

Preparing Students to Learn: Teaching Study Strategies

Research shows that students who use good study strategies learn more, but study skills are sometimes not explicitly taught to students. Teachers may assume that pupils already know how to study information and organize their thoughts, or they may feel there is only enough time in the school year to focus on learning subject matter or content—not processes or techniques for learning.

Study strategies are essential components, however, in the overall learning process for children of all grades and achievement levels. Such skills can help students:

- complete assignments accurately, efficiently, and on time;
- get the most out of any particular assignment or task;
- complete assignments independently;
- be responsible for their own learning;
- proofread and review work carefully;
- make complex assignments less cumbersome and more manageable; and
- work cooperatively with other classmates (Hoover 1993).

This issue of *Supporting Good Teaching* takes a look at the study strategies that can help students learn and retain material, some common impediments to studying, suggestions for how parents can help keep their children on track at home, and general tips that can be applied when teaching any study skill.

Specific Study Strategies

Certain study strategies can help students understand material, while other study skills can help them retain information. Blai (1993) suggests that average students should be able to learn these strategies quickly,

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although low-performing students may need to be taught more explicitly when and how to use these skills.

Strategies for Learning Information

Organizational skills

Learning how to organize a notebook is essential for students, especially those with dysfunctional work habits who often need to finish class assignments at home, can't find assignments, and cram notebooks, desks, and lockers with papers. One solution is for students to use zippered binders to trap papers that might otherwise fall out. To provide a sense of order, the binder can be divided into areas by class and separated by tabbed dividers and a pocket folder. To help students make connections, the tabbed dividers should be placed according to the sequence of classes the student is taking (McCoy 2000).

"Often, students arrive in class and say that they have forgotten their homework or they are not prepared," Rafoth and Leal observe. An organizational strategy known as "PREPARE" can be written on an index card and carried by students throughout the day as a reminder to:

- **P**lan locker visits. When can you go to your locker?
- **R**eflect on what books, materials, and homework you need to carry.
- **E**rase personal needs by putting aside your personal problem before entering class.
- **P**sycho yourself up for the class. Pause for an attitude check. How do you feel about this class? Set a personal goal for the class. What do you want to accomplish?
- **A**sk where the class is going, and where it's been. What have you been doing? How does what you are doing now fit into what you've done?
- **R**eview notes and study guides. What did you do that ties into what you will do today?
- **E**xplore the meaning of the class introduction. What is going to be done in class today? (1993, 52)

Teachers should realize, however, that students who are having difficulty with academic subjects are also

likely to need more help in understanding the steps and time to practice the process with support.

Because long-term projects can seem overwhelming to students, *goal setting* is an essential strategy that focuses their attention on what is to be accomplished and gives them an incentive to sustain their effort (Day and Elksnin 1994). In goal setting, students outline the steps that will lead to completing a project. Before writing a paper, for example, pupils should establish the various steps necessary to complete the assignment, such as locating necessary references and proofreading (Dembo and Eaton 2000).

Instruct students in how to use strategies and provide opportunities for practice.

Reading and listening skills

Good reading and listening skills are integral to learning information, since students who can read quickly, comprehend content effectively, and listen correctly are more efficient learners.

You can help students improve their reading speed by paying careful attention to their behaviors and then helping them make adjustments when necessary. The following indicators can be used as diagnostic tools:

- **Eye movements**—Better readers proceed across the page by making only a few pauses—or fixations—per line. Problem readers may reread words too often in an effort to comprehend the meaning, causing more fixations, slowing their pace, and sometimes creating even more difficulty with comprehension. For these students, decreasing the number of fixations per line may help increase their comprehension since reading is less choppy.
- **Lip movements**—Some people have developed the habit of vocalizing each word they read, which slows reading speed. Like any habit, this problem can be overcome to greatly improve reading speed.
- **Vocabulary**—As people speak, read, and listen, they build their vocabulary. The less adequate the vocabulary, the slower the reading and the lower the level of comprehension.

- **Level of interest**—If a student is truly interested in a subject, the reading is easier. Disinterest can build a wall against learning that makes it more difficult for students to marshal energy necessary for active learning (Blai 1993, 100).

A number of strategies are geared toward improving students' reading comprehension. For example, the reciprocal reading approach can increase reading comprehension in poor readers while training students to monitor their own understanding. The strategy involves:

- **summarizing**—paraphrasing the main idea of a paragraph that has just been read;
- **question generating**—anticipating what questions the teacher might ask on a test;
- **clarifying**—improving comprehension through rereading, reading ahead, asking for assistance, or using reference materials; and
- **predicting**—anticipating what the next paragraph will be about (Rafoth and Leal 1993).

In another reading comprehension strategy known as **RAP**, students **r**ead a paragraph, **a**sk themselves to identify the main idea and two supporting ideas, and then **p**araphrase the information. Writing the ideas in their own words helps students learn the skill of paraphrasing, encourages them to search more actively for meaning, and discourages learning through memorization (Hoover and Patton 1995).

A listening strategy called **TQLR** encourages students to **t**une in, **q**uestion, **l**isten, and **r**eview what has been said. After generating questions, the students listen for information related to these questions while the teacher talks (Educational Research Service 2000).

Problem solving

Learning is easier when students can draw upon skills to help them solve problems. One strategy, known as **IDEAL**, provides steps to which students can refer:

- **I**dentify the problem. For example, in chemistry class, mixing chemical liquids did not produce the expected results.
- **D**efine the problem more precisely. There was something wrong in the mixing process or with the materials used.

- **E**xplore a possible solution. Were the correct chemicals used? If so, check if they were added in the correct quantities and the proper order.
- **A**ct on possibilities. Run the experiment again.
- **L**ook at the effects of the experiment. Did you get the correct results? Evaluate whether this procedure helped to solve the problem (Rafoth and Leal 1993, 53).

Mnemonic techniques can help students who have difficulty recalling facts.

Strategies for Retaining Information

Mnemonics

Through mnemonic techniques, students associate imagery, letters, words, and even physical spaces with facts to aid in their recall. Such strategies are especially useful for students with learning problems, who often have difficulty remembering academic content but who must recall facts for tests (Mastropieri and Scruggs 1998). Specific mnemonic strategies that can help jog students' memories include:

- In the **keyword** method, students visualize pictures in their minds that can be connected to words or facts that are being taught. To achieve maximum recall, the associated images must actually interact and not simply appear in the same picture. Students who are learning the term *embryophyte*, for example, might imagine a picture of two embryos fighting. Or to help students remember that *barrister* is another word for lawyer, you can show them a picture of a bear who is acting as a lawyer in a courtroom (Rafoth and Leal 1993; Mastropieri and Scruggs 1998).
- The **pegword** method can be used when numbered or ordered information needs to be remembered. Pegwords rhyme with numbers, such as "one is *bun*, two is *shoe*, three is *tree*, four is *door*." Or to remember the math fact, $7 \times 8 = 56$, create a picture and practice the pegword phrase, "Heaven's (7) gate (8) holds fifty sticks (56)" (Mastropieri and Scruggs 1998, 205-206).

- *Letter* strategies involve using letter prompts to remember lists of things. For example, teachers commonly teach the acronym “ROYGBIV” for the colors of the rainbow or “HOMES” for the five Great Lakes (Hattie, Biggs, and Purdie 1996).

Notetaking

“The ability to take good notes can make the difference between success and failure,” according to Hatcher and Pond (1998, 716). Indeed, studies indicate that unless students take carefully written notes and understand them, within two weeks most will forget 80 percent of what they hear in class, and within four weeks, they will forget 95 percent.

A basic component of notetaking is separating general and specific ideas, although there are variations on how to do this. In the Cornell system, for example, students make detailed notes in the wide right-hand margin of a page, and jot down clarifying ideas and questions related to the detailed notes in the narrow left-hand margin. In another system, students draw a line down the middle of a page, jotting down the general topics being discussed in the left column and any specifics that pertain to the general topics in the right column (Hatcher and Pond 1998; Bakunas and Holley 2001).

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You can teach primary and intermediate students how to take notes from textbooks or the chalkboard by modeling good notetaking strategies, as suggested by Laase:

- 1) Before class, reproduce onto a transparency three paragraphs from a reading related to your theme.
- 2) Ask students what they know about taking notes. They might say, “Don’t use the book’s words” or “Keep it short.” List their ideas on chart paper.
- 3) Project the transparency and read the first paragraph aloud. Be sure to cite the source of the text.

- 4) Think aloud as you summarize the paragraph, and underline words that distinguish different ideas.
- 5) On chart paper, begin the notetaking process by categorizing information.
- 6) Repeat the process for the next paragraph, this time asking students to help.
- 7) Turn off the projector and ask students to describe, in their own words, what the paragraph said. Write their responses on chart paper.
- 8) Have small groups of students practice the process with the third paragraph. Ask volunteers to share their summaries.
- 9) Return to the original list of notetaking strategies, and have students add to it, based on what they’ve learned (1997, 58).

Guidance for older students who are taking notes from textbooks or the chalkboard might include:

- *Distinguish* between main ideas and subordinate ideas, but be sure to connect the two.
 - *Condense or shorten* important new information in your own words.
 - *Use an outline form*, with main headings and no more than one or two subheadings.
 - *Integrate* new and old information.
 - *Take notes* of various text structures, such as headings and subheadings, and organize notes around text generalizations or main ideas.
 - *List examples* to support generalizations or main ideas.
 - *Organize notes* into a hierarchy of information; create a diagram or chart to show relationships.
 - *Place information* into groups or patterns, such as chronological order, reasons for and against, comparisons, and cause and effect (Ornstein 1994, 68).
- Notetaking during a lecture is often an activity for middle and high school students, who might benefit from learning the following strategies:
- *Keep thinking clear.* Thoughts tend to follow each other in sequence. Focus on the lecturer and try to spot the ideas he or she considers important—then write them down.

Notetaking Strategies for Students with Disabilities

Although taking notes during a lecture actively engages students with learning disabilities in the learning process and improves their comprehension, some of these students have difficulty identifying the important information, writing fast enough to keep up with the teacher, making sense of their notes later, or writing complete notes.

You can provide these students with a form that contains written “cues” to help them organize and combine new information with prior knowledge. The form might include directions and questions such as:

- *Fill in this portion before the lecture begins:* What is today’s topic? What do you already know about the topic?
- *As the teacher talks:* Write three to seven new main points with details as they are being discussed. Quickly describe how the ideas are related. Also be sure to note any new vocabulary or terms.
- *Fill in this portion at the end of the lecture:* Write five main points of the lecture and describe each point (Weishaar and Boyle 1999).

- *Make notes brief.* Don’t attempt to write down everything the instructor says. Look for information that involves “who,” “what,” “where,” and “when,” and jot these down as briefly as possible. Use abbreviation or shorthand, if possible, and review notes as soon as possible after the lecture, adding detail or making corrections if necessary.
- *Learn to be exact.* Accuracy on your part will depend on how well you hear and understand, and it will be reflected in the quality of the notes you take (Blai 1993).

Test preparation.

Doing well on tests and earning good grades begins with good study habits. You can aid students in preparing for tests by encouraging them to:

- *Form a study group.* Students can both gain encouragement and learn in a study group. Groups are most effective when limited to five or six dedicated students; when each meeting follows an agenda; and when the group follows a format, such as beginning by comparing notes, then discussing specific topics, and ending by brainstorming possible test questions and testing each other (Loulou 1995).
- *Refrain from cramming.* Cramming the night before is more likely to ensure fatigue and difficulty paying attention than high performance. Help students learn how to pace their studying.
- *Use a practice test approach.* Students should make up practice questions to be answered, concentrating first on vocabulary, then on basic facts, and finally on general principles and applications. Above all else, students should use some form of mental recitation and not simply read and reread the material.
- *Space the reviews.* Students should rest for 10 to 15 minutes between subjects to absorb the information.
- *Review tests that have been returned.* Students can analyze their mistakes on former tests and concentrate on improving any areas of weakness.
- *Learn and practice test-taking skills.* Suggestions include being on time and prepared, reading the test instructions carefully, budgeting one’s time, and leaving difficult questions for last (Blai 1993).

Impediments to Studying

Distractions

The home environment is an important component of studying that can either help or hinder students’ learning. A 1994 study found that the most prominent disturbances to effective studying at home were talking on the phone with friends, watching television, family activity such as family members walking in and out of the room or parents asking questions, and general noises such as a vacuum cleaner or doorbell, etc. (Ornstein 1994).

A similar study done today would no doubt identify internet use—especially instant messaging and E-mail—near the top of the list for many students.

There are also internal distractions, such as personal concerns, anxiety, or procrastination, that can play a part in derailing attempts to concentrate on school-work (Dembo and Eaton 2000).

Students can learn to control external and internal distractions to studying. The following are some suggestions you can make to students:

- Establish a routine schedule for study time.
- Set a goal for the designated study period.
- Secure your physical comfort with an acceptable chair and good lighting.
- Collect all necessary aids—pen, paper, pencil, dictionary, etc.—before starting.
- Attempt to reduce surrounding distractions to a minimum.
- Take a break in your study period when you become fatigued or reach an unproductive plateau.

Help students to understand that use of strategies can improve their performance.

- If you find yourself procrastinating, use the “five-minute plan”: Agree to work on a task for five minutes, and at the end of five minutes, decide whether to work on it for another five minutes.
- If you think that you do your best work under pressure, realize, “I fool myself into thinking that I do a good job at the last minute, when the truth is that I never have any time to review or improve my work.” (Blai 1993; Dembo and Eaton 2000).

Students’ Erroneous Perceptions About Learning

Perhaps one of the most important benefits of study skills training is that it can change students’ negative perceptions about their own ability to learn. As students apply study strategies, provide them with feedback that explicitly links their improved performance with strategy use—so they can see that ability to learn is a modifiable characteristic, not something a person is simply born with (Hattie, Biggs, and Purdie 1996; Jones et al. 1995).

Researchers point out that if students’ perceptions toward their ability to learn aren’t addressed, many students might fail to effectively use the study skills they acquire (Jones et al. 1995).

Parents’ Roles in Study Skills

Research has found that the most positive influence on the amount of time spent on homework is the parent or parents (Ornstein 1994). The following are tips for parents to help their children manage their study time effectively:

- Develop semester and monthly schedules showing deadlines for activities and personal goals with your children. Post this in the designated study area at home.
- At the end of each week, review with your children the accuracy of their time projections for the week.
- Develop with your children after-school schedules including time for family, homework, and recreation.
- Encourage your children to begin each new daily or weekly schedule with positive

What Happens to Students When They Become Strategic?

- Students trust their minds.
- Students know there is more than one way to do things.
- They acknowledge their mistakes and try to rectify them. They evaluate their products and behavior.
- Memories are enhanced.
- Learning increases.
- Self-esteem increases.
- Students feel a sense of power.
- Students become more responsible.
- Work completion and accuracy improve.
- Students develop and use a personal study process.
- They know how to “try.”
- On-task time increases; students are more “engaged” (Beckman 2002, online).

thoughts about maintaining the schedule, without dwelling on previous time management errors (Hoover 1993, 240).

As a teacher, you can help by keeping parents informed about their children's homework and how to help them with it. Note that if parents have to do more than periodically explain or review the homework, the assignment might be inappropriate (Ornstein 1994).

General Tips on Teaching Study Strategies

For students to learn study strategies, teachers must teach them effectively. Good strategy instruction includes:

- direct explanation and modeling on how to carry out the strategy;
- information about when and how to use it;
- reminders to use the strategy;
- repeat strategy use—practice, practice, practice;
- constant feedback about the strategy's usefulness;
- constant feedback about how students' performance is improving when they use the strategy; and
- information about how the strategy generalizes to other learning tasks (Rafoth and Leal 1993).

As Day and Elksnin note, "Throughout the day, as you model strategic behavior and help students identify how you approach tasks strategically, you are building a foundation for problem solving" (1994, 269). Using study strategies helps students of all grades and achievement levels learn more effectively—and teaching study strategies gives you the opportunity to impart lasting skills students can draw upon for the rest of their lives.

"Being aware of what goes on in one's own mind is a critical first step to effective independent learning" (Walberg and Paik 2004, 32).

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Questions for Discussion and Reflection

- Think about some of your own lesson plans. Are there any mnemonic techniques, such as keyword or pegword methods, that might be useful to your students when learning or studying new concepts and ideas?
- Brainstorm some additional notetaking strategies that your students find helpful. How might these strategies be presented to your students? Keep in mind the notetaking strategies provided by Laase on page 4.
- Develop a “Tips for Test Preparation” handout for students that incorporates the general strategies outlined in the text in addition to subject specific hints. Construct a checklist or a “roadmap” that might help your students in their preparation/study process.
- With your colleagues, develop a list of “Study Tips to Remember when Helping Your Children” that can be sent home to parents. Include general tips such as those provided by Hoover on page 6-7 as well as student-specific advice based on in-class student behaviors and skill levels.

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