

## Practice and Homework – Effective Teaching Strategies

This *Considerations Packet* focuses on practice and homework as instructional strategies that teachers can utilize daily to increase and maintain retention of information for all learners. Strategies for practicing new learning are suggested, including visualization, mnemonics, quick writes, and effective questioning. Finally, tips for homework completion are provided for both teachers and parents.

It is important that teachers make sure that all students understand the content that has been taught. Practice and homework are effective instructional strategies to help students retain content. All classrooms contain students with diverse learning styles. To guarantee mastery and retention of new learning for all students, teachers should use several variations of practice and homework. In addition, students with disabilities need extended practice periods with feedback from their teachers as well as variations of practice and homework.

### Practice

“Practice activities are intended to reinforce memory and comprehension of information that was gained in the lesson” (Mastropieri & Scruggs, 2004, p. 176). As teachers plan practice activities, they must consider ways to ensure that these activities are beneficial to their students’ learning. Specifically, to reduce the variance in student achievement related to practice, teachers should consider:

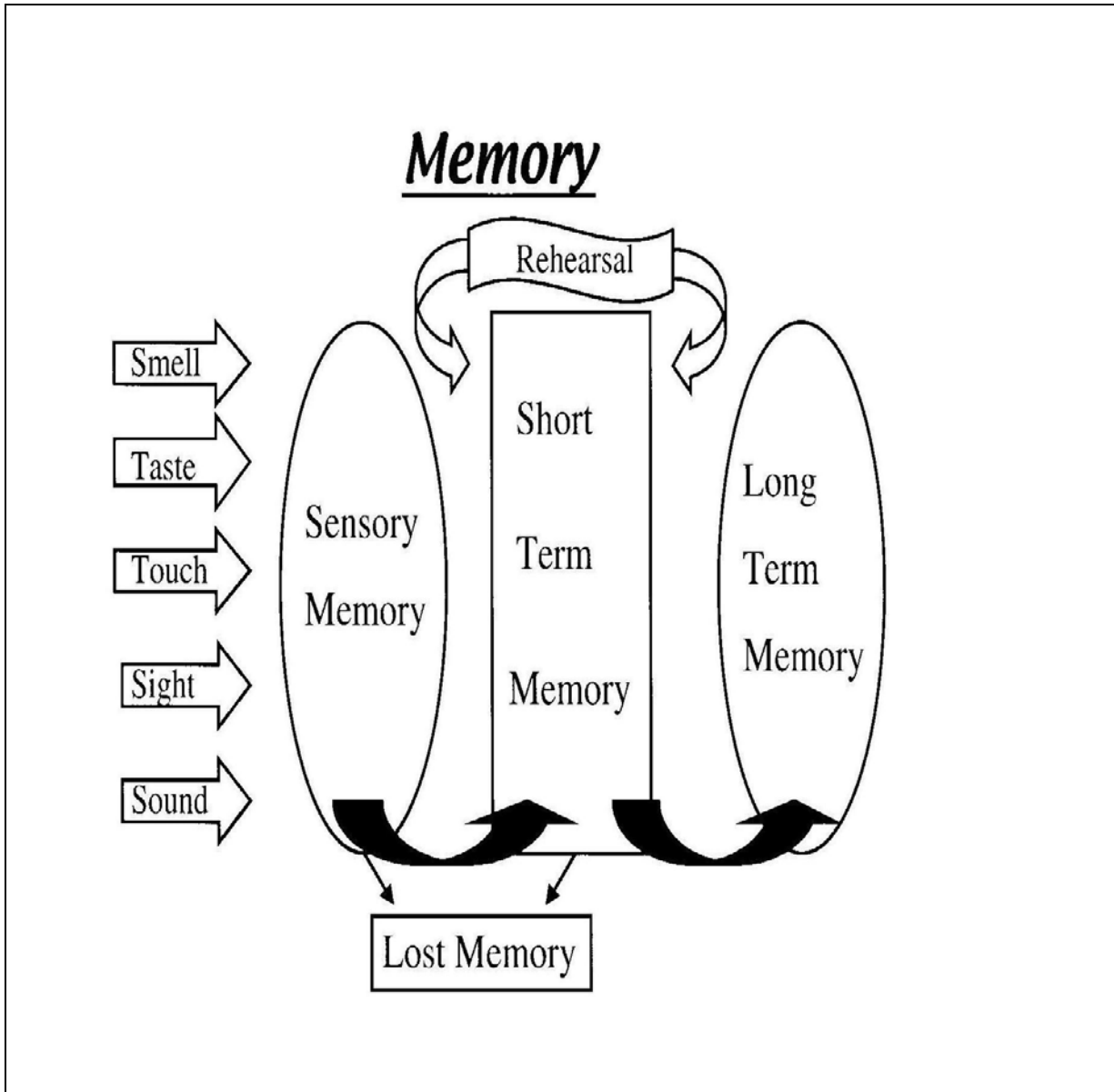
- Control of task difficulty (i.e., making problem examples easy at first, then more difficult)
- Small-group instruction (i.e., limiting interactive groups to six students or fewer)
- Directed response questioning (i.e., teaching students to generate questions while reading or working on academic assignments)

(Vaughn, Gersten, & Chard, 2000)

In order for learning to take place, students must commit information to memory. According to Susan Jones (2002), known for her work on brain research, several practice sessions are needed for students to retain new learning. She has developed a memory model to help understand how the brain works with new learning (see Figure 1).

As illustrated, new learning enters the brain through what is known as our sensory memory, which last approximately 3-4 seconds. From here the new learning travels to short-term memory, where it remains for approximately 18 seconds. If no rehearsal or practice sessions follow, the new learning simply becomes lost memory. New learning may also be forgotten or lost from short-term memory if it is not rehearsed enough. It takes at least eight rehearsal sessions for advanced learners to retain new information. Twenty rehearsal sessions are needed for average learners, and as many as 90 rehearsal strategies may be required for at-risk or students with special needs.

**Figure 1. Jones' memory model.**



This model was adapted from *Maximize Your Students' Learning* by S. Jones (2002).

## **Rehearsal Strategies**

A variety of strategies to rehearse or practice new learning are suggested in the following sections. Rehearsal strategies are learning techniques that help students revisit content as much as possible. “Memory, particularly declarative memory, needs to be planted richly (with much emotion and novelty, stimulating as many parts of the brain as possible) — and rehearsed frequently, particularly procedural memory” (Jones, 2002, p. 34). The following rehearsal strategies will be explained in this packet:

- Visualization
- Story creation
- Mnemonics
- Song, rap, or skit development
- Foldables
- Preprinted response cards
- Quick writes
- Questioning techniques

### **Visualization**

Visualization, or creating images or pictures in the mind, is an excellent learning strategy. When students have difficulty visualizing, the following technique may be used to help them. Ask students to close their eyes and picture their classroom, thinking about the bird cage next to the door, the fish tank under the windows, the hamster cage beside the sink, and the snake poster on the bulletin board. Then ask students to open their eyes and write a list of animals for their science class. This simple task will help them begin to visualize content material when needed. Visualizations can provide a substantial memory advantage (Mastropieri & Scruggs, 1998).

### **Story Creation**

Creating a story can be used to increase student retention and achievement. For example, storytelling helps students with sequencing. The teacher may tell students a story about how plants are grown. Using a fictional character, the teacher may tell students how seeds were purchased, planted where there was sunlight, and watered regularly to produce a healthy plant. This progression of events helps students when they need to remember sequential or cyclical information in science and social studies.

### **Mnemonics**

Human brains are “wired” to remember patterns and shortcuts. Mnemonics are strategies for remembering information that is otherwise difficult to recall. The basic principle of mnemonics is to use as many of the functions of the human brain as possible to code information. The brain likes to code images, color, structure, sounds, smells, tastes, touch, emotion, and language. Mnemonics attempt to use all of these functions. Mnemonics help to relate new information to information students already have stored in their long-term memories. By coding language and numbers in an abbreviated image, we can accurately and reliably code information to be recalled later. A good example of coding information when teaching a science unit is this mnemonic: "**M**y **v**ery **e**ducated **m**om **j**ust **s**erved **u**s **n**ine **p**izzas." The first letter of each word in this sentence helps students recall the nine planets in the order of how they are arranged from the sun (**M**ercury, **V**enus, **E**arth, **M**ars, **J**upiter, **S**aturn, **U**ranus, **N**eptune, and **P**luto). Using mnemonics

is an effective strategy to aid students' recall of important information. "Learning gains of as much as 2-to-1, or even 3-to-1, are common in mnemonic strategy research with students with disabilities" (Mastropieri & Scruggs, 1998, p. 292).

### **Song, Rap, or Skit Development**

Developing songs, raps, or skits taps into the students' creativity. These types of activities also allow students to become physically active while learning, thereby activating both hemispheres of the mind. Such activities lead to better-quality thinking and better-quality learning (Jensen, 1997).

### **Foldables**

Dinah Zike (2004) has invented hundreds of educational manipulatives, which she calls "Foldables." Using paper, teachers and students create books, pamphlets, or study guides of subject content. Foldables are used as graphic organizers that help students to problem solve, take better notes, and improve study skills. The following picture is a "foldable" of parts of a plant to be used as a study guide. On the front is a picture of four parts of a plant. As each section or part of the plant folds back, the definition of that plant part appears.



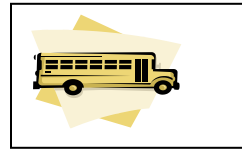
### **Preprinted Response Cards**

Preprinted response cards are used to help students remember vocabulary words from each of the content areas. Students can play concentration games, vocabulary bingo, or simply hold up the correct vocabulary word for the teacher to check after the definition is given (Foil & Alber, 2002). On one side of the card the word is written in large print. Primary students draw a picture to represent the word on the back of the card. Pictures are also helpful to many students with disabilities. For students in the upper grades, the definition and an example sentence should be printed on the back of the cards.

Sample, lower-elementary response cards:

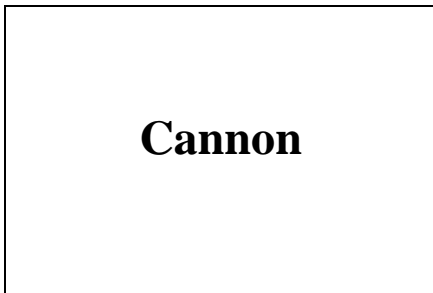


Front of Card

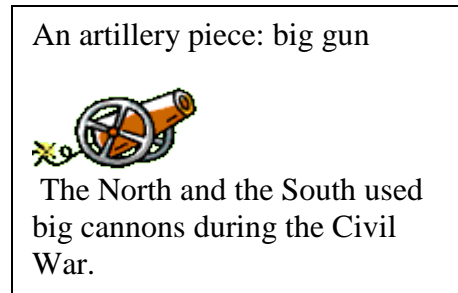


Back of Card

Sample, upper-elementary, middle, high school response cards:



Front of Card



Back of Card

### **Quick Writes**

Quick writes are short writings from students in response to a teacher's question or prompt. They may also be used to summarize key points from a lecture, reading, discussion, or classroom activity (Western Washington University, 2004). For example, the teacher may ask a student to write a few sentences describing how the water cycle works. Quick writes serve as a quick assessment tool to see if information is being retained. Teachers can use quick writes as morning board work, journal entries, or even homework assignments. Students generally enjoy doing quick writes because they are not expected to write pages of information. The average time it takes to write a quick write is 1 to 5 minutes. The average size of a quick write is 5-10 sentences. Students with writing deficits may use tape recorders, share their ideas with a partner, or note words and phrases on a graphic organizer such as a frame or web.

### **Effective Questioning**

According to Jones (2002), asking effective questions promotes higher-level thinking from students. Student practice with higher-level thinking skills has been correlated with improved standardized test scores. Jones suggests that teachers ask questions such as the following on a regular basis:

- Tell me why you think so.
- What evidence can you point to?
- What about the rest of you?
- Listen to what "X" is saying...

- Anything you want or need to know about?
- Did you learn something new?
- Did it remind you of anything else you have read?
- Can you summarize the main points in writing?
- What do you think the author was trying to say?
- What is new information you've read?
- What did you think about when you finished reading?

(Jones, 2002, p. 47)

Using effective questioning is very important to all students. Besides recalling information, students need to know how to analyze, synthesize, and evaluate all kinds of information. They must become critical thinkers and good problem solvers in order to become better academic achievers. Questioning students is one of the most beneficial rehearsal strategies teachers can use in their classrooms (Jones, 2002).

### Homework

In classrooms across America, homework has become a part of the lives of today's students. It provides opportunities for students to practice content being taught to them. By giving frequent homework assignments, teachers give students a greater chance of developing fluency with the information being taught. Indeed, failure to do homework is often a reason for referral to special school programs targeted at serving students with special needs (Callahan, Rademacher, & Hildreth, 1998).

Generalizations from research on homework (Pickering, 2003) include the following.

- **The amount of homework assigned to students should be different from elementary to middle school to high school.** As students grow older, they should spend more time on homework. The chart below gives the results of six studies involving general education and at-risk students. The chart lists the total minutes per day each study recommends that students spend on homework. All of the studies show increasingly more time being spent on homework as students move from primary school to high school.

**Chart 1. Minutes per day spent on homework.**

Studies	1	2	3	4	5	6
Primary	30		20-29	10		
Upper Elementary	45-95	50	30-34	40		
Middle School/Junior High	90-120		50	60		
High School	120-180			120	60	60

(Pickering, 2003, p.5)

- **Direct parent involvement in homework should be kept to a minimum.** Many parents feel that it is their responsibility to help their children with homework. As a result, they often help their children to redo assignments that have been done incorrectly. Instead, their responsibility should be to make sure the work is being done, rather than doing the work with or for their children.

Especially for parents of students with disabilities, it is critical that educators provide suggestions for how to assist their children with homework (Pickering, 2003). Questions that should be answered for parents include the following, adapted from the Special Education Parent Guide (Virginia Department of Education, 2003).

- ☺ What level and types of books should I be reading to my child?
- ☺ What are some good study habits (that fit his or her learning style) that I can help my child develop?
- ☺ How can I help with my child's homework?
- ☺ What kinds of activities can I do at home that will relate to information being taught at school?
- ☺ How can I help my child become a better test taker and thereby better show how much he or she has learned?
- ☺ What are some tips I should know to be supportive and encouraging to my child?

- **The purpose of homework should be identified and articulated.** Teachers should not expect students to practice skills that are unfamiliar or unclear to them. Homework is usually assigned to students to practice new learning taught by the teacher. In some cases homework may be given to prepare students for new learning taken from the curriculum framework. For example, a teacher may give each student a brown paper lunch bag and ask them to bring the bags back the next day filled with three important things that represent something meaningful in their lives. The next day, the teacher shows the class how to write informative papers about themselves using each of the three objects in the bag as the subject for a main idea of a paragraph for their paper. Students should be encouraged to use assignment books to clearly record and communicate required assignments (Pickering, 2003). Parents of students with disabilities should receive frequent communications about homework and special projects.
- **If homework is assigned, feedback should be provided.** At best, completed homework should be reviewed by the teacher. Studies have shown that student achievement increases if the teacher grades the homework. If the teacher goes beyond grading and provides feedback directly to the students, student achievement is even greater. Better yet are after-school programs which give teachers opportunities to assist students with their homework and to give appropriate feedback (Pickering, 2003).

## Tips for Practice and Homework Completion

Most students with disabilities have difficulty with completing assignments. The acronym “PROJECT” was used with students in inclusive classes to help them complete assignments. These students were taught to implement the strategy using assignment notebooks. “PROJECT” stands for the following steps:

- P = Prepare your forms (including monthly planner, weekly study schedule, and assignment sheet)
- R = Record and ask (students record assignments on the assignment sheet and ask for clarification)
- O = Organize the assignment (subdivided into:
  - Break assignments into parts
  - Estimate the number of study sessions
  - Schedule your sessions
  - Take materials home)
- J = Jump into it (students overcome task avoidance, prepare necessary materials, affirm the quality of the work to be done, and check requirements)
- E = Engage in the work (students complete the assignments and enlist assistance from parents or a “study buddy” when needed)
- C = Check your work (students evaluate the quality of the work, make corrections, and assign a “quality grade” on the assignment sheet)
- T = Turn in your work (students place the assignment folder where it can be located easily, check the monthly planner and assignment sheets, and turn in the assignment on time)

(Hughes, Ruhl, Schumaker, & Deshler, as cited in Mastropieri, & Scruggs, 2004, p. 315)

Using this strategy, students learn to become more independent and successful in completing work assignments. More work assignments are also turned in to teachers in a timely manner.

## Conclusion

All teachers in Virginia should be teaching from Virginia’s Standards of Learning curriculum framework. In addition, practice and homework should be used throughout the school year to help students retain the knowledge they must learn to be successful in school and pass high-stakes tests. Since the beginning of formal education, teachers have assigned practice of class work outside of the formal school setting (Hughes et al., 2002). Through the effective use of *practice and homework*, students can continue to benefit from the academic instruction that they receive. These strategies will help to create better problem solvers and build lifelong learners.



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