

JUST-IN-TIME TEACHING: Teaching ad hoc in the workplace

SCOPE: this guide is for you if you want to know how to teach students who arrive at your workplace when you have had no time to plan teaching. 'Workplace' is defined broadly; out-patient clinic, hospital ward, surgical theatre, biomedical lab, home visit, etc.

TOP TIPS:

Top tip 1: Welcome students and don't send them home!

Top tip 2: Be kind - warmth and friendliness matter more than being a subject expert.

Top tip 3: Involve your patients where possible – the majority like it.

Top tip 4: Consider using a simple structure for your teaching.

Top tip 5: Promote 'active observation' instead of shadowing.

Top tip 6: Make the learning opportunities inherent in routine jobs explicit.

Top tip 7: Be open about your uncertainty and think out loud

Top Tip 1: Welcome students and don't send them home!

There has been a steady decline in the time that medical students are exposed to patients and clinical areas over recent decades (Peters and ten Cate 2014). This is due to a range of factors, such as increases in student numbers, patient flow, patient acuity and clinical demand and the advent of modern clinical teaching methods such as simulation and virtual clinics. Clinical exposure is very important for learning, with research suggesting that around 80% of clinical acumen is learnt 'on the job', (Dornan et al 2019). We need to help students make the most of their time in the workplace, so resist the temptation to send students away, for any reason, as there are always opportunities for them to learn.

Top Tip 2: Be kind - warmth and friendliness matter more than being a subject expert.

Medical students can feel unwelcome or in the way during clinical attachments, (Mackenzie et al 2020), and place great importance on simply feeling accepted in the workplace, (Cuddy, 2015). At the same time, the tendency is for professionals, such as junior doctors, to be most concerned with appearing knowledgeable and credible, (Cuddy 2015). This may create a mis-

match between what students feel they need from doctors, (warmth), and what doctors think they should be projecting to students, (subject expertise). Make sure you are warm and welcoming to students and tell them that they will be useful. You are a powerful role model.

Top Tip 3: Involve your patients where possible – the majority really like it.

Research shows that patients like to be involved in the development of medical students more than we might expect, (Peters and ten Cate 2014), so involve your students in direct clinical care where this is possible.

Top Tip 4: Consider using a simple structure for your teaching.

Teaching that is ad hoc does not need to be unstructured. Where there has been time to prepare for clinical teaching in advance, a 'set-body-close' structure is usually very helpful: this is described in the 'Planning and facilitating workplace teaching' guide in this series, (please refer to this guide for details). The same principles may be applied to most ad hoc teaching. In ad hoc teaching, the 'set' might simply comprise 30 seconds of negotiating a learning objective with a student and 30 seconds explaining what you will try to do to meet this objective. The 'body' could be any clinical encounter of any length. The 'close' could be 1-2 minutes where you ask the student for two things they have learned and one question they have, followed by you (or them) summarising the generalisable key points.

Top Tip 5: Make the learning opportunities inherent in routine jobs explicit.

Giving students routine clinical jobs can be a good way of enhancing their sense of purpose and identity as doctors, through 'legitimate peripheral participation' in the workplace, (Lave and Wenger 2012). However, sometimes it is difficult for students to see what they are learning when they do what they (and we) may think of as mundane or menial tasks, such as collecting a patient from a waiting room, taking blood or requesting an X-ray. It is better if we frame these as essential, core tasks and also make the learning explicit. One way to do this is by thinking of some specific learning objectives that will be achieved, and what they, and you, will do. With thanks to Dr Callum Cruickshank for the example below.

Job	Learning objectives	What student does	What doctor does
Phlebotomy	Demonstrate venepuncture in the context of local policy Justify indications for investigations Interpret investigations	Thinks about necessary bloods Considers what results expected Chases results Documents results Communicates results to clinician	Asks "what bloods do you think we need and why?" Teaches generalisable rules ("always remember...") Provides feedback or assists rather than taking over

Top Tip 6: Promote 'active observation' instead of shadowing.

Shadowing, ie having a student passively observe, has been shown to be of limited value. There are, however, many times when you will not be able to actively involve a student in the workplace. For example, in some clinical emergencies it could be unsafe to do so, and there will probably be no time to think of learning objectives. At these times, 'active observation' can be extremely useful. Active observation simply means giving the student specific things to do while they watch what is happening. It is best to make time to discuss their observations later. An example is given below.

"Please watch what goes on and ...	... think of 3 questions you have about this patient."
	... decide which aspects of my practice you think you might do differently."
	... imagine you are the patient here - what concerns might you have?"

Top Tip 7: Be open about your uncertainty and think out loud.

As students move from the text-book presentations of the classroom into real world medicine, they will start to experience uncertainty. Role model negotiating uncertainty by thinking your decision-making process out loud, so that students can see how you have arrived at your decision: eg, "I'm unclear about ... and I'm wondering whether ...". In some cases, it is appropriate to do this with a patient present, (indeed sometimes it enhances patient care). When talking with students about complex issues, ask open questions that encourage them to think broadly, eg "What do you think might be going on here?", instead of "What do you think the diagnosis is?". Asking open questions helps you gauge their knowledge base as well as revealing uncertainties. There is no standardised approach to teaching uncertainty but thinking out loud and asking open questions can help.

SUMMARY: The time that students are exposed to clinical environments is in decline and we must make the most of the authentic learning experiences they provide. Students need to feel welcome and useful in the workplace and patients generally want to be involved in teaching. Even in busy workplaces, there is usually time to apply a simple structure to teaching, eg 'set-body-close'. Where there is no time for this, active observation tasks are useful. It is important to be explicit about the learning opportunities within routine jobs. Thinking out loud can teach clinical reasoning and role model how we deal with uncertainty.

WHERE NEXT? This resource has been developed by the [Clinical Educator Programme](#) (CEP) in collaboration with NHS Lothian's Medical Education Directorate (MED). The CEP is a free CPD programme for clinical educators in SE Scotland. For more on the themes discussed in this guide, you may like to register for the CEP Teaching in Clinical Environments course.



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