Assessment of Learning

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So far in this series we have looked at how people teach and learn. We have discussed how we should go about planning a curriculum, and we have considered the methods that are available for us to use when we teach. In this article we look at a critically important aspect: the assessment of learning. Why is it so important?

Assessment is the Heart of Learning

Assessment drives learning. Students take great trouble to find out exactly what the examination will be like. Why is this? Because they want to pass the examination, of course! There is always too much to learn, so it makes sense to concentrate on what you need to know to pass the exam. We may want our students to be able to make diagnoses – but if our tests only test facts, the students will quickly learn just to memorise facts. If, on the other hand, they know that the test consists of clinical problems to diagnose and manage, they will study each clinical problem in such a way that they understand it well enough to diagnose and manage it. If there is no practical in the exam the students will stay out of the clinical areas to spend all their time with their books. But if they know there is going to be an OSPE* they will spend time with patients to make sure they have mastered all the skills.

REMEMBER: ASSESSMENT DRIVES LEARNING!

What does this mean, practically? It means we have to plan our assessment very carefully, in such a way that our students will learn what we want them to learn. If we want students to learn how to manage patients, our exam questions must be patient case studies in which we ask students what their management will be.

Why do we Assess Students?

The main reason is obvious: we want to see if they have learnt what we have taught them. This kind of assessment, which is done at the end of a period of teaching, is called *summative* – it is a 'summary' of what the students have learnt. But there are also other reasons for assessment:

- Assessment is very important for our students, because it shows them where they are falling short. That it why teachers should always discuss exams with students afterwards, to show them what the right answers were, and where they made mistakes. For the same reason, students must be given their marks, and their exam scripts, as soon as possible. Assessment which is done in this way, while the students are still learning, is called *formative* – we are 'forming' or 'improving' the students.

Skill/enabling factor to be examined	Suitable assessment method
Manual skill	
• Performing a tarsal rotation procedure	• The student has to *perform* the operation on a patient with upper eyelid entropion, while the teacher watches and marks her/ his performance with a *checklist.*
Communication skill	
• Educating a family on how to prevent trachoma	• The student has to *educate* a family on the prevention of trachoma, while the teacher watches and gives marks with a *checklist.*
Decision making skill	
• Diagnosing and treating a case of trachoma	• The student is presented with a patient suffering from trachoma. S/he has to *examine* the patient and make a diagnosis, while the teacher *watches*. • The teacher can also give the students a *written case study,* which gives the history and examination findings, and ask them how they would manage the patient.
Knowledge	
• Knowledge of symptoms, signs, stages, the organism, medication, anatomy, spread, prevention, etc.	• *Written* examination with short questions, MCQs, essay questions. • *Oral* examination.
Attitude	
• An attitude of concern and caring	• The teacher *observes* the student as s/he works in the clinic. After a week or so the teacher uses a *checklist* to make a final assessment of the student's attitude.

- We are training health workers to do a job. To protect society, we should only send out students who are *safe* – who know their work well enough not to harm anybody. One of the reasons for our final examination of students is to make sure that they are safe. Society expects us to do a good job!

Assessment should be *Valid*

Good assessment is *valid*. *This means that it tests what it is supposed to test.* Perhaps you want to test your students, to see if they can measure intraocular pressure. You can ask them to write short notes on how to use a Schiotz tonometer – but that will not tell you if they can really do the job. Your method of testing is *not valid*. A better way is to stand by and watch them while they do it with a patient – then you will really know if they can do it. This second method of testing is *valid*.

In an earlier article we discussed the domains of learning. We saw that each domain is taught in a different way. The same is true of assessment – we assess each domain in a different way. In the table below you will find examples of how we should assess the learning of our students, for each domain:

If you follow the guidelines in this table, your assessment is likely to be valid – it will test what it is supposed to test.

Some teachers like to ask 'trick questions' to catch out their students. Others like to ask questions about very rare, very obscure diseases. Such assessment is not valid. Valid assessment should be straightforward, and should focus on the 'must know' and 'must be able to do' – the things that are really necessary for day-to-day practice.

Assessment should be *Reliable*

Good assessment is *reliable*. This means that if we repeat the assessment on the same student at another time, or use another examiner, the mark will be the same.

Some forms of assessment are more reliable than others. An OSPE* is more valid than old-fashioned practicals which use different patients for different students. A written exam (where everyone gets the same questions) is generally more reliable than an oral one (where different candidates get asked different questions by different examiners).

You can make any form of assessment

'Assessment' or 'evaluation'?

These two words have different meanings for different people. In the UK people 'assess' students to find out if they have learnt, and they 'evaluate' programmes, to see if they are effective. In the United States the two words are often used the other way around – they 'evaluate' students and 'assess' programmes. It doesn't matter which word you use, as long as you tell other people what you mean.

Multiple Choice Questions – beautiful but deadly?

MCQs consist of a leading statement or *scenario*, followed by a number of answers or *options* for students to choose from. They have become very popular and they are also very easy to mark. On the other hand they have a number of serious drawbacks:

- Examiners tend to use them to assess facts, rather than patient management
- If there are only two or three options, students may get marks from guessing
- Research has shown that students very often misunderstand them.

For all these reasons MCQs often have low *validity*. They have to be carefully tested for comprehension, before being given to students to use. People who write MCQs should receive some form of training first, or consult a textbook.

more reliable by giving a little thought to the matter. Practical exams are more reliable if you use a checklist to mark the student's performance. Written exams are more reliable if the markers are guided by a very clear document which shows how marks are allocated for each question.

Finally: teachers often spend more time on preparing lessons and teaching them, than they do on assessing the results. Any time you spend on improving your assessment will be richly repaid – your students will be better learners as a result.

The next article in this series deals with the resources that teachers and students need. Watch this space!

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*What is an OSPE?

The OSPE is a special kind of examination that is now commonly used. What do the letters mean?

- **O** stands for **Objective**. If different students are given different patients to examine, this could be unfair: some patients and conditions are easier to examine than others. So, in this examination, every student gets the same patient – that is why we say it is objective.
- **S** stands for **Structured**. Several skills are tested at one time. Each skill is tested in a separate room, called a station. At each station there is a card with clear instructions for the student; all the equipment s/he needs; a patient (if necessary); and an examiner with a checklist for doing the marking. There may be ten such stations in an OSPE, and ten students are then examined together. Each starts at a different station, and after 10–15 minutes a bell rings and they move on to the next one.
- **P** stands for **Practical**. This means that this exam is practical – it only tests the skills of the students. It could be manual skills, like examining the anterior chamber of the eye, or it could be a communication skill, like taking a patient's history. (Some people prefer the word Clinical – so that makes their exam an 'OSCE'.)
- Finally, **E** stands for **Examination** – no surprises there! Good OSPEs are an excellent way of examining skills. They take a lot of time and preparation, but so do all practical examinations.