

For the Office-based Teacher of Family Medicine

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Feature Editor

Editor's Note: In this month's column, John H. George, PhD, of Penn State College of Medicine, and Frank X. Doto, MS, of County College of Morris, Randolph, NJ, describe a method to improve psychomotor procedure training for our learners.

I welcome your comments about this feature, which is also published on the STFM Web site at www.stfm.org. I also encourage all predoctoral directors to make copies of this feature and distribute it to their preceptors (with the appropriate *Family Medicine* citation). Send your submissions to Paul Paulman, MD, University of Nebraska Medical Center, Department of Family Medicine, 983075 Nebraska Medical Center, Omaha, NE 68198-3075. 402-559-6818. Fax: 402-559-6501. ppaulman@unmc.edu. Submissions should be no longer than 3–4 double-spaced pages. References can be used but are not required. Count each table or figure as one page of text.

A Simple Five-step Method for Teaching Clinical Skills

John H. George, PhD; Frank X. Doto, MS

One of the problems facing today's office-based preceptor is how to teach psychomotor skills in some kind of organized fashion that will optimize the use of time but produce a satisfactory learning experience for the student. One technique that has been used successfully in the American College of Surgeon's Advanced Trauma Life Support course¹ is the five-step method for teaching psychomotor skills.

To understand how and why the five-step method works, a quick review of psychomotor teaching principles is necessary. The principles are based on the taxonomy of the psychomotor domain.² The funda-

mental principles are (1) Conceptualization—the learner must understand the cognitive elements of the skill, that is, why it's done, when it's done, when it's not done, and the precautions involved. The learner must know the instruments and tools involved in the skill's performance. (2) Visualization—the learner must see the skill demonstrated in its entirety from beginning to end so as to have a model of the performance expected. This leads to learner imitation. (3) Verbalization—the learner must hear a narration of the steps of the skill along with a second demonstration. If the learner is able to narrate correctly the steps of the skill before demonstrating there is a greater likelihood that the learner will correctly perform the skill. This leads to learner manipulation. (4) Practice—the learner having seen the skill, heard a narration, and repeated the narration, now performs the skill. The skill may be broken down into discreet units for practice: sub-

component practice—practicing a small portion of the skill, linkage practice—practicing small portions linked together, contiguous practice—practicing the entire skill repetitively. This leads to learner precision practice and eventual articulation. (5) Correction and reinforcement—skill errors need immediate correction. Positive reinforcement should be used to cement correct performance. (6) Skill mastery—the ability to routinely perform a sequence of skills in a practice situation without error. This leads to learner articulation. (7) Skill autonomy—the ability to regularly perform the skill as a routine in real-life situations without error. This leads to learner naturalization.

By using these basic principles, the five-step method was created.

Step 1

Overview: To be motivated to learn a skill, the learner must understand why the skill is needed and how it is used in the delivery of care.

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Step 2

The preceptor should demonstrate the skill exactly as it should be done without talking through the procedure. This silent demonstration gives students a mental picture of what the skill looks like when it is being done correctly. This image is important since students will use this picture to self-evaluate their own performance when practicing the skill.

Step 3

The preceptor then repeats the procedure but takes time to describe in detail each step in the process. This will help students see how each step fits into the optimal sequence and will allow time for students to ask questions or seek clarification of a step or a procedure.

Step 4

Students talk through the skill. By asking students to describe step by step how to do the skill, the preceptor will ensure that the students understand and remember each step in the sequence of performing the skill. This will also help the students commit the process to memory so they can recall steps as they move to the next procedure.

Step 5

The students perform the skill. Now students are ready to do their first attempt at the skill with the preceptor carefully observing and providing feedback or coaching as needed. Following a successful attempt, students should continue to practice until they reach the desired level of proficiency.

This simple five-step method can be used for any type of skill teaching, regardless of the level of difficulty. If students have a problem learning a skill, the preceptor will need to identify which of the following reasons may be underlying their performance deficit.

Learner Trait Ability

Learner trait ability is the inherent inability of the learner to perform the task because the learner may not possess the strength, fine motor coordination, or the fine motor skills necessary to do the task.

Inadequate/Inappropriate Task Description and/or Demonstration

Learners may not know what the correct task looks like if they have not paid attention to the demonstration, or there was too much time between when the demonstration took place and his/her attempt to perform the task.

Imprinting of Previous Incorrect or Obsolete Performance

Learners may be automatically repeating what was previously learned even though it was incorrect. This is often the case in office-based procedures where students have attempted to learn a procedure under other conditions and were not given appropriate feedback and corrective action and thus are repeating an inappropriate application of the skill.

Improper Correction/Reinforcement

Learners may have received what was believed to be feedback indicating the performance was correct when it was not.

Affective Factors

Affective factors can include fear, intimidation, distraction, embarrassment, lack of belief in the value of the skill, sense of skill irrelevancy, or performance anxiety and can cause deficits in skill learning.

Inaccurate Learner Perception of Performance

The learner may not be able to recall what was done and what was not done correctly.

If the preceptor recognizes any of these problems, corrective actions can be initiated. Skill teaching need not be a time-intensive process if the preceptor will learn this quick and easy five-step method. While going through these five steps may seem lengthy, the result is that the preceptor will spend less time observing and correcting performance problems and will ensure a better learning environment.

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