Peyton's approach to clinical skills training in medical education

ND Liyanarachchi

Department of Paediatrics, Faculty of Medicine, University of Ruhuna, Galle, Sri Lanka.

Correspondence: Dr. Nayana Liyanarachchi
e-mail: *liyanarachchiuk@yahoo.co.uk*
https://orcid.org/0000-0003-3920-8653
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Practical skills play an essential role in daily clinical practice. Healthcare professionals are expected to be competent in clinical skills and are also expected to train those skills to their junior staff and students (1). Competency in the skills performed is required to ensure good patient care. Therefore, teaching skills in clinical practice remains an ongoing challenge in healthcare education (1). This article will discuss an effective way to conduct practical skills training sessions in Medicine.

The development and retention of practical skills are of great importance in clinical practice (2). Once the skill has been learned, regular practice and correct performance are key factors in developing mastery of the skill. A learned skill can be recalled and competently performed in various clinical settings (1). Acquiring practical skills is influenced by the retention of factual knowledge, psychomotor performance, and the candidate's attitude as a learner (2). Knowledge, communication, and performance are the main domains to be mastered in order to be competent in skills.

Miller's pyramid provides a functional set-up to determine a learner's competency in performing a skill (Figure 1) (3). The lowest level of the pyramid is based on knowledge, moving up to 'knows how' and then 'demonstrating how' to carry out the skill and at the top "on the job" performance.

There are different ways to teach a skill, such as using simulated patients, manikins, videos, virtual reality, and computers. Using skills labs in teaching provides opportunities for safe practice before performing these procedures on patients. This allows learners to practice, get feedback, and to further refine their competence and confidence, before they practice the skill on a real patient. Some clinical skills, such as resuscitation, can be taught in skills labs, which would involve more than just performing the skill manually; in addition they gain knowledge on why it is done, benefits, potential risks and communication skills related to the case scenario.

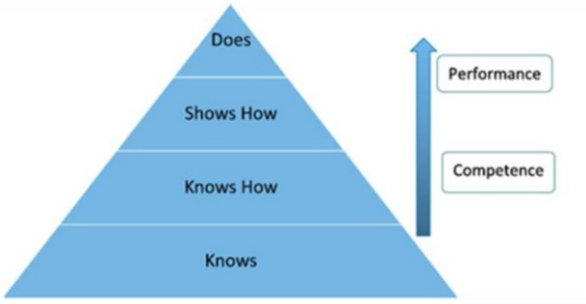

Figure 1: Framework for clinical assessment (adapted from Miller, 1990)

In a systematic review it is shown that the most effective approach to aligning procedural skills training with the needs of adult learners is a high-quality simulation that includes repetitive practice, mastery of learning, and deliberate practice, supplemented by visual aids, such as videos (1).

As with any other teaching procedure, the environment must be conducive to proper learning, especially with skills training. Preparation of the environment in which the skill is taught is essential for a successful outcome (2). The instructor should ensure that all the equipment needed to teach the skill is available and that they are in function. Then the candidates should be given clear, realistic learning outcomes before the practical session.

Skills need to be broken down into small, discrete steps when teaching others to demonstrate and communicate precisely what is required. Although there are many models, a practical, well-researched method is Peyton's approach, which can be applied to teaching in the clinical setting (4) (Table 1). In that model, there are four steps as follows.

1. The instructor demonstrates the skill at his usual pace without any comments. To create realism, the demonstration is performed in real-time. No commentary or explanations are given. However, verbalisation that accompanies the skill should be included, for example shouting for help in an emergency.
2. The instructor repeats the procedure, this time describing all necessary sub-steps - Repeat the demonstration with a dialogue explaining the rationale for every action. During this stage, there is an exchange of facts and ideas between the teacher and the learner. This enables the candidate to gain clarity.
3. The learner has to explain each sub-step. At the same time, the teacher follows the student's instructions - This allows the student to gather and organize information to form a useful pattern, which would be their future behaviour. Here the responsibility for the performed skill is moved from the instructor toward the learner.
4. The learner performs the complete skill himself on his own - It completes the teaching and learning process by transferring the ability from the expert to the novice.

A controlled trial by Krautter *et al.,* found that using Peyton's four-step approach to teach a four-step skill was superior to standard instruction, with benefits in the areas of professionalism, communication, and faster performance of the skill (5). Peyton's four-step approach helps learners observe the skill performed in real-time, from beginning to end. The instructor repeats the procedure thrice before attempting the skill to be practiced by the learner, which helps reinforce learning. Moreover, it gives them opportunities to correct any errors through feedback.

Providing constructive feedback on the learners' performance is an essential component in acquiring skills by the novice. There are many models of feedback that can be applied to skills teaching (6). Pendleton's feedback model which is a participant-driven method of feedback will ensure the learner reflects first on their own performance (7) (Figure 2). Immediate feedback helps prevent the risk of the skill being performed incorrectly, stored in long-term memory, or recalled and performed incorrectly (1). The feedback should be withheld until the conclusion of the skill to allow the learner to practice while focusing on each element of the skill (1). Feedback should be given immediately after the skill performance for the learner to practice areas requiring improvement correctly (6). The opportunities should be given to the learner to ask questions at the end of the skill session.

Table 1: Payton's four-step approach

1. **Demonstration**:	The instructor demonstrates the skill at normal speed and without additional comments.
2. **Deconstruction:**	The instructor demonstrates the skill by breaking it down into simple steps, while describing each step.
3**. Formulation:**	The instructor demonstrates the skills whilst being 'talked through' the steps by the learner.
4. **Performance:**	The student demonstrates the skill while describing each step.

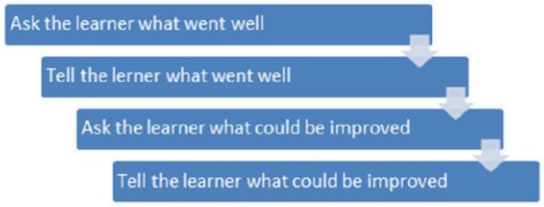

Figure 2: Pendleton's feedback model

Acquiring competency in clinical and procedural skills is fundamental in healthcare training. Teaching these skills to a doctor is a complex task. When teaching skills to learners, knowing how to do this most effectively in the clinical setting is essential. Simulation manikins offer the opportunity to practice procedures without risk of patient harm and are commonly used in training and assessment. The stepped structural approach is the best guide in skills acquisition and retention, and providing constructive feedback is also an integral part of this skills teaching process. Once skills are acquired, one must maintain those skills through deliberate practice on regular basis.

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