can be read at a rapid rate (350-600 wpm). Skimming can be used for general overviews, scanning to locate specific information.

"Particular attention must be given to enable students to adapt their rate to the purpose for reading."

Various machines and commercial approaches are available to increase reading rate to the optimum for easy reading. Teachers can help students to increase

their speed with timed techniques that encourage them to read material in shorter periods of time or to read more material in the same time. They can keep charts of the number of pages during a fixed period of time or they can keep the number of words or pages constant and keep charts of the time needed to read the material.

To skim a selection look at headings, subheadings, introductory paragraphs, topic sentences and summary paragraphs. For stories, read a few paragraphs to get an idea of the characters, setting, etc., then a few key sentences and the last two or three paragraphs.



To scan, use the key words in the selection, index, glossary, telephone book, TV guide, etc. You already know what you want to find so use the alphabet or structure of the material to help get to the specific information quickly.

CONCLUSION

Enabling students to become independent learners is a major goal of education. All teachers from kindergarten on must actively inform, model and assist students to take responsibility for their own learning. This begins with an awareness of the role of studying in the educational process; continues with teachers assigning appropriate pre-reading, during-reading and post-reading guidance and activities; and then focuses on students themselves developing and using appropriate study strategies. Students must find out which strategies work best for them in terms of the purpose for the assignment, the time and effort needed and the results produced. Teachers have the responsibility for providing the information about a variety of study skills and then giving many opportunities to practice and perfect these skills.

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This book offers elementary and secondary teachers practical suggestions for helping students develop study strategies. Specific lessons, guides and forms are provided.

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This publication explains five applications of how semantic mapping can be used in the classroom: for general vocabulary development, as a prewriting activity, as a prereading activity, as a postreading activity, and as a study skill strategy.

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This publication is a good resource for study skills in the elementary grades.



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