Integrating teaching and learning into clinical practice

Author:
Clare Morris MA (Ed), BSc, FHEA
Undergraduate Medicine Training Co-ordinator
Centre for Educational Development, Imperial College London

This paper was first written in 2003 as part of a project led by the London Deanery to provide a web-based learning resource to support the educational development for clinical teachers. It was revised by Judy McKimm in 2007 with the introduction of the Deanery's new web-based learning package for clinical teachers. Each of the papers provides a summary and background reading on a core topic in clinical education.

Aims:

This paper explores the challenges of teaching in opportunistic settings and looks at ways to integrate teaching commitments and learning activities into typical work scenarios.

Contents:

Introduction

This paper encourages you to draw upon ideas developed in other papers in this series and helps you to plan your teaching to take into account current thinking about teaching and learning.

> "For trainers the effective integration of service (work), experience and training is essential…for trainees effective integration is vital if they are to maximise learning opportunities available to them." (Stanley,1998)
>
> " Students/trainees saw their training as vulnerable to, and unprotected against, both chance circumstance and the (lack of) goodwill of others, whether these others be patients or staff." (Thistlethwaite & Jordan, 1999)

Workplace learning environments can be seen as 'opportunistic settings' for teaching and training. You may know **where** you are going to be teaching, you may know **who** you are going to be teaching, and you may have a rough idea of the types of patients you may be seeing – but the rest may seem to be down to chance. As the quotes above suggest, circumstantial factors may impact significantly on the learning opportunities available and the teaching you provide. This is clearly unsatisfactory for both teacher and learner and can put an additional strain on you as you struggle to 'get through your day' and somehow teach others as well.

This paper aims to illustrate that whilst the workplace setting is opportunistic, the teaching need not be!

It aims to look at ways in which you can juggle competing demands – be they from patients, from 'the service', from students/trainees or their training institutions – and end the day feeling as if not only have you done a good job, you have been an effective teacher too.

Making the most of opportunities – in outpatients

Thinking point

It's a busy out-patient clinic – you are likely to see patients every 10 to 20 minutes, due to start at 9 and if you are lucky you will finish at 12. You have a pressing commitment at 2, and need to get back onto the wards in between. Then you remember – you have 4 students/trainees with you this morning.

Take a few minutes to think about the differences having students/trainees with you will make.
How will you allocate teaching time in this clinic?
What are the implications for time taken per patient and the finish time of the clinic?

Here are some typical responses:

1. Time taken to brief students/trainees about the nature of the clinic and how it will run today will delay the start of the clinic by up to 30 minutes

2. When you have students/trainees you like to do all or some of the following:

    - **brief** students/trainees about each patient as they come in
    - **allocate** an aspect of the consultation to the student(s) eg taking the history, explaining test results
    - **demonstrate** a particular skill/part of the physical examination/clinical procedure
    - **provide opportunities** for students/trainees try out what you have demonstrated
    - **feedback on student performance**
    - **teach them** something about , for example, significant signs, symptoms or features, diagnostic or prognostic indicators or management choices
    - **question and answer** session

As a result the time taken per patient will double and you will run very late, see fewer patients and have to pass some of the list over to someone else

Most clinicians will say that the end result is the clinic runs late, they spend the afternoon trying to catch up and they feel as if they have failed to do either a good job in clinic or a good job in teaching, as what the student learnt was down to chance circumstance.

Making the most of opportunities – the ward round

Let's consider another scenario…the ward round (or similar)

Thinking point

Think about the last time you conducted a ward round (or equivalent) with students/trainees in attendance.
Think about all the things YOU did during the round and all the things the STUDENT did during the round, jot them down in two separate columns – be honest!

When you have finished your lists, take a few minutes to notice the levels of activity – the verbs you used to describe the nature of your activity and the nature of learner activity/

Here is a typical response:

What I did	**What the students/trainees did**
Briefed students/trainees and told them what to look out for Got to know new admissions Took histories Chatted to patients Asked them about changes in condition Read notes and asked patients/nursing staff/ other team members about developments Discussed management with team Discussed discharge with team and made discharge plans Examined patients Ordered investigations Looked at test results and changed care where indicated Examined X-rays and made decisions Taught students/trainees / trainees how to do things Supervised trainee and offered advice Asked questions Offered feedback	Stood Listened Watched Fetched and carried things Talked (among themselves) Answered questions Examined a patient each Looked bored

Clinical teachers carrying out this task are often struck by the lack of balance in the amount and nature of the activity. The clinical teacher is on the whole actively involved in doing – *briefing, teaching, examining, deciding, changing, analysing, negotiating, supervising, giving feedback and advice*. The students/trainees on the other hand, are engaged in much less activity and the nature of their activity tends to be more passive – *listening, watching, answering.*

A study by Murray et el (2001) looked at medical student activity during hospital and community attachments towards the end of their training. Around 40% of the students time was spent in non-clinical activity, which included travel and waiting for teaching. A similar proportion of their time was spent being taught or assessed by doctors and other members of the health care team. The remaining time was spent on self-directed learning activities including independent study and library work, and some unsupervised interaction with patients. Students were asked to rate the perceived educational value of each activity and to give enjoyment ratings. It comes as little surprise that students most valued time with patients, be it supervised or otherwise. Interestingly whilst they perceived the benefits of self directed learning, they didn't find it that enjoyable. See Dunn et al (1999) for more student views on self directed learning.

So, what can we learn about our teaching from the study above and our reflections on current teaching practices?

- Although clinical teachers may be very busy, students/trainees have a lot of 'down time'
- Although clinical teachers may be very actively teaching and indeed learning, there is a risk that our current teaching practices encourage passivity and dependence in our learners
- Self directed learning has huge potential educational value but in order to motivate and engage students/trainees in it, we have to find ways to make it more enjoyable and clinically relevant
- Traditional teaching approaches are hard to maintain in the current climate

How can we move forward? Here's one suggestion.

> "*one of the problems is that the clinical teacher hasn't organised themselves well enough in advance…it does require some preparation..there are lots of incidental learning opportunities that do crop up but I actually think you need to prepare the programme*" quote from a clinical teacher

What is your immediate response to this suggestion?

That preparation takes time and for clinical teachers there never is enough time?

Is that true?

Is it a lack of time, or limited attention to how you organise and manage your time with students/trainees?

By spending a couple of hours planning with students/trainees at the start of an attachment, you will be freeing up a lot of your time later on and making sure that their time with you is used constructively and purposefully. Without a clear plan or programme in mind the danger is that you over compensate – have students/trainees with you at every opportunity, try and 'teach' something about every patient you see

and every situation you encounter! With planning you can be selective and students/trainees can have a much more varied learning experience.

Planning for clinical teaching: the basics

Step 1 - Do the ground work:

- How many students/trainees
- How long will they be with you?
- What have they done before?
- What will they do next?
- What do they hope/expect to do with you?
- What are the intended learning outcomes of this attachment/placement?
- How will they be assessed?
- Who else is involved in their teaching and learning at this point?
- What are your expectations of them?

Thinking point

Can you answer all of the above questions for the students/trainees currently with you – or those due next?
If not, how might you find out?
When are you going to do it?
Allocate some time now!

Step 2 - Review possible learning resources

- Where can teaching take place?
    - eg. in outpatients, in theatre, on the ward, in clinics, in patients homes, in the skills lab or simulation centre?
- Who else might be involved in 'teaching'?
    - eg. other members of the Multi-disciplinary team, patients, carers, other trainees or students?
- What special resources do we offer?
  eg. a skills centre, a specialist clinic, a simulation centre, a centre of excellence?

See the linked paper *Using learning resources to enhance teaching and learning* for further ideas.

Thinking point

Take a few moments to identify all potential learning resources available to students/trainees attached to you. Which ones do you most use and why? Which ones do you not use and why? Are there other resources your colleagues use that you might share?

When you have done this, can you identify at least one change in your existing practice to encourage better use of resources.

Step 3 - Review approaches to teaching and learning that might be used

This is the heart of the planning process and is the aspect that offers greatest flexibility in terms of how you make best use of teaching and learning time.
In this section you will be asked to review your current practice and have the opportunity to consider how other clinical teachers have approached this aspect of teaching.
This third step is divided into three key aspects of teaching in clinical settings:

1. Teaching during timetabled tutorial/teaching time
2. Teaching where patients are involved
3. Self directed and peer learning approaches

Teaching during timetabled teaching time

In this section we are going to think about how to make best used of timetabled teaching time. This tends to be where there is a formal emphasis on learning and typically will involve lectures and presentations, tutorials and seminars. The emphasis of this section, is on providing active learning opportunities that are clinically relevant and build on prior experiences in other areas of their clinical attachments.

Thinking point

Think about your current practice with students during timetabled teaching time eg. tutorials, seminars, teaching meetings

- What you do (before and during a session)
- What students/trainees do (before and during the session)
- How do you encourage students/trainees to make links between formal teaching settings and other experiences they gain on attachment?

When you have considered all these questions, see below for some ideas of how other clinical teachers use timetabled time.

Examples:

This encourages you to increase student activity and involvement in the learning process. One of the easiest ways to encourage greater levels of student activity is to break your teaching into 10-15 minute blocks, and to schedule a 5 - 10 minute task or learning activity between these blocks. These learning activities might include

Brainstorming e.g. '*how may different conditions can you come up with where X might be a presenting symptom?'*

Buzz groups e.g. ' *in groups of 3, have a think about X and what the implications might be when trying to establish a differential diagnosis*'

Quizzes or mini MCQs e.g. '*what do the following abbreviations stand for'*

Data interpretation or analysis tasks eg '*here is Mrs Smith's X-ray – what did I see…here are Mr Jones' blood results..what should I do now*…

Case scenarios – *'Mr Patel comes into A and E …what should I do now and why…what questions should I ask to help me establish a diagnosis…'*

Problem scenarios – *We have 3 patients waiting to come in for this procedure but only one bed available at present…a brief case synopsis follows for each…who should we admit first and why?*

Role play eg *'I want you to work in pairs to …practice explaining a diagnosis of X to a child of 5 and their parents…, to explain this procedure to …*

Role rehearsal e.g. '*take 5 minutes to remind yourselves how to do a knee examination before we move on…patients with this condition will need a referral to*

the therapy services so I want you to have a go at drafting a referral to each discipline making sure you include the most pertinent information for each…'

Crosby (1996) and Steinert (1996) offer clear guidance on ways to structure and deliver small group teaching.

Timetabled small group teaching, whatever its form, provides an ideal learning environment where students/trainees can be encouraged to use their more formal 'book; knowledge to interrogate and make sense of the workplace practices and clinical situations they encounter. These timetabled sessions can take a variety of forms, influenced by the intended learning outcomes.
Tutorials might be:

- Topic or theme based:
  The tutorial is based around a specific topic or theme. Students can be asked to prepare for the tutorial in a number of ways eg they are given some short case synopses or scenarios to consider beforehand or they are asked to do some relevant background reading or perhaps to prepare a brief verbal presentation of a case/situation they have experienced relevant to the topic. The tutorial takes the form of a discussion but may also include some specific learning activities as previously described to develop ideas.

- Problem based
  See *Using learning resources to enhance teaching and learning* for a description of problem based learning

- Case based
  This might take a number of forms. It may involve a case debrief where a shared patient is presented to the group, and students consider why certain decisions were made, other ways the case might be managed and the skills they would need to take over care. Alternatively it may take the form of a case study

- Critical incident or significant event based
  Students are invited to come to the tutorial to present and discuss a critical incident or significant event from their experience. This approach is appropriate when there is continuity of tutorials and tutor. Further information on this approach can be found in Henderson et al (2002).
  Alternatively the tutor spends 10-15 minutes describing a critical incident or significant event and then students/trainees break into groups to consider how they might feel in that situation, what they might do, what support they would seek etc

- Skills based
  Each tutorial takes the form of a workshop based around a professional or clinical skill, for example: a series of session on examination of joints, with a demonstration/video followed by peer practice; a session on how to explain conditions to patients with students working in threes to take turns to explain and receive feedback on performance; a session on interpretation of test results / x-rays

Thinking point

Think back to the last time you ran a tutorial (or took part in one as a trainee). How was the session structured? Could it be done differently?

Take 5-10 minutes to think about how you will run your next tutorial to make it more clinically relevant and meaningful to students/trainees.

Teaching where patients are involved

Traditionally teaching with patients has been the mainstay approach to learning on attachments. In other papers you are able to explore a variety of approaches including:

- Teacher modelling /demonstrating skills
- Students/trainees observing clinical teacher practice
- Students carrying out aspects of a consultation /examination with guidance and feedback

This focus on teaching is obviously extremely important. However, it may be possible to increase contact time with patients and their carers to enhance and develop student learning.

Stacy et al (1999) and Spencer et al (2000) encourage us to consider the patient's role in teaching more widely. Are patients a teaching resource or are they an exemplar of their medical condition…an expert in their own condition…or a facilitator or co-tutor, helping the student develop their understanding, their skills and appropriate attitudes?

Thinking point

Consider how you involve patients in the teaching and learning process?
Are there other ways they could be involved?

Here are some examples of how other clinical teachers have involved patients in the teaching and learning process:

1. Intended learning outcome(s): to increase student confidence in communicating with patients from a wide variety of backgrounds and languages or those with specific communication disabilities and/or to explore patients' experiences of healthcare/ perceptions of illness/ impact of illness on activities of daily living

- students are encouraged to simply 'go and chat' to a variety of patients on the ward/in the waiting room
- students chat to a number of patients with a similar presenting health complaint and explore beliefs /experiences etc
- patient partners are recruited to talk to students about their experiences of living with a chronic condition/disability and their experiences of healthcare

2.Intended learning outcome: students to receive feedback on performance from a variety of sources

- Patients and their carers are asked to give feedback to students on how they, for example, took a history, offered explanations for illness or explained management or carried out a physical examination or performed venepuncture. Patients are asked to say what they felt the student did well, but also what they might do differently.

3. Intended learning outcome: students become more aware of patients experiences of healthcare

- Students are paired with a patient for a day /afternoon or paired with a specific patients for the duration of their stay in order to track them throughout their healthcare journey
- *Students are assigned to an outpatient clinic where they chat to patients about their experiences of care*

Self-directed and peer learning

Self-directed learning has been identified as an essential aspect of professional development, be it as an undergraduate or as an experienced professional. See GMC (1993), GMC (1997) and GMC (1999).
The capacity to reflect upon and critically appraise one's practice, to identify ongoing learning needs and how to address them is seen as a core professional skill that underpins the transition made towards professional autonomy.
As with any other skill, students and trainees need to be provided with opportunities to develop their abilities to work independently, to evaluate their own performance, to identify learning needs and to address them in a variety of ways. They also need opportunities to learn how to work effectively with each other and to develop their skills in giving and receiving feedback on performance.

Thinking point

Take five minutes to think about a typical day or week with students and trainees in your setting.

What opportunities do students have to:

Work/learn independently?
To work/learn together?
Work/learn from each other?

Are there other opportunities that could be provided?

Here are some examples of how to optimise learning opportunities

Working and learning independently

- Students are paired with students from other healthcare professions. They spend a specified amount of time shadowing them with a remit to identify key aspects of their role in the team. Students then 'check out' and discuss their conclusions with the person they are shadowing – before feeding back to their peer group if relevant
- Students are paired with a named patient and follow their journey during their visit and stay. Students can be given a specific remit e.g. to find out what the patient understands about what is happening and why or to discuss their understanding of their illness
- Students complete a log book or diary that keeps a record of what they have done and their reflections upon this experience
- Students are given the opportunity to videotape a consultation, to critically appraise their own performance and learning needs and then to discuss it a tutor (or other suitable individual)
- While you write up notes/dictate letters students are encouraged to have a go at drafting the same. They can them compare with your version and consider how they differ

Working and learning together

- All of the above tasks can be adapted to allow students to work together on tasks
- Problem based learning sessions have the explicit aim of encouraging students to identify learning needs, select appropriate learning resources and to share their findings with their peer group
- Students work in pairs or small groups to draft a patient information leaflet about a certain condition – it should include links to charitable/research organisations and sources of additional information

Working / learning from each other

- Students work in threes to rehearse specific skills – one student carries out the task, another takes the role of the patient and the third acts as observer. Students debrief and offer feedback to each other on how things went
- Students work in pairs and carry out designated activities with patients (eg taking a history, clerking in, conducting a physical examination, taking bloods etc) Students take it in turns to either carry out the activity or to observe their student colleague do it. Each activity should be followed by a debrief and feedback session as above
- Students work in pairs or groups to develop their skills at explaining diagnoses; prognoses; procedures; investigations or test results to patients. This can be done by working through an agreed list or to add variety, by asking students to identify 6 topics each on slips of paper, putting them into the hat and then taking 'pot luck' By working in threes they can take on different roles (explainer/patient/observer) and offer feedback to each other

Wadoodi et al (2002) offer useful guidance on how to introduce a more formalised approach to peer-assisted learning in medical education. Gibson et al (2002) consider the role of co-operative learning in junior doctor training.

Putting it into practice – integrating teaching, learning and working

Now you have spent some time thinking about the learning opportunities and resources potentially available to you and the approaches to teaching and learning that might be used, you need to 'map' these against the intended learning outcomes of the attachment. There are lots of different ways to do this (see *Curriculum design and development* for more information on learning outcomes*)* and how you do it will be influenced by factors such as specific course/training requirements, numbers of students/trainees, stage of training and your preferred approaches.

The thinking points and examples in this paper should have encouraged you to consider your current practice with students and trainees and to identify ways to structure teaching to encourage students to take a more active role and to make learning opportunities more clinically relevant and meaningful. The importance of planning (however briefly) has been highlighted. In this final section we will revisit our two early scenarios – outpatients and the ward-round and look at how we can integrate the ideas from this paper into typical workplace situations.

Thinking point

In the out-patients scenario above, you were scheduled to run a busy clinic between 9 and 12, seeing patients every 10 to 20 minutes, with 4 students allocated to you. You have done your groundwork this time and have remembered that they are going to be there and are broadly familiar with the aims of their attachment. You also know they are going to be with you in clinic every week for their 5 week attachment.

Think about how you might make best use of this and the next four clinics. Think about the specific teaching input you might provide and equally think about ways to actively involve students in the learning process.

When you have finished, see below for some examples of ways other clinical teachers might approach this.

Plan for outpatients teaching

Identify typical patient scenarios e.g.

- this clinic has new and returning patients
- patients are often sent off for specific tests/investigations (eg x-rays/ ECG/ Echo) and come to back to clinic with films / results
- You will typically conduct a physical examination
- You may take bloods, do urine analysis
- You often have to explain test results / procedures
- You often give information about health care etc

Identify who else might be involved in teaching e.g.

- Colleagues
- Patients and carers
- Nursing staff
- Other members of the MDT

Identify other possible linked teaching activities

- Planned lecture
- Allocated small group teaching time
- Skills lab sessions

Having done this ground work you decided that you are going to take a different theme to focus student attention each week. Themes might include:

- Taking a case history and/or conducting a physical examination
- Involving patients in their own care
- Investigations and procedures and their role in diagnosis and management
- The multidisciplinary management of patients with …
- Differential diagnosis

You might decide to structure each clinic as follows

In the first hour the students divide into pairs – 2 will be with you and 2 will be with a colleague. You are going to give them specific observation tasks and they are likely to get some guided hands-on practice of physical examination

In the second hour you will use a 'breakout' approach. You will work through your list alone for an hour while the students go off with specific tasks to conduct. For example, 2 students will go off and practice a specific skill eg taking a history / conducting physical examinations ready to each try out this skill (observed by you) with a patient in the final hour of the clinic.
The other 2 students are allocated to patients who are being sent off for investigations and go with them and observe. When they return to clinic for the final hour they are given opportunities to explain procedures/ investigation results (with guidance as needed) to patients

At the end of the clinic students are asked to spend 15 minutes debriefing each other (while you round up your clinic/notes etc) and identify 3 questions to ask you before you go off to your next commitment.

The linked papers in this series: *Teaching and learning 'at the bedside'* and *Teaching and learning in outpatient settings* provide an in-depth look at approaches you might wish to use and provide additional examples

Thinking point

Earlier, you were asked to think about a typical ward round (or similar situation) and identify differences in the amount and nature of learner/teacher activity.

Take five minutes to plan for the next ward round and identify up to three ways that you can encourage learners to take a more active role.

Examples might include:

- Students are asked to adopt a specific focus for the ward round e.g. how to establish location and level of patient pain, how test results are explained, how the physical examination is conducted, changes to prescriptions and rationale for doing this etc
- Students are given observation tasks (See 3 Teaching and Learning through active observation for more detail)
- Students are each allocated a patient before the round, they read their notes and chat to the patient ready to give a summary / presentation on the round
- Students are each given the opportunity to conduct the first part of the consultation with the patient to find out how they patient feels/ any changes in symptoms/ any questions they wish to ask, before you take over

Final thoughts

The emphasis of this paper has been to find ways to integrate teaching and learning activities into everyday workplace activity. It has reviewed the ways in which clinical teachers can structure timetabled teaching time and strategies to encourage greater levels of learner participation and activity. The role of the patient has been considered and ways to encourage learners to work and learn independently, with and from each other has been explored. In the final section two typical workplace activities have been reviewed and new ideas about ways to teach and learn have been integrated.

Students and trainees appreciate

- Structured learning opportunities with clear objectives
- Having a legitimate role
- Opportunities for hands-on work and to assume increasing levels of responsibility
- Being supervised and receiving feedback
- Enthusiastic and approachable teachers

See Riesenburg et al (2001) for more about student/trainee perceptions of desirable characteristics of clinical teaching environments.

Hopefully this paper has illustrated some ways in which you might provide such opportunities for those who learn with you.

References and further reading

Crosby,J. (1996) *AMEE Medical Education Guide No.8. Learning in small groups*. Medical Teacher, 18(3), p. 189-201

Dunn, D. and Chaput de Saintonge,M. (1999) *A student view of self-directed clinical learning*. Medical Teacher 21(3) 302- 307
.
General Medical Council (1993) *Tomorrow's Doctors: recommendations on undergraduate medical education*. London: GMC.

General Medical Council (1997) *The New Doctor*. London: GMC.

General Medical Council. (1999) *The Doctor as Teacher*.GMC.

Gibson,D. and Campbell, R. (2000) *The role of cooperative learning in the training of junior hospital doctors: a study of paediatric senior house officers.* Medical Teacher 22(3), 297-300

Henderson. E. , Berlin, A., Freeman, G. and Fuller, J. (2002) *Twelve tips for promoting significant event analysis to enhance reflection in undergraduate medical students*. Medical Teacher 24(2), 121-4.

Murray,E et al (2001) *What do students actually do on an internal medicine clerkship? A log diary study*. Medical Education 35, 1101-1107

Riesenburg,L., Biddle, W.,and Erney,S. (2001) *Medical students and faculty perceptions of desirable primary care teaching site characteristics*. Medical Education, 35, 660-665

Spencer,J., Blackmore, D., Heard,S., McCrorie,P., McHAffie, D., Scherpbier,A., Sen Gupta, T., Singh,K. and Southgate,L. (2000) *Patient-orientated learning: a review of the role of the patient in the education of medical students*. Medical Education, 34, 851-857.

Stacey,R. and Spencer, J. (1999) Patients as teachers: a qualitative study of patients' views on their role in a community-based undergraduate project. Medical Education 33, 688-694.

Stanley,P. (1998) *Structuring ward rounds for learning: can opportunities be created?* Medical Education, 32, 239-243.

Steinert,Y. (1996) Twelve tips for effective small group teaching in the health professions. Medical Teacher 18(3),p.203-207

Thistlewaite,J & Jordan,J (1999) *Patient centred consultations: a comparison of student experience and understanding in two clinical environments*. Medical Education 33, 678 – 685

Wadoodi,A. and Crosby, J. (2002) *Twelve tips for peer-assisted learning: a classic concept revisited.* Medical Teacher 24(3), 241-244.