Chapter

# 13 Bedside teaching

Section 2. Learning situations

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## Introduction

Clinical teaching at the bedside encapsulates the traditional view of medical training. Students are motivated by the stimulus of clinical contacts but this archetypal experience of the consultant-teaching ward round has not been without its shortcomings. Students may feel academically unprepared or inexperienced in the learning style required in an unfamiliar environment (Seabrook 2004). Inappropriate comments, late starts and cancellations may discourage and alienate students so that the value of this resource is dissipated. Finally, today's teaching hospitals may have fewer patients appropriate for bedside teaching despite the needs of larger student groups attending.

> "To study the phenomena of disease without books is to sail an uncharted sea whilst to study books without patients is not to go to sea at all"
>
> *Sir William Osler (1849–1919) quoted by Nair et al 1997*

> "Most medical students are taught by a system of negative reinforcement in the form of sarcastic remarks and derogatory comments"
>
> *Newton 1987*

Despite these problems ward-based teaching provides an optimal opportunity for the demonstration and observation of physical examination, communication skills, interpersonal skills and for role modelling an holistic approach to patient care. Not surprisingly bedside teaching and medical clerking have been rated the most valuable methods of teaching (Ward et al 1997). Despite this, however, bedside teaching has been declining in medical schools since the early 1960s from 37% to 16% (LaCombe 1997) as interest in clinical acumen declines with the rise in popularity of technology, imaging and laboratory investigations.

> "Bedside teaching is the only site where history taking, physical examination, empathy and a caring attitude can be taught and learnt by example"
>
> *Nair et al 1997*

## The 'learning triad' and its environment

Clinical teaching brings together the 'learning triad' of patient, student and clinician/tutor in a particular clinical environment. When all works well this recipe provides a magical mix for producing effective student learning. Direct contact with patients is important for the development of clinical reasoning, communication skills, professional attitudes and empathy (Spencer et al 2000). But for the mix to work a degree of preparation is required from each party involved (Fig. 13.1).

### Patients

Patients should be invited to participate without coercion and have the opportunity to decline to take part without feeling intimidated. Some institutions may require formal documentation of informed consent before patients can participate. They should be adequately briefed so that they know what will be expected of them, feel a part of the discussion and feel empowered to deal with the event. They may be required to give some simple feedback comments to students afterwards. The majority enjoy the experience and feel they have contributed to student learning. Concerns about breach of confidentiality and about provoking increased anxiety have been shown to be unfounded (Nair et al 1997).

> "Learners think that BST [bedside teaching] is an effective method for teaching professional skills and that most patients enjoy it"
>
> *Nair et al 1997*



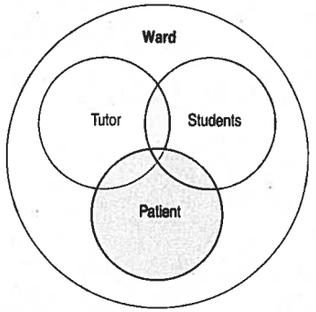


**Fig. 13.1** The learning triad and its environment

Depending on the model of ward teaching to be used, a variety of patients will be required for varying lengths of time but consideration should be given to patients' needs and the possibility that other healthcare staff and visitors may need to see them.

### Students

It is initially valuable for junior students to have had access to simulated patients who provide valuable learning opportunities for the examination of normal anatomy and physiology. This prepares them well for seeing patients in clinical situations. Between two and five students is probably the optimal number for bedside teaching. Students should comply with the medical school's guidelines about appropriate appearance and behaviour and introduce themselves to staff and patients clearly stating the purpose of their visit.

Initially, some may feel intimidated by an unfamiliar environment and the proximity of nursing staff and be embarrassed when putting personal questions to a stranger. In addition they may feel anxious if unsure of their knowledge base or clinical abilities and fearful of consultant criticism of any inadequacies. As a result some students position themselves towards the back of the group round the bedside to avoid participation while more confident colleagues monopolise conversations with patients and tutors. An observant tutor will be aware of this behaviour and be able to redress the balance and ensure that all students participate and that anxieties are allayed.

### Tutors

Tutors for ward-based teaching may be consultant staff, junior hospital doctors (Busan et al 2003), nurses or student peers. Kilminster et al (2001) found that a tutor, specialised in ward-based teaching, was most useful in helping students developing history taking and examination skills.

Whether they acknowledge it or not tutors are powerful role models for students, especially for those in the early years of the course so it is most important that they demonstrate appropriate knowledge, skills and attitudes. Prideaux and colleagues (2000) describe good clinical teaching as providing role models for good practice, making good practice visible and explaining it to trainees.

Seven roles for analysing good clinical teaching:
- medical expert
- communicator
- collaborator
- manager
- advocate
- scholar
- professional

*Prideaux et al 2000*

## Appropriate knowledge

Experienced clinical teachers are soon able to assess both the patient's diagnosis and requirements as well as the students' level of understanding. This ability to link clinical reasoning with instructional reasoning enables them to quickly adapt the clinical teaching session to the needs of the students (Irby 1992).

Experienced tutors link:
- clinical reasoning with
- instructional reasoning

Six domains of knowledge have been described which an effectively functioning clinical tutor will apply (Irby 1994):

- Knowledge of medicine – integrating the patient's clinical problem to background knowledge of basic sciences, clinical sciences and clinical experience
- Knowledge of patients – a familiarity with disease and illness from experience of previous patients
- Knowledge of the context – an awareness of patients in their social context and at their stage of treatment
- Knowledge of learners – an understanding of the students' present stage in the course and of the curriculum requirements for that stage
- Knowledge of the general principles of teaching, including:
  - getting students involved in the learning process by indicating its relevance
  - asking questions, perhaps by using the patient as an example of a problem-solving approach to the condition
  - keeping students' attention by indicating the relevance of the topic to another situation
  - relating the case being presented to broader aspects of the curriculum

- meeting individual needs by responding to specific questions and providing personal tuition
- being realistic and selective so that relevant cases are chosen
- providing feedback by critiquing case reports, presentations or examination technique

- Knowledge of case-based teaching scripts – the ability to demonstrate the patient as representative of a certain clinical problem; the specifics of the case are used but added to from other knowledge and experiences in order to make further generalised comments about the condition.

> "Well, that's something we should both look up this evening"
>
> *A senior clinician in answer to a student's question during a teaching ward round*

## Appropriate skills

If demonstrating clinical tasks to students on the ward tutors must ensure that they are competent in performing them in the way being demonstrated elsewhere perhaps in the clinical skills centre. They must not display inappropriate 'shortcuts'.

## Appropriate attitudes

> "The essential feature is enthusiasm on the part of the teacher"
>
> *Rees 1987*

Tutors responsible for timetabled ward teaching must arrive punctually, introduce themselves to the students and demonstrate an enthusiastic approach to the session. A negative impression at this stage will have an immediate negative effect on the students' attitude and on the value of the session. Tutors must show a professional approach to the patients and interact appropriately with them and the students.

All those involved in ward teaching bring a different perspective of patient care which is valuable for student learning. Sometimes they will have received no specific preparation for the teaching session and may not know how any particular session fits into the totality of the students' clinical experience at a particular stage of the course. Staff development courses and guides to teaching are important to help these enthusiastic clinicians in their teaching role (Dent & Davis 2008, Ker & Dent 2002). Tutors' individual approaches to clinical examination will also differ as examination technique may not be standardised within the medical school. While it may be of benefit for more confident students to observe a variety of different approaches to clinical skills, weaker ones will find this lack of consistency confusing. Ideally, tutors should be briefed so that they are familiar with the approach to physical examination taught in the clinical skills centre and with the levels of expertise required of students at the various stages of the medical course.

## The ward

The educational environment of the ward may be affected by many factors (Seabrook 2004) which impact on student behaviour and satisfaction. However, with some thought some simple problems can be avoided.

Ward teaching should not take place when meals, cleaners or visitors are expected. It helps if the staff and patients are expecting the teaching session at a certain time so that X-rays and case notes can be ready and patients do not have to be retrieved from the day room or X-ray department.

The use of a side room for pre- or post-ward round discussion provides a useful alternative venue for discussion once the patients have been seen. Occasionally a member of the nursing staff may be present in the teaching session to add multiprofessional input to the patient care discussion. Stanley (1998) suggests that systematic planning and preparation, especially with increased use of pre- and post-round meetings, would provide more effective and structured training for postgraduate hospital doctors.

A teaching ward round deals with patients not diseases. It develops students' thinking processes and introduces an approach to patients that they will follow for the rest of their working lives as doctors (Rees 1987) (Fig.13.2). Often district general hospitals appear more valued than teaching hospitals (Parry et al 2002).

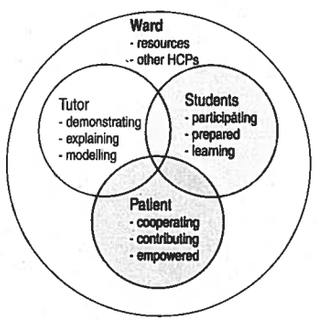


**Fig. 13.2** The learning triad and their contribution



# Delivery strategies

## Cox's cycle

A plan of two linked cycles has been described (Cox 1993) to maximise the students' learning from each patient contact.

The 'experience cycle' involves student preparation and briefing to ensure that they are aware of what they are going to see and the opportunities available for learning. Before beginning, students should be briefed so that they understand the purpose of the session and the goals to be achieved. Any warnings about the patient conditions to be seen should be given and checks made on students' level of initial understanding. This is followed by the clinical experience of interacting with their patient which may include discussing the illness, examining physical signs and thinking about management. The 'experience cycle' concludes after leaving the patient with debriefing when the data are seen and interpreted and any misperceptions or misunderstandings are clarified. The 'experience cycle' maximises the value of time spent with the patients.

The 'explanation cycle' begins with reflection, when students are encouraged to consider their recent clinical interaction in the light of previous experiences.

This is done by explication – the clinical experiences are understood at different levels and integrated into the students previous learning experiences; finally a working knowledge is synthesised which prepares the students for seeing a subsequent patient (Fig. 13.3).

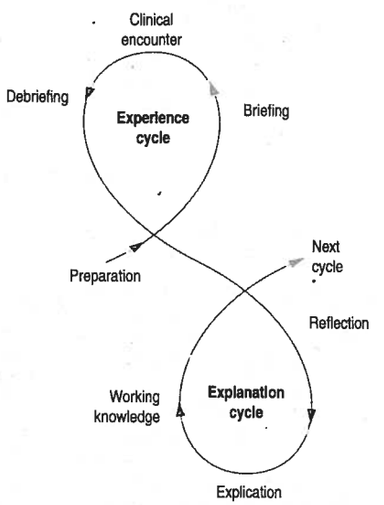


**Fig. 13.3** Experience and explanation cycles (redrawn from Cox 1993, with modifications)

# Outcome based education

Many of the educational objectives of the medical curriculum can be experienced to different extents by students at any stage of the course while they are working in the wards (Fig. 13.4):

- *Clinical skills*. For junior students there are opportunities to become proficient at normal physical examination while more senior students gain practice in eliciting abnormal physical signs.
- *Communication skills*. Many opportunities exist for students to practise communication skills.
- *Clinical reasoning*. Students can observe this in practice by junior and senior staff.
- *Practical procedures*. Venepuncture, cannulation of a peripheral vein, arterial blood gas sampling and bladder catheterisation are procedures which are readily available on most wards for students to practise.
- *Patient investigation and management*. There are many opportunities for students to observe and discuss aspects of both of these.
- *Data interpretation and retrieval*. Interpretation of laboratory reports and accessing scientific papers for reference are examples.
- *Professional skills*. The observation of both junior and senior doctors in their working relationship with other healthcare professionals should help students develop role models for professional behaviour.
- *Transferable skills*. Many of the abilities acquired in the ward setting will be of value in other doctor–patient situations.
- *Attitude and ethics*. It is hoped that appropriate attitudes and ethics can be observed by the students in their ward attachments.

All these aspects can be seen in the context of the patient as an individual rather than in the purely theoretical context presented in lectures. Students should be encouraged to return to the ward in private study time to practise clinical skills further. There is unlikely to be sufficient time for the session to be used formally for formative assessment but opportunities can be used to check on individual students' competencies in small tasks.

## Logbooks and portfolios

The variety of clinical conditions available for a teaching session at any particular time will inevitably vary so ward-based teaching will of necessity be opportunistic. Some form of documentation is required to ensure that all students see a comparable mix of patients. Logbooks or personal digital assistants (PDAs) can be used to document patients seen and to keep a record

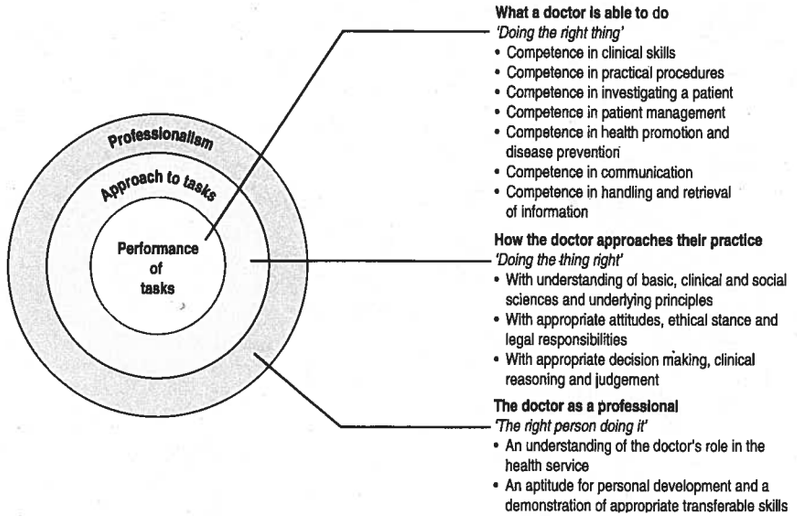


**Fig. 13.4** Educational objectives (after Simpson et al 2002)

of the learning points (Davis & Dent 1994). These can be reviewed periodically and future sessions directed to making good any deficits.

### Task-based learning

A list of tasks to be performed or procedures to be observed and carried out is usually a course requirement. Students then have these tasks ticked off in their clinical record book.

### Problem-based learning

The patient's presenting complaint can be used as the focus of a problem-based learning exercise in which basic sciences and clinical sciences can be integrated.

### Study guides

A prescribed list of conditions to be seen in the ward may be laid out in the study guide with the learning points to be achieved documented for each.

## Models for managing learning in the ward

### Apprenticeship / shadowing a junior doctor model

Shadowing a junior doctor on the unit where they will subsequently be working has become a required part of the final year programme for medical students in the UK. Students spend a number of weeks sharing the work and experiences of a junior doctor. Opportunities exist to share in carrying out ward tasks, formulating management plans and observing good practice. Confidence is increased by interaction with senior doctors and other professionals, by observing the working practice of junior doctors and by seeing patients individually. However, weaker students may feel they are ignored or that the only activities available to them are mundane ward chores.

### Patient-centred model

Students attached to a ward for a period of time can be allocated a certain number of patients, each of whom they initially admit and then follow throughout their time in the hospital. They are made responsible for presenting them on ward rounds and should be able to comment on their current investigations, laboratory results and present status. Opportunities exist for practice in examination and communication skills. Patients can be followed for X-ray and to surgery and even visited at home on discharge so the student can assess the impact of illness and convalescence on the patient in the context of their home environment.

### Grand rounds

Popular in some countres, this consultant-led ward round or a side room presentation usually includes senior clinicians, trainees, junior doctors and other healthcare professionals. There are opportunities to observe multiprofessional interaction and possibly more complex patient problems. However, students often remain remote from the decision making and may not understand some of the complex issues being considered. There is likely to be little opportunity for interaction with clinicians or patients in this model.



### Business ward round

This is a challenging activity for both clinicians and students. Little time is available for formal teaching, observing student performance or providing feedback. It may be necessary for the clinician to explain decisions being made in a variety of ways depending on the experience or seniority of others on the ward round.

### Teaching ward round

This specially created ward round is aimed at taking students to a small number of selected patients to provide opportunities for them to see physical signs and hear aspects of the case history.

Reserved students may have little opportunity to interact with patients individually compared with more self-confident counterparts, but opportunities to ask and be asked questions exist to a varying degree:

- *Demonstrator model* (Fig. 13.5). The clinical tutor demonstrates aspects of the case history and physical examination to the students.
- *Tutor model* (Fig. 13.6). The clinical tutor stands to the side and critiques each student in turn as they enquire into aspects of the history and carry out aspects of the physical examination.
- *Observer model* (Fig. 13.7). The clinical tutor distances him or herself from the student–patient interaction and observes a single student or pair of students in a longer portion of history taking or examination, providing feedback to them all at the end as they discuss their findings and clinical interpretation.

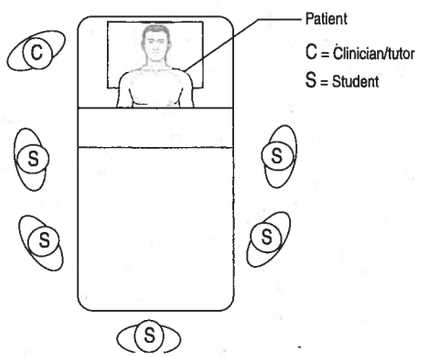


**Fig. 13.5** The demonstrator model

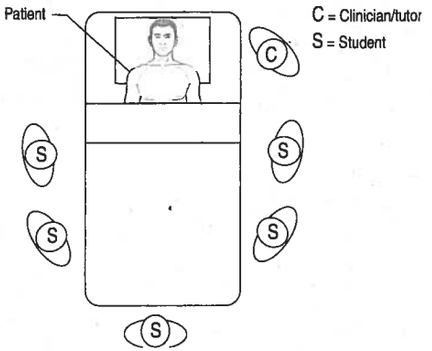


**Fig. 13.6** The tutor model

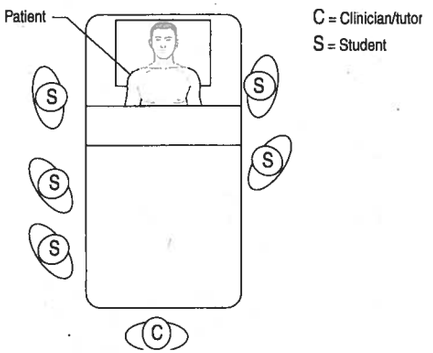


**Fig. 13.7** The observer model

- *Report-back model* (Fig. 13.8) Working singly or in pairs, students take a history and examination without supervision and subsequently report back to the tutor in a tutorial room or side room to present the case and receive feedback on content and delivery. Opportunities are given for students to practise their communication skills in their own time and to demonstrate their presentation skills and knowledge of the case but their bedside technique has been unsupervised so no feedback on this can be given.

### Clinical conference

A patient from the ward is presented in a side room at a conference of senior clinicians which students attend. Diagnostic and management problems are discussed by the group once the patient has left. Students have

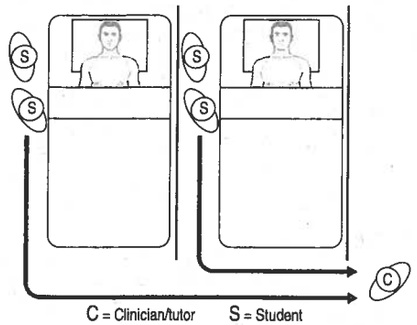


**Fig. 13.8** The report back model

the opportunity to observe the multifaceted management of difficult cases and the spectrum of professional opinion which may be displayed.

### Training ward

In Linköping a whole orthopaedic ward has been used as a multiprofessional training ward to provide students with extended opportunities for supervised patient care (Wahlstrom et al 1997).

> "A training ward seems to be a very efficient way of improving the ability to work as a team with real patients, and is an inspiring and efficient means of obtaining these skills which ... are essential in future professional work"
>
> *Wahlstrom et al 1997*

## Reflection and follow-up

### Students

Students have found ward-based teaching the most valuable way of developing clinical skills. They should be encouraged to reflect on their expereinces as described above and to complete their logbooks by reading round the patient problems they have seen.

### Patients

- Remember to thank all who have taken part in the teaching session and identify any problems or difficulties that have arrisen.

### Tutor

Ask yourself what went well, what didn't and what you could do better next time.

## Summary

Ward-based teaching offers unique opportunities for student learning which, for a variety of reasons, are becoming less efficiently utilised than previously. To attain maximum benefit from ward-based teaching, patients, students and tutors must each be appropriately prepared and the educational objectives must be understood. Various strategies can be used to advantage in both the planning and organisation of ward teaching. A variety of styles of ward-based teaching have been described, illustrating the advantages and disadvantages of each for the students involved.

> "A good consultant is accessible, approachable and friendly, with the power of a god, the patience of a saint and the sense of humour of an undergraduate"
>
> *Lowry 1987*

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