Teaching on the run tips 5: teaching a skill

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Setting

You are a registrar with a new intern who has had little experience with arterial puncture for blood gas analysis. You show her how to do one, then suggest she'll get practice when on call that night. She could even show the medical student how to do them, so he can help out.

Junior doctors need to have the skills to competently perform a wide range of procedures, and inability to do so is an important stressor for a new doctor.[1] Skills may range from carrying out practical tasks (intravenous cannulation), to examining patients (cranial nerve examination), to communicating well (breaking bad news). Teachers rated practical skills teaching 11th in a list of educational themes they felt they needed instruction on, whereas junior medical officers ranked it 5th, suggesting that we don't teach as well as we think we do.[2]

How are skills learnt?

Simulated patients, videos, manikins, computers and virtual reality technology are increasingly being used to ensure that trainees learn skills in a safe environment, receive feedback, and reach a certain level of competence before they use the skills on patients.[3]

The first trainee year is critical for learning many of these skills.[4] Skills centres are playing an increasing role these days, but the challenge is to make sure that laboratory-learnt skills are safely implemented in the workplace. Abundant opportunities arise during work that learners are eager to be involved with. As practising clinicians, part of our teaching role is to decide whether junior staff can safely carry out procedures on patients under our care.

Skills require more than performing tasks. They include:

- Knowledge (indications, contraindications, complications and their prevention);
- Skill (preparation, technique, dexterity); and
- Communication (consent, comfort and dignity of patients; realising when to get help).

How are skills learned on the job? The "see one, do one, teach one" approach is limited, often failing to teach the skill properly or to check whether the trainee can perform the skill.

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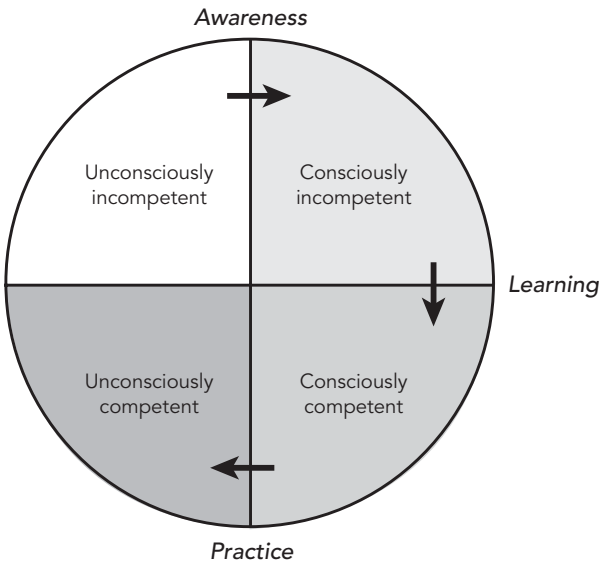
Stages in acquiring skills



Modified from Peyton.[7]

A four-step approach to teaching skills

One way of teaching skills, suggested by Rodney Peyton of the Royal College of Surgeons,[5] uses four steps:

- *Demonstration.* Trainer demonstrates at normal speed, without commentary.
- *Deconstruction.* Trainer demonstrates while describing steps.
- *Comprehension.* Trainer demonstrates while learner describes steps.
- *Performance.* Learner demonstrates while learner describes steps.

This four-step approach ensures that the teacher breaks the process into manageable steps, asks the learner to vocalise the steps, and provides repetition to reinforce the learning and correct mistakes.

Session structure

In applying Peyton's model, consider the structure of the session, as described in "Tips 3":[6]

- *Set.* Have you made assumptions about the learners' basic knowledge ("You know that, don't you?"). Consider their orientation: are they sitting beside you or opposite (mirror image)? are they left- or right-handed? can they see?
- *Dialogue.* Have you broken the procedure into clear steps? Is the task too large to learn at one sitting? Are you giving positive feedback (what they did well, what they could improve)? Have you corrected mistakes? Avoid talking too much — either giving too much detail (trying to cover too much in one sitting) or chatting about something else (worried they are bored).
- *Closure.* Can they do it? Do you need to explain how the procedure may differ under different circumstances?

Take-home message

- Teaching a skill involves knowledge (indications, contraindications, complications and prevention); skill (dexterity, performance); and communication (consent, dignity, realising when to get help).
- When teaching a skill, consider using or adapting a four-step approach.
- Consider the structure of your teaching session: *set* (prior learning, orientation), *dialogue* (manageable steps), and *closure* (application to other settings).

Application in practice

Rarely are four patients lined up to allow you to take someone through the four steps one after the other. However, each step adds an important component. How can the model be adapted to reality?

- Step 1 should be demonstrated with a real patient. It is important to allow the learner to identify with a competent performance.
- Steps 2 and 3 can be done theoretically or with the equipment, away from the patient.
- Steps 1 and 2 can be repeated in a larger group (eg, with a video), then steps 3 and 4 can be done in small groups.
- Steps should be done in more than one sitting.

Consider the way you currently teach a skill and think about what the four-step approach may add

Practice makes perfect

By following the four-step approach, the trainee has shifted from being "consciously incompetent" (realising they can't do it) to being "consciously competent" (being able to do it with great thought) (Box). Only with repeated practice will he or she be able to perform satisfactorily in a variety of situations.

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Competing interests

None identified.

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