

Teaching and learning

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"A teacher affects eternity; he can never tell where his influence stops", Adams (1907)

Throughout this article, there are a series of three activities designed to help give the reader some insight into their own teaching practice. To gain maximum benefit, they should be attempted before further reading of the article. By reflecting upon current practice, the reader will gain a greater understanding of the techniques and principles described.

The specialty of emergency medicine has a long association with teaching. By virtue of its role in the acute phase of patient management and the "hands on" nature of the specialty, emergency physicians often take a prominent role in both undergraduate and postgraduate education. In addition, emergency physicians form a significant proportion of the faculties for most of the short courses run by the Resuscitation Council (UK), Advanced Life Support Group and the Royal College of Surgeons.

Traditionally, doctors have had little training in how to teach properly. Senior clinicians may follow the bad example of how they were taught as juniors and as such perpetuate bad practice. The assumption that consultants and, in particular, "teaching hospital" consultants are natural teachers should no longer be accepted.

In the current climate of clinical governance, effective teaching is just as important as audit and risk management issues. In order to safeguard high standards of care, NHS Trusts should be able to demonstrate that their personnel can deliver high quality teaching.

Activity 1

Think of a recent teaching session led by yourself. What were the objectives of this session?

In order to perfect your teaching skills, it is important to understand how students learn. There are essentially two different approaches to learning—the "surface" approach and the "deep" approach.¹

Surface approach

In this approach, the students will memorise facts with a view to subsequent regurgitation of these facts. They will blissfully sit through didactic sessions making copious revision notes and success is judged by the accuracy of reproduction of the facts at a later date. No understanding of the subject matter is needed and retention of facts is subsequently short-term. This approach is used predominantly when the syllabus contains an excessive amount of material with little chance to explore the subject in greater depth. It is also

used if a subsequent assessment method relies upon regurgitation of facts.

Deep approach

In contrast, the deep approach involves learning by understanding the subject matter. Students are encouraged to interact with each other and learn by solving problems. By gaining a greater understanding in the subject and exploring further issues, they are able to retain their knowledge for a longer period.

Activity 2

When considering your recent teaching experience, what approach to learning did you foster?

Effective teaching should foster a deep approach to learning. Unfortunately, most of the easier techniques such as lecturing and didactic tutorial sessions promote surface learning unless carefully planned.

Following are some suggestions to help facilitate better teaching and the promotion of "deep" learning.

Principles for good teaching

TRAVEL FROM THE "KNOWN" TO THE "NEW"

Teaching a subject is greatly enhanced by relating it to another previously covered subject. This method builds upon critical baseline information and leads candidates on to a new subject. This has been referred to as the "advance organiser" model of teaching.²

Example: Application of the knowledge of basic cardiac electro-physiology and anatomy to the interpretation of an ECG

ENCOURAGE FREE THOUGHT

Effective teaching involves encouragement of problem solving and critical thinking. When using higher order thinking skills, the student will be able to immerse him/herself in the subject and learn through understanding. The time and the ability to use this method of learning should be built in to the teaching programme.

Example: Encourage juniors to read around a subject rather than constantly supplying a ready answer to clinical dilemmas

APPLICABILITY AND RELEVANCE

The material taught has to be applicable to the candidate group. This may seem obvious but it is not always adhered to.

Example: When asked to teach the nursing staff about trauma management, do not concentrate purely upon the doctor's role in the team approach

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Accepted for publication
11 May 2001

CONTENT AND STRUCTURE

It is imperative that the content and structure of the teaching episode is appropriate for effective learning. The teacher should plan the session around what the students should learn rather than what he/she would like to teach. In addition, the teacher should avoid the temptation to burden the session with too much “excessive baggage”.

HAVE A GOOD RELATIONSHIP

A deep approach to learning will never be fostered by a remote, aloof or unfriendly approach to teaching. The teacher should try to cultivate a supportive, friendly and accessible style while still maintaining the respect of the students.

Principles for encouragement of good learning**LEARN BY DEEP APPROACH**

Much is made, quite rightly, of the deep approach to learning as compared with the surface approach. It would therefore be dangerous to accidentally ignore such an obvious concept from a list of principles. If students can be encouraged to learn a subject through understanding rather than memorisation then deep learning is happening.

ENCOURAGE USE OF CONTENT

It is not enough to teach a subject to candidates. They should be encouraged to think how they will utilise the content of the subject. By learning to implement the knowledge that they have acquired, students learn to a greater depth.

Example: After a teaching on blood gas interpretation, involve your student in the management of patients in the department who have had blood gas samples taken

AUTONOMY AND OWNERSHIP

Students who have autonomy in their learning are more likely to foster a deep approach to learning.³ This results from a greater degree of interest and motivation.

Example: Allow senior house officers to design part of their protected teaching syllabus. Allow

them to highlight areas they feel weak in and teach them accordingly.

REAL WORLD

It is important that students learn a subject in the right context. They will get a better understanding if the subject matter is set in the real world rather than a hypothetical environment.

NEEDS OF EACH LEARNER

The concept of the “global learner” is a weakness as there is the potential to ignore some of the students’ needs. Students have different styles of learning and this should be recognised. If necessary, there should be facilities for counselling to ensure that all of the students are up to speed with their colleagues.

Example: Senior house officers come from different backgrounds (for example, surgeons, physicians, general practitioners) with differing levels of experience. Adapt your teaching programme to cater for this.

Activity 3

When considering your recent teaching experience, map out the changes you would make to the delivery and/or content of this session to facilitate deep learning.

Summary

When delivering any teaching session, formal or informal, time should be taken to consider the structure of the session to ensure effective learning. This will inevitably take more time and effort but “prior preparation prevents poor performance”. Investment in this time will be more productive than the wasted time of delivering an ineffective session.

- 1 Gibbs G, ed. *Improving the quality of student learning*. Technical and Education Services, 1992.
- 2 Ausubel DP. *Educational psychology: a cognitive view*. Holt, Rinehart and Winston, 1968.
- 3 Boud D. *Developing student autonomy in learning*. 2nd ed. Kogan Page, 1988.