

TEACHING PROCEDURAL CLINICAL SKILLS TO HEALTH CARE PROFESSIONALS IN GHANA; THE NEED TO EMBRACE THE NEW PARADIGM SHIFT

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Summary

Health professionals training in procedural skills at the undergraduate and postgraduate levels remain a challenge. It has traditionally been based on the principles of “see one, do one and teach one”. This article highlights the usefulness of the Walker and Peyton’s four step framework for teaching procedural skills and the Pendleton’s rule for giving feedback. There is the need to embrace the new paradigm shift

with defined goals that allow for feedback by both trainee and trainer.

Trainers should review and adopt the best approach for teaching clinical skills, and the requirements for achieving skill mastery to ensure clients safety and ensure the training of competent clinicians for the future.

Key Words: Procedural clinical skills, Pendleton’s rule, Walker and Peyton and Teaching.

Background

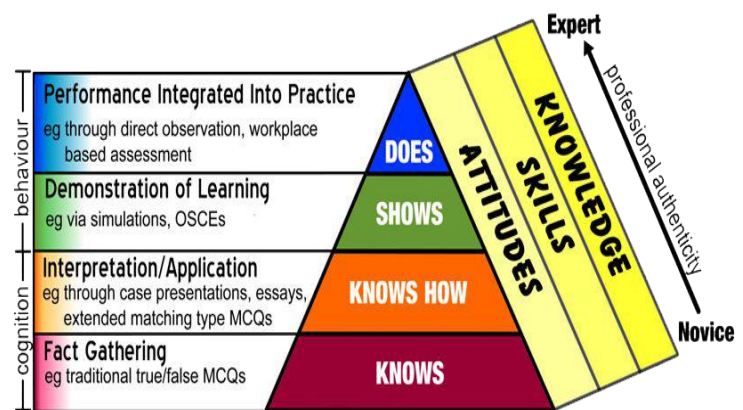
The teaching of psychomotor or procedural clinical skills to undergraduate and postgraduate health professionals remain a challenge. It has traditionally been based on the principles of “see one, do one and teach one”. During skills training the trainee is exposed to a wide spectrum of practical procedures over a period. This ranges from simple procedures such as a peripheral intravenous cannulation to a more complex one such as endoscopic retrograde cholangiopancreatography. There is the need to explore other means of teaching and evaluating practical skills beyond the traditional principle of “see one, do one, teach one”. Those with the responsibility of providing health services must first be aware and embrace the need to change or update their practices. There is a need to create the platform for health professionals to upgrade their knowledge, skills and attitude¹. This can be done through targeted in service training for those already practicing, or strengthened pre-service education. Effective education provides a balance of theoretical and practical experiences to enable learners develop competencies that are important for their entering a healthcare profession and continuing to develop professionally throughout their careers. The social, cultural, historical and political forces interplay to mould teaching and learning, and thus the essential competencies that learners must develop.

Principles of clinical skill teaching

The Miller’s pyramid² demonstrates the skill learning hierarchy (figure 1). It involves four levels of competency assessment which are trainee knows, knows how, shows and finally does. “KNOWS” essentially describes fact gathering and is assessed through essay writing and multiple choice questions. “KNOWS HOW” assesses the interpretation and application of the knowledge acquired. “SHOWS” deals with demonstration of learning through simulation and real life practical sessions. “DOES” Here trainee performs through direct observation and in some cases through workplace based assessment. The pyramid demonstrates the transition from a novice to an expert through knowledge acquisition and the development of the right skills and attitude.

MILLER’S PRISM OF CLINICAL COMPETENCE (aka Miller's Pyramid)

it is only in the “does” triangle that the doctor truly performs



Based on work by Miller GE. The Assessment of Clinical Skills/Competence/Performance; Acad. Med. 1990; 65(9): 63-67
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)

Fig 1. Miller’s Prism of clinical competence

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In the field of education, research has demonstrated that learners require an appropriate environment and a variety of learning activities that include opportunities to practice and receive feedback on their performance⁵.

The trainer must have the requisite knowledge, skills and attitude to move a novice from the level of unconscious incompetence (baseline awareness) to the level of unconscious competence (Mastery). From the learning cycle an individual may start from any of the levels of psychomotor skills. The individual at unconscious incompetence stage is usually unaware of the procedure and therefore cannot tell his level of competence regarding the clinical skill in question. Following awareness or exposure to the skill, the learner then moves to the conscious incompetence stage where he or she becomes aware of his inadequacy at performing that skill. Following competency based learning i.e. learning by doing one moves to the conscious competence phase where thinking, attention and staying focused is required to complete a task. At this phase the trainee requires a full attention with no distraction if not a lot of errors or complications will result. As the performance of this skill is done repeatedly the trainee now acquires mastery and is now said to be at the unconscious competence level. At this level the trainee is described as an expert or a master of that particular skill.

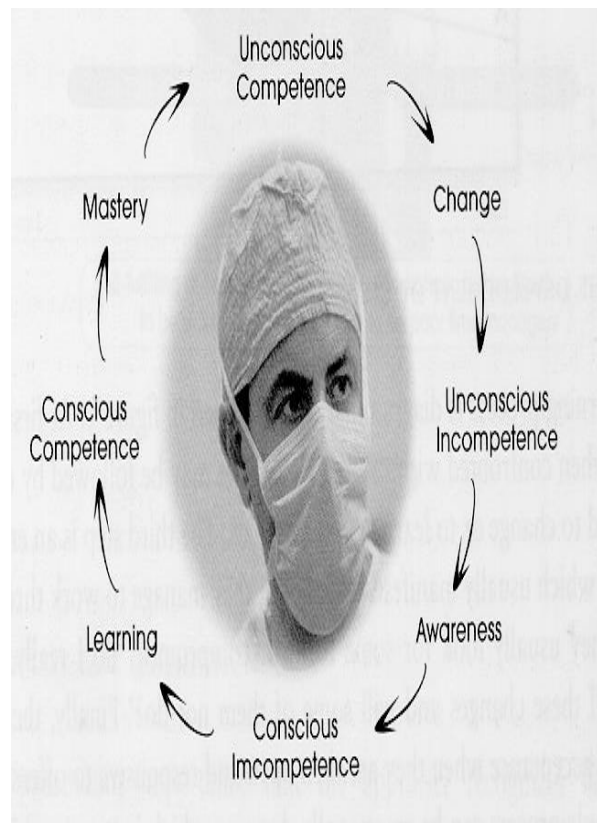


Fig 2. The learning Cycle

In teaching clinical procedural skills, one is required to understand key principles that inform teaching and learning of these skills. It is the responsibility of the trainer to assist the trainee to appreciate the various components of a particular skill. The trainee should also develop understanding of the various elements which include;

- Conceptualization – where skill fits and why important
- Visualization - seeing the skill
- Verbalization – talking the skill
- Physical practice - doing the skill
- Correction and reinforcement - feedback on the skill

A high level of competence at performing a particular skill is required for one to be considered a trainer of psychomotor or procedural skills. Training must be done such that it provides a balanced feedback within a structured approach, assess the proficiency of the learner and ensure that there is a gradual decline to the extent of supervision which allows the trainee to feel that they are supported fully and trusted to perform the skill as an autonomous practitioner. Doheny showed that those trainers who combine the opportunities for their trainees to mentally rehearse the skill with opportunities for the physical practice of each new skill can increase the accuracy with which the procedure is conducted significantly quicker than physical practice alone (Doheny 1993)⁵.

Trainer challenges

It is often a challenge for a trainer who has been routinely performing a complex procedure usually in the “auto pilot” mode to assume the role of a trainer. The expert operating at the level of unconscious competence must deconstruct the procedure to its various stages and elements required for a competent final execution of the skill that is the expert becoming consciously competent. In the same way the novice is unaware of the task to be performed and it is the responsibility of the trainer to bring to the fore this awareness. Here the trainee is brought to the level of conscious incompetence and this primarily helps the trainer to protect clients and define the learning objectives for the trainee.

One of the challenges faced by trainers is the readiness or otherwise of trainees to carry out more advanced procedures on clients at the hospital setting. Grantcharov and Reznick (2008) proposed pre-patient training i.e. use of manikins and simulated patient consultations as a solution which can be adapted in a modified form for our setting⁴. Simulation for skills training in health care education has been evolving at an accelerating rate (Khan et al., 2011). This development has permitted the introduction of new methods of skills training besides the traditional ways. In settings where virtual reality simulators are used, the students can make mistakes without harming anyone

(Baxter et al., 2009), and the training enables learning to take place in a safe, non-threatening environment^{7, 8}

Traditional approach to clinical skills training

Many procedures are still thought on the principles of “see one, do one and teach one “. The extent to which this principle is impacting the level of competence in psychomotor or procedural skills training amongst trainees in Ghana is not known. This procedure stills allows the expert to operate at the level of unconscious competence which makes teaching and learning very subjective. There are no predefined objectives for the training and no structured feedback pathways for both trainee and the trainer. It will be very useful in our environment to adopt the four-step structured model for clinical skill teaching which allows for effective feedback and evaluation.

The 4 step model for teaching clinical procedural skills

The traditional approach has become less useful in current medical procedural skills teaching. It is difficult for the “unconsciously competent” to relate to the novice. Walker and Peyton⁹ and Lake and Harndorf’s¹⁰ four step framework for teaching procedural skills is helpful.

Step 1. Real life demonstration

The trainer demonstrates the skill in its entirety in real time and without commentary. This serves as a model of the finished product which allows trainees to observe the mastery of the skill.

Step 2. Deconstruction (Trainer talk through)

Here the trainer breaks the procedure into discrete steps. This stage shows how a complex process is made up of simple steps. The trainer repeats the procedure whilst explaining each step and manoeuvre, answering trainee questions or clarifying any points.

Step 3. Learner comprehension (Learner talk through)

The trainee directs the trainer, providing instructions to the trainer on each step and manoeuvre and the trainer does the skill. Trainee must be able to describe the steps correctly before he or she attempts the procedure

Step 4. Learner performs

The trainee does the skill under close supervision, articulating the key steps before doing them. Feedback is vital at this stage.

Subsequently, the learner practices under varying levels of supervision, with appropriate feedback, until they have reached a desired level of skill to perform independently.

Considering the use of this four step model will be beneficial to the teaching of clinical skills at all levels of health professionals education in Ghana. It must also be noted that this rigid approach may not be feasible for all procedural skills and appropriate modification to get the best benefit should be done.

Finally it must be noted that learning the correct technique is only part of competence and therefore effort must be made to ensure that the trainee knows the following;

- Indications
- Contraindications
- Complications and their management
- Follow up requirements

The role of feedback and evaluation in clinical procedural skill training

Feedback is the information given to a trainee or trainer but more commonly to a trainee about their performance. This can be intrinsic when there is a sense of a job well done, or perhaps one that could have been done better. The extrinsic feedback is the one that is provided by the supervisor or peer. It is important that feedback be as constructive as possible so it acts as motivation to drive the learning process. For adult learning, one of the key issues in giving constructive feedback is enabling the learner to reflect. There is the need for a well organised system of giving feedback to all trainees during their medical training.

The Pendleton’s rule for giving feedback⁹ and evaluation is a very good tool that needs to be incorporated in our skill training programmes in Ghana. It has a clearly defined set of questions that allows for reproducibility in terms of same feedback and evaluation for trainees in our institutions. The difficulties we all experience in giving feedback relate to our need not to destroy the other person. We often avoid areas that could be contentious or seem overcritical. Unfortunately, this often leads to a kind of cosiness, where feedback is restricted to broad comments on the skill performed without clearly dissecting and potentially improving on the skills demonstrated. The most important part of feedback is offering an alternative to the skill or task being analysed. In this way the giver of feedback is also open to criticism by the receiver, and dialogue can then begin about the skills or attitudes in question.

Pendelton’s rule for giving feedback^{9, 10}

- Firstly the trainee performing a skill says what went well and how.
- The observer (trainer or other trainees) depending on the setting, say what went well and how.
- The trainee then says what could have been done differently and how
- The observers than add what could have been done differently and how
- The pair or group then agree on areas for improvement.

Feedback in general should be considered as a normal teacher –student interaction. It should state clearly the criteria for performance assessment, giving feedback on specific behaviours rather than on general performance¹². It is usually preferred that feedback is

given on what was directly observed and in non-judgemental manner. It is more beneficial if given at the time of an event or shortly after so one can have a good reflection rather than at a later time where there is recall challenges. Feedback should ultimately lead to changes in the learner's thinking, behavior and performance^{13,14}.

Conclusion

Education is known to be more effective when expected outcomes build on existing knowledge, skills, and attitudes, are relevant to the future tasks of the healthcare provider, correspond to the health needs of a society, and are supported by policies and practices in governments and at healthcare facilities. All health professionals in Ghana have an important role to perform in terms of an agreement on the standards for training in clinical procedural skills. We need to provide opportunities for the trainee to practice just as we need to have regular critical scrutiny of performance coupled with constructive feedback. Teaching procedural skills is a routine role of many teachers in the health care system in every country. It is important that trainers review and adopt the best approach for teaching skills, and the requirements for achieving skill mastery. We recommend the adoption of the Walker and Peyton's four step approach and the Pendleton's rule for giving feedback to ensure clients safety and ensure the training of competent clinicians for the future.

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