Chapter 1 Creating an effective learning environment

The clinical environment can be an exciting and, at the same time, daunting place in which to learn. Students entering clinical placements have to adjust to learning in a work environment, where, unlike at school or college, their learning is not the organisation's primary goal. They are usually enthused by the prospect of clinical work but feel that they lack a genuine role or place in the team. They may need help to learn how to gain access to patients and find learning opportunities.

So what determines how much people learn in workplace settings such as hospitals and general practices?

A study of learning at work found three main factors (Table 1.1).

Depending on your role, you may be able to impact on different areas. Most people find it quite easy to teach a motivated, competent and appropriately confident student or trainee. However, what if a trainee appears uninterested or lacking basic clinical skills? Someone in a pastoral role such as an educational supervisor or a personal tutor could address areas such as a learner's confidence and motivation. They might also help learners to set goals for developing their clinical skills, with teachers at all levels providing opportunities for practice and feedback.

Someone with a more strategic role such as a course organiser or training programme director may have some influence on the broader context, for example, ensuring that learners have adequate time for private study in their timetable.

Those supervising learners on a daily basis (often students or trainees at the next level up) will probably have most influence on their immediate conditions of work, such as the climate for learning and the type of work in which they are engaged. These aspects (which are addressed in the next

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Table 1.1 Main factors affecting learning at work [1].

Factor	Examples
1. Characteristics of the learner	Confidence, motivation, capability, prior knowledge (This is probably the most important factor, accounting for about 50% of variance in learning.) [2]
2. The immediate work culture	Level of challenge and responsibility, quality of supervision/management, emotional support, learning climate, pressures and priorities
3. The broader context	The career structure, appraisal systems, working hours, training policies

two sections) are important, and sometimes underestimated, although not by Albert Einstein, who is reported to have said

> I never teach my pupils; I only attempt to provide the conditions in which they can learn [3].

Thinking point

Can you remember your early clinical placements as a student or newly qualified doctor? What were your first impressions? What messages did you receive about how easy or difficult learning would be? What, if anything, would have made you feel more ready and able to learn? What do you think is the optimum climate for learning?

Discussion

Most doctors will have had mixed experiences. Learners report positive aspects such as supportive teams, effective, approachable teachers and constructive feedback, and difficulties such as unstable or incomplete teams, lack of patient continuity and teaching by humiliation [4–6]. Views on the ideal learning climate also vary, both individually and between specialties. Some favour a supportive environment. Others believe that exposing learners' deficiencies publicly is necessary to protect patients, maintain standards and prepare doctors for the demands of their working lives [7]. Evidence from relevant research studies follows.

Factors identified by medical students as influencing the effectiveness of placements at a large teaching hospital are shown in Table 1.2. Trainees mention similar helpful characteristics: a study of resident medical officers in Australia identified eight elements of a placement contributing to professional development (Table 1.3).

Both studies highlight the importance of clear expectations, opportunities for practical experience and the exercise of responsibility. They also agree on the need for a social climate in which learners feel accepted and valued.

Table 1.2 Medical students' experiences of clinical placements [6]

What students found helpful	What students found difficult
Feeling valued within the team	Feeling in the way
Being made to feel useful	Being ignored
Having a forum to discuss their ideas where they will not be laughed at	Being talked over and not having things explained to them
Friendly, accessible and approachable staff	Not being able to contribute to patient care
Staff who want to teach	A pattern of teachers being late or cancelling planned teaching
Lots of practical experience and exposure	Hanging around waiting for opportunities
Doctors being interested in what they are doing	Lack of induction – learning by getting things wrong
Expectations being made explicit	

Table 1.3 Elements of the clinical environment perceived by trainees as contributing to learning.

Element	Description
Autonomy	Responsibility for patient care
Supervision	Guidance and direction from senior medical colleagues
Social support	Being accepted, recognised and valued within the team
Workload	Balance between service and professional development
Role clarity	Clarity of expectations about what should be done and achieved
Variety	Diversification of the work
Orientation to learning and teaching	Emphasis on learning and development and availability of learning activities
Orientation to general practice	Attention given to learning requirements relevant to general practice

Adapted from [8] with permission from Taylor & Francis Ltd.

These findings are supported by a major review of educational research which found that expert teachers respect students, both as learners and as people, showing care and commitment for them [2]. The optimal educational climate is described as one '*where error is welcomed, where student questioning is high, where engagement is the norm*' [2].

In a clinical context, error would not be *welcomed*, but it is safer for patients if the climate is sufficiently open that learners are not afraid to ask questions or admit mistakes or weaknesses [9,10]. It is easy for senior doctors to forget how scary they can seem to those lower down the hierarchy! At the same time, a culture of high expectations is important, with teachers demonstrating high standards themselves and expecting the same of their learners [11].

Practical ways to create an environment conducive to learning

Aim for a combination of challenge (setting goals and tasks which are demanding but achievable) and support (providing advice, encouragement and feedback to enable goals to be met). Practical things you can do include the following.

Before students/trainees arrive

- Send a welcome letter/e-mail to let them know where and when to come and what to bring.
- You may want to suggest how they could prepare for their placement, for example, relevant reading.

On arrival

Make them feel welcome/part of the team:

- remember and use their name;
- show a personal interest, for example, finding out more about their previous jobs, travel to work, spare time activities;
- find somewhere that they can meet, put things, access resources.

Orientate them (Box 1.1):

- introduce them to key colleagues;
- provide a proper induction, including written information;
- show them where to find and how to use relevant equipment or protocols;
- advise them how to learn – for example, what questions to ask themselves about patients, what to do when clinicians are late or do not arrive for teaching, how to focus their reading;
- direct them to relevant Intranet pages – ask current/past students to develop a list of useful resources which can be continuously modified by new trainees;
- tell them good times to contact you and how to do so (Box 1.2).

Box 1.1 Planning for new trainees

Mr. Jones, a colorectal surgeon, always takes a week's holiday in the first week of August. This means that there are fewer inpatients, so it is a quieter period during which the new trainees can become acquainted with the wards and get to know their colleagues before the normal busy routine resumes.

Conversely Dr. Payne in A&E ensures that there is good consultant cover during the first week of a new group of trainees. This allows them to provide induction training and close supervision of trainees during their early days in post.

Box 1.2 Addressing a problem

A consultant received feedback that she was not considered accessible by junior colleagues. She decided to nominate 1 hour a week where she would be in her office and juniors were invited to drop in with any queries. This worked well for her and the trainees.

Clarify expectations:

- explain what they can expect from the rotation, and perhaps what they cannot;
- explain the behaviour and standards you expect from them (e.g. dress code, punctuality, when/how to report back on patients);
- negotiate specific learning objectives;
- ask trainees/students from a previous rotation to advise them on working in the team – they will tend to tap into the things that newcomers want to know.

During the placement

- introduce them to patients from whom they can learn;
- be aware of curricular requirements (Box 1.3);
- provide feedback and open discussion of cases in which they are involved;
- periodically check how they are getting on and any problems they are having;
- provide a structured teaching programme covering common diseases/problems, with arrangements to cover clinical duties so that they can attend;
- give sufficient time for ward-based teaching;

Box 1.3 A novel approach to sign-offs?

A group of students met a consultant for bedside teaching. The consultant took all their log books, immediately ticked and signed all the relevant sections and then told them that anyone who wanted to could now leave. No one did.

Whilst this method is not recommended, by signing everyone off, the consultant diverted the students' attention away from their log books, and allowed them to focus on the learning. How else could you achieve this?

- include them in team social events;
- adapt your teaching to the differing levels and needs of individuals;
- recognise when they are struggling and provide support – personal or professional.

These strategies should help newcomers to settle in and start to learn quickly and effectively.

Design of clinical placements

This section is most relevant to teachers who are in a position to influence students' or trainees' timetables.

Most learning at work arises not from formal teaching but from the challenges posed by the work itself, such as solving problems and interacting with colleagues and patients [1].

Thinking point

Does this reflect your experience? Think of times when you learnt a lot and those when you learnt less. What factors enhanced/inhibited learning?

Discussion

Many doctors remember being on call as a prime time for learning because they had to take decisions and bear the consequences, albeit sometimes in difficult and stressful circumstances. Acting up for more senior colleagues also provides a sharp learning curve.

In an apprenticeship, the development of expertise depends primarily on the quantity and quality of learning opportunities inherent in the work. So the type and scope of work in which learners are engaged and the level of responsibility they assume are important.

Learners will naturally increase their expertise fastest in relation to the conditions and stages of care that they see most commonly. So a useful question to ask about any placement is

- Are the types and numbers of patients to which trainees are exposed, and the stages at which they are involved, in line with the objectives of their training?

Placements are not always well matched to the stage of the learner, for example,

- Students or junior trainees are sometimes placed in highly specialised teams – opportunities which may be better suited to specialist trainees.
- Trainees may be busy on the wards, learning a lot about day-to-day management of patients but missing opportunities to learn about diagnosis, surgical interventions or long-term management.

These situations often occur because of service pressures, difficulty in finding placements or the increasingly specialised nature of health care. It is often argued that trainees will learn generic skills such as history taking or examination skills, although the evidence suggests that such skills are not easily transferable from one situation to another [12]. For example, taking histories from patients with anorexia does not prepare you for taking histories from patients with anaemia or even with another psychiatric condition because they rely on different underpinning knowledge bases.

Thinking point

Consider the timetable that your trainees work. Where are their learning opportunities focused? Are they seeing enough patients? Is the case mix appropriate? Are they seeing patients at different stages of care? Are they learning the skills and knowledge they need?

Where are the gaps? What other experiences would they benefit from? How could you improve their exposure?

Consider the same questions for your students.

Discussion

Ways in which some supervisors have addressed a mismatch between the timetable and learners' objectives include

- alerting learners to interesting patients whom they would otherwise miss;
- facilitating attendance at clinics or theatre sessions;
- organising swaps between trainees working in different contexts;

- considering progression during the placement, for example, getting trainees to
  - attend extra or different clinics/lists as they progress,
  - take on extra roles or responsibilities;
- encouraging the use of study days to enhance clinical exposure (e.g. through out of placement attachments), not just for courses or private study;
- focusing formal teaching on recognised gaps in clinical exposure.

Continuity between learners, teachers and patients

In recent years, continuity between trainees and patients has been reduced by shorter hospital stays and greater movement of patients between clinical teams. Thus, trainees are often unaware of the outcomes of their decisions. Similarly, continuity between trainee and supervisor/team has been reduced by shift systems, the European Working Time Directive and looser team structures. Of course, working with different people and seeing different ways of doing things can be educational, particularly with more senior trainees. However, if placements are too short, both teachers and learners have less time and incentive to invest in developing effective relationships. Learners may spend a disproportionate amount of time familiarising themselves with new colleagues and systems, leaving little time to consolidate learning.

Thinking point

Do your trainees have reasonable continuity with
(a) senior staff,
(b) patients?
If not, how might this be increased?

Discussion

(a) The introduction of named clinical and educational supervisors was designed to help provide continuity. Trainees may also find, or be given, mentors who can remain constant over a number of years. Some teams have managed to develop timetables which improve continuity. If you are in an educational leadership role, this may be something to consider.
(b) Trainees can be given projects to follow up individual patients during and after their treatment, which could be written up or presented to colleagues. Relationships can be developed with community colleagues so that learners see patients at different stages of their journey.

The Royal College of Physicians recommends that hospitals should organise rotas to encourage consistent team membership and that junior doctors should have a minimum of 6-month attachments to departments/specialties during training rotations [13].

Teaching and learning resources

Learning can be enhanced by the availability of appropriate teaching and learning resources (Table 1.4).

Thinking point

What learning resources are available for you and your students/trainees? How could they be enhanced?

Discussion

Sometimes grants are available from medical schools or other local sources to improve teaching resources.

The teaching climate

Having considered factors promoting learning, it is also worth considering what facilitates good teaching. The following are some factors that doctors on teaching courses have reported as helpful:

Good leadership

- Leaders who are knowledgeable and enthusiastic about teaching.
- An atmosphere of mutual respect and support.
- Clarity about the roles of different staff in teaching.
- A regular forum in which teachers can discuss teaching and the progress of individual trainees.

Table 1.4 Teaching and learning resources.

• Handbooks for students and trainees on placements	• Equipment modified for teaching, for example, double-headed stethoscope, slit lamp with extra eye piece
• Relevant books and journals	• Clinical images, video clips, protocols, book extracts stored on your mobile phone for use in teaching
• Posters	• Vodcasts and podcasts giving advice or teaching on core subjects
• Models	• Information about local training opportunities
• Slide sets	
• Mannequins for skills practice	
• Intranet page with local information, plus links to useful websites and e-learning modules	

Effective links
- With the medical school, Royal College and Foundation School.
- Regular updates, for example, information on changes to curricula or assessments.

Structural support
- Teaching and supervisory responsibilities recognised in job plans.
- Investment in teaching administration, facilities and resources.
- Training opportunities, study leave and funding.
- Recognition and reward for teaching.

Common difficulties cited by teachers include lack of time and conflicting demands.

What makes a good clinical teacher?

A meta-review of teaching strategies which have the most influence on learning concluded that three of the most important are
- setting relevant, specific and challenging goals;
- providing regular feedback;
- innovation – a deliberate and systematic attempt to improve the quality of learning [14].

Examples of the type of goals that can be set during clinical teaching are given in Chapter 2, and feedback is addressed in Chapter 3.

These and other characteristics of good clinical teachers are shown in Table 1.5 [15,16]. You may like to rate yourself against them and identify goals for improvement (which could already be areas of strength).

Table 1.5 Characteristics of effective clinical teachers.

Characteristic	Area of strength	Would like to develop
Demonstrate clinical competence		
Have a passion/enthusiasm for teaching		
Explain things clearly		
Are supportive to juniors		
Target teaching to the level of the learner(s)		
Provide specific, challenging tasks and goals		
Give regular feedback		
Show respect and compassion for learners		
Are accessible		
Use a broad repertoire of teaching methods		
Evaluate/reflect on teaching		

Thinking Point

What aspects of teaching do you enjoy most?
What rewards do you gain from teaching?
What kind of teacher would you like to be?

Discussion

Teachers often gain satisfaction from seeing learners improve, particularly if they work with them over a period of time. Teaching also stimulates the teacher's own learning and thus improves his or her knowledge and the standard of clinical care he or she provides.

In considering the kind of teacher you would like to be, you may have thought about your own teaching role models – those whom you would like to emulate.

This section has described how the way in which students and trainees are inducted into and supervised during a placement impacts on their motivation and learning. Setting an environment conducive to learning involves demonstrating enthusiasm for teaching, a team ethos, and supervision tailored to the individual's needs and stage of training. Learners also need a timetable that will provide appropriate opportunities for development. The immediate clinical supervisor can enhance the learning of students and trainees, and provides an important role model.

The following sections consider the input of patients and non-medical staff and outline some general principles and strategies for clinical teaching.

Be a yardstick of quality. Some people are not used to an environment where excellence is expected.

Steve Jobs, co-founder and chief executive of Apple

Involving patients in teaching

Patients are central to clinical teaching, and most studies show that they are willing to take part in teaching and perceive inherent benefits. For example, one study showed that patients felt more cared for, more comfortable and less anxious or bored when students were present. They felt better informed because of the discussion between doctor and student and were pleased to help future generations [17].

Often patients are relatively passive in the teaching process, but learners may benefit if they sometimes take a more active role.

Thinking point

Look at some of the roles which patients may play in clinical teaching (Table 1.6), and consider which ones(s) reflect your own approach.

Table 1.6 Patients' roles in teaching.

Patient role	Description
Clinical material	To be observed, examined and questioned
Problem	To be diagnosed and ultimately 'solved', with students learning from the process
Teacher	Asked to educate students about their experience and helping to shape what they learn
Assessor	Asked to give feedback to students
Resource	With a plethora of experience for students to draw on
Partner	Patient and doctor/student sharing their expertise about the condition.

Discussion

There is no single correct approach: different options may suit different clinical contexts and teaching purposes. However, you may like to consider incorporating additional roles to those that you already use. What would you aspire to? How practically might you achieve this? What would be your concerns?

Teachers may have concerns about lack of time and privacy, about patients being alarmed or confused by medical terminology, or learners losing face in front of the patient.

Examples of ways to involve patients actively include the following.

- Asking some to say a little more than strictly necessary, for example, about their experience of health care or how illness has affected their life.
- Asking the student to present the history in front of the patient and have the patient correct or add information.
- Asking patients to comment on non-medical aspects of the student's performance, for example, professionalism or communication skills.
- Identifying suitable patients and seeking their consent for extra roles, such as being a case study for a student project.

Another option is to encourage students and trainees to attend related activities (if acceptable to the group), for example,

- patient support groups;
- service user groups;

- patien education groups;
- parents' groups;
- carers' groups;
- service development meetings in which patients are involved.

In some specialties, it may be possible to arrange visits to patients at home, where learners can gain greater insight into their lives.

General principles

- Encourage direct contact between learners and patients.
- Keep the number of students low: split the group if necessary.
- Look out for non-verbal cues that patients are reluctant to engage with teaching even if they say yes.
- Ask learners questions which encourage them to explore and appreciate the impact of illness on the patient's life:
  - *What was the patient's main concern?*
  - *How has the patient's family been affected?*
- Be aware of patient fatigue.

'Everybody's a teacher if you listen.'

Doris Roberts, actress

Teacher comment

I learn a lot from parent groups where parents talk about how to deal with a 24-year old with severe autism. It gives me ideas that I can share with other parents.

Involving other disciplines in teaching

It is often useful to involve other disciplines (other medical specialties, health care professionals or biomedical scientists) in clinical teaching and learning. When doing so, you may wish to consider the following questions:

- What is the purpose? Are you looking for students to learn
  - specific skills;
  - about the colleague's roles;
  - about the patient's experience?

  Everyone involved needs to be clear about the purpose and value of the experience.

- Is it feasible? Do your colleagues have the time, experience and skills to make it work?
- Are they willing? Or might they be willing with the right support? Be aware of the hierarchy (especially in hospitals) and the impact this may have on colleagues' willingness to teach. Some non-medical staff overestimate medical students'/trainees' knowledge and may need convincing of what they can offer.
- What information do they need? At a minimum, they will need to understand what they are expected to teach, how this fits into the curriculum and the learners' existing level of knowledge and competence.
- Can students/trainees from different disciplines learn together? There may be some skills which both groups require that could be learnt together.
- Can you reciprocate? Colleagues may have students of their own who need placements or teaching.

Learning/teaching opportunities

Consider what opportunities for mutual learning/teaching occur naturally, for example:

- with nurses, pharmacists or midwives on the wards;
- during case conferences or multi-agency meetings;
- during joint assessments of a patient.

The way in which you work with colleagues provides a model of interprofessional working. You may facilitate mutual learning, for example, by inviting them to give their perspective or specialised knowledge at appropriate points on a ward round. In addition, learners could be encouraged to

- follow a patient to referrals, seeing what others do and gaining insight into the patient's experience;
- shadow a non-medical colleague for a set period of time;
- talk to someone from another discipline about his or her training and role.

Colleagues from different professions and disciplines often have their own weekly or monthly teaching sessions. In some specialties, it may be appropriate to discuss opening (some of) their sessions to your learners and vice versa.

Teacher comment

I have my registrar and a senior pharmacist buddying up, so that they do joint assessments – sometimes a pharmacy assessment and sometimes a psychiatric assessment. They learn from each other's perspectives and they also teach junior medical staff together, and so model a multi-disciplinary team working approach.

Some principles of effective clinical teaching

- Give learners a genuine role in patient care, wherever possible. Responsibility is a great motivator.
- Where this is not possible, engage them actively in meaningful tasks and add value by reviewing their learning.
- Aim to gradually increase the learners' level of responsibility and autonomy, offering gradually diminishing levels of support as they gain in confidence and competence.
- Help learners to see the wood for the trees. Whilst the details of individual cases are important, learners also need to see the overall picture. Help them to look for patterns and trends and to understand the overall aims of investigation and management.
- Focus on the development of clinical thinking rather than factual recall. So, for example, ask '*What in this patient would lead you to be concerned about heart disease?*' rather than '*Tell me the five most common causes of heart disease*'.

> 'The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires.'
>
> *William Arthur Ward, writer*

Useful strategies for clinical teaching

- **Explicate practice**: Explain what you are doing and why.
- **Prompt observation**: Help learners to notice more about the patient or your practice.
- **Make comparisons**: Draw attention to similarities and differences in the presentation, investigation and management of patients. *This helps learners to understand the variation within and between different pathologies and how care is tailored to the individual.*
- **Stimulate thinking**: Ask learners to make sense of what they see/hear. Invite them to form differential diagnoses or management plans rather than just describing signs and symptoms.
- **Draw out general principles** from specific patients.
- **Link theory and practice**: Draw on learners' existing theoretical knowledge and help them make links to the patients they see.
- **Share the tricks of the trade**: Tell learners the mnemonics you use, lessons you learnt the hard way or patient anecdotes that convey an important message.

- **Signpost**: Alert learners to colleagues, services or resources that they can access to further their learning.
- **Listen for cues**: Often trainees will reveal their concerns and difficulties in throw away comments that can easily be missed.

Comments from Teachers *and Learners*

I always treat the registrars as potential consultant colleagues.

I tell students what I expect them to be able to do at 1 week, 4 weeks, 2 months, etc. and also get them to comment on whether that feels reasonable and make it clear that they may go faster or slower and that we will keep things under review.

We have kept our firm structure – we have had to fight for it but we still work with our juniors regularly.

Some people leave medical school with inadequate knowledge and fail to grasp the concept that they are now doctors and not students. They are paid to provide a service to patients and should strive to develop themselves without expecting everything to be 'taught'.

I tell people at the start that there are no wrong answers.

Students are invited to the Echo meeting, but it took us a long time to realise that they did not understand hardly anything that was going on and we did not make any attempt to include them or to explain things to them.

We cancel the ENT clinics in the first week of a new rotation, so that we can teach the juniors the skills they need before starting.

Every firm could think about what sorts of tasks medical students could do that would be useful to them.

Most people are good teachers if you ask them to teach something specific: you need to work out what you want.

I was asked to do something that I am not qualified to do. Some consultants have strong personalities and it can be quite hard to resist sometimes.

I appreciated my consultant checking in with me every day to see how I was getting on.

I was shouted at a lot as a junior. You immediately panic and do not want to be involved with that person anymore – I lost a lot of confidence.

The registrars almost become like a mentor to you and are often in the best position to assess your progression.

The best supervisors are skilled in drawing out ideas, aspirations and stumbling blocks and creative in bringing about alternative regimes, pathways and attitudes.

Five tips for clinical teaching which do not take time or money

- **Show your enthusiasm**: A passion for your work and teaching will infect others.
- **Excel at your job**: You are role model, so set a standard of practice to which you would be happy for your learners to aspire.
- **Have high (but realistic) expectations**: People usually live up to them.
- **Exploit every opportunity**: Much useful learning can take place whilst walking from one ward to the next, when a patient cancels or over a coffee.
- **Treat everyone as part of the team**: Involving students and trainees in the life of the team builds rapport and commitment even in short placements.

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