DLT Handbook: Supplement for Medical Educators

Table of Contents

Introduction to DLT for Medical Educators

Developing Learning and Teaching/Training is a way of making the most of your first teaching/training experiences in Medical Education and UK higher education. If completed in full it leads to 'fast-track' Membership of the Academy of Medical Educators (AoME) and the award of SEDA PDF Supporting Learning which is recognised at universities across the UK. Completion of Day y One of the 1.5 day DLT programme is recognised by Health Education England Thames Valley for meeting local mandatory Educational Supervisor (ES) training.

The programme consists of four core elements and a portfolio:

1. Attendance at 8 hours of seminars/workshops involving peer discussion
2. Experience of teaching/training
3. Reading a small amount of educational literature
4. Reflection on and analysis of your teaching/training experiences in the light of ideas from the literature and discussions with your peers/mentor; and

    A portfolio of 2500-5000 words, made up of items of your choice

In addition, you may be mentored by an experienced academic/trainer. However, this is not a requirement.

The individual elements are not intended to be completed in order, as this list might suggest. For example, you do not need to wait until after you have completed some teaching/training before starting to write a portfolio. Rather, these activities are most effective when undertaken in parallel. More details on the activities and advice on how to produce a portfolio are provided below.

It is recommended that you complete the activities and the portfolio which records them in the course of a single trainee posting and one to two terms for undergraduates. Ideally, you will complete your teaching/training and portfolio recording in parallel with the above.

EDUCATIONAL VALUES

Teaching Values: Professionalism, educational management and leadership

At the level of the DLT, you will be expected to be engaged in some teaching/training and be motivated to learn how to improve same continuously through experimenting with new teaching/training approaches, systematically gathering input on your teaching/training from students/trainees and peers, reflecting on it, and considering those experiences in light of educational literature. As such, you will be taking professional responsibility for your own role – whatever it may be at this stage – in medical education. You will be managing your own time and resources in balancing teaching/training with your other professional commitments and operating within established quality standards within your teaching/training contexts.

You will reflect on and put into practice core values shared by those involved in medical education undergraduate in the UK. These include demonstrating respect for others, promoting equality and diversity, demonstrating professional integrity, demonstrating a commitment to scholarship and

reflection as it applies to education, promoting safe learning environments and maintaining appropriate knowledge of the core subjects you are teaching/training. For those involved in clinical education, you will ensure the safety of patients and high quality care. For those involved in other forms of community service, you are expected to demonstrate care for the communities within which that learning is happening.

A statement of your teaching/training philosophy

Typically, statements of teaching/training philosophies are used as the introduction or conclusion of a portfolio, and the ideas, values and beliefs they outline are used to draw together themes in the other portfolio items as well as communicate core values related to teaching/training. Such statements are sometimes required in the US and Canada as part of academic job applications, and would typically answer questions such as: what do I expect to be the outcomes of my teaching/training? How do I know when I've taught successfully? What animates my teaching/training? Examples of US statements can be seen at the following URL: http://www.crlt.umich.edu/tstrategies/tstpum.php . More examples are provided in the Oxford Learning Institute's Teaching Skills Part 3 workshop. A simple framework is: Why do you teach? How do you teach?; and Why do you teach that way.

LEARNING OUTCOMES

Actual teaching/training experience

One of the goals of the DLT programme is that participants develop their capacity to learn from their experiences and put the insights they gain into practice in their future teaching/training. For this reason, actual experience of teaching/training forms an essential part of the programme. "Teaching/training" includes any of the following activities:

a. Design/planning of learning activities;
b. Specific instances of face-to-face or online teaching/training in different contexts;
c. Providing a student/trainee with feedback to enhance their learning, and/or assessing their progress;
d. Review and evaluation of teaching/training, including use of findings for future planning.

These aspects of teaching/training are most often experienced as integrated or connected parts of a particular activity – for example, it is almost impossible to teach effectively if one has not thought about what one is doing in advance (and hence engaged in some sort of design/planning process); the face-to-face teaching/training involved in practicals and in bedside teaching or in the clinic frequently takes the form of providing cycles or iterations of feedback to a student/trainee as they progress through a particular task or solve a particular problem; one way of evaluating whether instruction has been effective is through the student/trainee's performance in assessed activities; and effective planning usually depends on effective review and evaluation of past experiences.

More information on each of these activities and suggestions for what might be used in your portfolio are provided below.

Minimum teaching/training requirements for Medical Educators

The minimum required teaching/training experiences to complete the DLT programme are that participants undertake either teaching/training in two different settings, or a more extended experience in one setting. Co-teaching/training is encouraged, however, participants must be actively involved in some part of the teaching/training. See Core Handbook for examples.

Appendix 1 of this **handbook** offers some suggestions on where teaching/training opportunities are regularly available in the clinical settings. The following sections provide more detail on what each of the core aspects of teaching/training involve and how you might use them to build up items for your portfolio.

Lesson Design: Planning of learning activities

Effective learning is most likely when the medical educator (and usually the student/trainee!) has some idea of what kind of learning a particular activity is intended to produce. The basic design process for learning activities therefore usually involves the following steps:

- thinking about what you want your student/trainee to learn
- thinking about what they already know or are capable of doing
- designing resources and activities that provide opportunities for a student/trainee to achieve what you intend
- thinking about how you will know whether they have learned what you wanted them to learn (i.e. identifying what would constitute evidence for learning)
- designing an activity or assessment task (e.g. a workplace based assessment) that will reveal to both you and your student/trainee whether or not they have achieved that learning (i.e. something that provides the evidence you seek)
- Drafting a formal lesson plan
- Critically Evaluating own teaching – decisions made and how linked to educational literature.

This kind of process may be engaged in at the level of individual sessions, such as tutorials, classes, lectures or labs or at the bedside or other clinical workplace setting; at the level of sequences of sessions; or at the level of whole courses or programmes.

Whatever your involvement in teaching/training, it is likely that you will have the opportunity to plan some aspects of it. Although participants in the DLT programme are unlikely to have design/planning control over curricula and syllabi, you can always think through the task or topic you have been asked to teach and decide how to best help your student/trainee reach the desired learning outcomes. The design process is about making the choices you make explicit. For example, those teaching at the bedside or in the clinic may negotiate with students/trainees the nature of the tutorial topic, learning outcomes and learning methods, and means of assessment. Those teaching in classes may make decisions about what problems to go through, what to ask what to ask students/trainees to do, and what to do themselves. In other cases, you may have the opportunity to work with others (perhaps your mentor) to design a specific learning activity – for example – a new OSCE station, series of lectures.

In order to use a design activity as the basis for an item in your DLT portfolio, you will need to write an account of the design process and a critical analysis of the design decisions you made, making

Prompt questions to help analyse critically the design/planning of a learning and teaching/training activity

- What are the key learning outcomes I intend – i.e., what do I want a student/trainee to be able to do following the activity that they may not have been able to do before?

- Why do I think these intended outcomes are worth pursuing?
  - Did I consider the range of intentions the student/trainee might have?

- What activities, resources, learning methods could be used to achieve these outcomes?

- What grounds did I have for choosing the activity I decided on?
  - Did I consider it's effectiveness, efficiency in term of time/resources, how engaging it will be for the learner, ease of delivery for me or another to teach?

- Did I think about the range of backgrounds/interest/prior experiences my student/trainee might have?

- Did I consider where this activity and intended learning fits in my student/trainee's general learning in the discipline/field? i.e.,
  - what knowledge/skills the activity assumes have already been developed, and did I check whether this was a safe assumption?
  - what knowledge/skills the activity gives the student/trainee a chance to practice and further develop?
  - what knowledge/skills the activity introduces?
  - Where a student/trainee might use the knowledge/skills acquired in this activity in their future learning/clinical practice?

- How did I plan for the patient experience?

- What is the role of the teacher/trainer in my designed activity? How are other team members involved or affected?

- What does the student/trainee actually have to do to complete my planned activity?
  - How does this achieve my intended learning?
  - How will I/they know whether they're learning what I/they intended?
  - Have I designed feedback into my planned activity?

- How do my intended learning outcomes and the activity I've designed map on to frameworks from the literature such as the SOLO taxonomy or Bloom's taxonomy?

- Can my designed activity be usefully analysed using ideas such as constructive alignment or cognitive apprenticeship?

appropriate links to ideas from the educational literature. The prompt questions above may help you to think about what such an account should include (but don't feel constrained by them).

Teaching Practice: Specific instance of teaching/training in particular contexts

One of the key attributes of a good medical educator is an ability to take a clear-eyed look at your own practice and to recognise what you are doing, what you are asking your student/trainee to do, and why. It is too often the case that we start teaching/training in a hurry, with little guidance or forethought. As a result, we adopt teaching/training strategies and approaches by default, without thinking about the impact our actions and choices might be having on the student/trainee. Worse still, many medical educators approach teaching/training having thought only about what they are going to do, and not about how the activity will be experienced by their student/trainee.

In fact, when we engage in teaching/training, we are always making a series of sub-conscious and conscious decisions about what we should and can do, what we should ask our student/trainee to do, and what is important in the given learning situation. This process of in-the-moment decision-making has been recognised and written about by several educationalists, perhaps most famously Arthur Schoenfeld, but of course is also a key part of descriptions of how medical practitioners (and other professionals) respond to and function effectively in complex situations.

A core part of your portfolio could therefore be an account of a specific instance of your teaching/training. This could be a tutorial, a class, demonstrating in a lab or at the bedside, on ward rounds, in clinics or in theatre, acting as a guide on fieldwork, facilitating an online discussion, or whatever experience you think would be useful for you to analyse.

Your account of your chosen teaching/training experience should include a description of what actually happened (who did/said what etc.) and a critical analysis of how what you did and what you got your learners to do (or tried to get them doing!) reflects or aligns with your underlying beliefs on

- what is important in/about your discipline or the medical profession or specialty;
- how people learn and how teaching/training can be used to help people learn; and
- what is unhelpful in learning situations.

You should also reflect on how you came to hold these beliefs, whether you have evidence from your own experience, from that of others and/or from the educational literature to support them.

Make a conscious effort in your account to identify moments where you could have done something other than what you did, analyse why you did what you did, and think about the consequences of what happened and what might have happened. There are various ways to produce such an account. One could write down what you are intending to do (and why) before the session, write out what actually transpired immediately after, and then review it a few days later and try to analyse what happened and why. You can think of this as being an example of a Predict-Observe-Explain activity. Alternatively, you could use a purely reflective approach, keeping record of your teaching/training. You may wish to use the questions on the next page to prompt your thinking.

Prompt questions to help critically analyse a specific example of an experience of teaching/training

- What is it that I want/wanted student/trainee to learn through this activity – i.e., what do/did I want them to be able to do/think following the activity that they may not have been able to do/think before?
  - Can I usefully analyse my aims using e.g. the SOLO or Bloom's taxonomy?

- Why do I think this is important?
  - Does it relate to developing e.g. discipline knowledge and skills, broader scientific understanding, or generic (transferrable) skills?

- Why do I prioritise in this way?

- What do I think my student/trainee needs to do to learn to do or think this?
  - Why do I think this – is this what I did as a student/trainee? Is there any evidence in e.g. the educational literature to suggest this is effective practice?

- What do I think I need to do to help my student/trainee learn?
  - Why do I think this – is this how I was taught? Is there any evidence in e.g. the educational literature to suggest this is effective practice?

- What did I *actually* do?
  - Why did I do it that way? Were there alternatives?
  - What were the consequences of what I did – on student/trainee, patients, other team members? How might things have gone differently if I had pursued a different course of action?

- What did my student/trainee actually do? Why was it necessary/important for them to do this?

- Could I tell whether my student/trainee were learning/making progress?
  - What evidence did I use to make this judgment?

- Did I think they would/could learn during the activity/session, or did I expect them to do the learning somewhere else (e.g. before or after)?
- What was important for student/trainee to notice/understand during the session?
  - Why do I think it was important?
  - What did I do to draw attention to it?

- What wouldn't have mattered if they'd missed? Why wouldn't it matter?

- What did my student/trainee find easy? And what did they find confusing/challenging? Why? Do ideas such as threshold concepts or troublesome knowledge help me understand what was difficult?

- Can I analyse what happened in terms e.g. the cognitive apprenticeship model, key principles of learning, self-regulated learning or some other framework?

- Do these experiences back up or challenge my beliefs about how people learn, and what teachers have to do to teach effectively?

Teaching Practice: Providing a student/trainee with feedback to enhance their learning, and/or assessing their progress

As mentioned above, the provision of feedback to help a student/trainee learn is often a core part of face-to-face teaching/training, but may also be undertaken through the marking and return of submitted items such as essays, reports, problem sets, computer programs, case presentations, or outcomes of surgery and so on. As a medical educator, your job is to provide feedback that focuses both on what the student/trainee has done well and what they have done less well, indicating why the student/trainee's performance is good or bad, its impact on patients or other members of the team, and how it can be improved. Feedback may take many forms: e.g. verbal or written, one-way or dialogue, structured or free-form, formative or summative. It may come from different sources: other medical educators, fellow students/trainees, patients, other team members, progress through a structured activity or even automated computer feedback. And it may come at different times: during an activity, immediately after an activity or significantly later. It may also be related to formal assessment procedures such as workplace based assessments required for progression through clinical training.

If you are giving student/trainee feedback or assessing their progress in tutorials, in projects, at the bedside, in clinics or on ward rounds or in any other teaching/training context, you may choose to use examples in your portfolio of the feedback you give and how it helps student/trainee learning. Your account of assessing progress and giving feedback should analyse what kind of evidence you use to make judgments, and how you think a student/trainee will be able to make use of the feedback you give. You may wish to use the questions below to help you structure your account.

Prompt questions to help critically analyse your judgment of progress and provision of feedback to student/trainee

- What was the task my student/trainee undertook?

- What would have constituted excellent/adequate/poor performance?

- What determines the distinguishing features of excellent performance – is it e.g. my beliefs about what is important in expert behaviour?

- Did I have explicit criteria in mind when assessing/providing feedback?
    - If so, what were they, and did student/trainee have access to them in advance?
    - If not, would it have been helpful to draw some up?
    - Was I consistent in my judgments? How did I ensure this?

- What form did the feedback take, and who gave it?
    - Why was this a useful form/source of feedback?

- How did I expect my student/trainee to use the feedback they received?
    - Did it relate to a future learning activity?

- What signals did the feedback student/trainee received send about the nature of the task they had/were engaged in?
    - What signals did it send about the nature of the discipline?
    - What signals did it send about what they have to do to learn/make progress?

- What did I do to check how student/trainee understood the feedback they received?

- Looking back on the feedback my student/trainee received, how did it compare to the descriptions of effective feedback given in the educational literature?

Review of Teaching: Review and evaluation of teaching/training, including use of findings for future planning

There are many ways in which you can gather evidence to use in reviewing and evaluating your teaching/training. As with feedback to a student/trainee, feedback to medical educators can come in many forms and from many sources. The key skills that we hope you develop in the DLT programme is the ability to decide what evidence you need, find effective ways to gather it and then respond to it constructively by thinking about implications for your future teaching/training.

Gathering evidence by seeking feedback from peers/experienced colleagues

Observation is an excellent way to learn about and get feedback on teaching/training. Observation of others' teaching/training, and having your own teaching/training observed can help you to:

- think about how a student/trainee learns in individual and group settings;
- discover new teaching/training strategies;
- question assumptions about approaches to teaching/training;
- gain experience of practices in a new institution, and/or revisit your own student/trainee experience in a new light;
- engage in conversations about teaching/training with others through discussions between you as medical educator and observer;
- learn how to both receive and give feedback about teaching/training.

All DLT participants are encouraged to observe others teaching/training and to have their own educator performance observed. This experience can be undertaken with your mentor, with another more experienced trainer, colleague or with peers. Cross-disciplinary observation can be as successful as observation with colleagues who work in the same discipline area.

Observation is usually most successful where some thought is put into how the arrangement will be managed, and where the observer and medical educator both have time to discuss the observation soon after the teaching/training has taken place. Some guidance is provided below; your department may also have specific guidelines for teaching/training observation.

Some brief notes on successful observation

- Plan in advance where the observer will sit and whether you will introduce him/her to the student/trainee. You should make it clear to the learner that they are not being judged (and neither are you).

- If there is another person involved, such as a patient, ensure that they understand the purpose and role of the observer and obtain their consent before proceeding.

- Finding out what you do well is as useful as finding out what is not going so well. Ask for and give positive feedback.

- It is very easy for the observer to focus on the person in the medical educator role, but it is usually helpful for the observer to focus on student/trainee behaviour and the interactions between the medical educator and the learners. This is partly because if the observer and person being observed share a disciplinary background the observer may easily understand aspects of the session which are not so clear to the student/trainee. More importantly,

interactions reveal an enormous amount about what is going on during a teaching/training and learning activity.

- There are many different approaches to teaching/training and for very valid reasons you and your observer may not always agree. This is why we suggest that the person being observed specifically directs the focus of the observer, and that the observer notes for later discussion any strategies that he/she has never tried.

- It is best to have a discussion about the observation within 24 hours of the observation taking place – preferably immediately afterwards.

You might like to develop a set of observation questions based on your reading in the educational literature – for example, if you have been attracted by the cognitive apprenticeship model of teaching/training, you may wish your observer to indicate where they thought you were modelling, coaching, scaffolding or fading. To help you get started, a set of prompt questions is provided below.

Sample observation questions

Before the session: to be responded to by the person being observed in advance
- What do you hope to achieve in this session?

- What do you expect the students/trainees to gain from the session?

    Have you any comments for the observer about how you expect the session to unfold?
    - e.g. have the students/trainees been studying this topic already? Have they been asked to prepare in advance of the class? Is this a group you know well?

- What specific aspects would you like to be observed or get feedback on?
    - e.g. are you trying out an approach for the first time? Would you like the observer to watch for something that you won't be able to easily observe? Is there a particular concept you really want the students/trainees to grasp?

Immediately after the session: to be responded to by the observer and then used as a basis for a debrief discussion
- What do you think the main 'take-aways' would have been for the learners in this session?
- In your opinion, are the students/trainees likely to have achieved what the teacher intended them to achieve?
    - If so, why? If not, why not?
    - Did the teacher do anything to gauge student/trainee prior understanding/abilities?
    - Did you note any differences between students/trainees in the class?
    - Do you think the students/trainees were aware of what they had learned?

- Were connections made with learning in previous or future sessions?

- What was the role of the patient (or third party) in the process? What impacts did student/trainee or medical educator behaviour have on patient care?

- What did the In other cases, you may have the opportunity to work with others (perhaps your mentor) to design medical educator do particularly well?

- What struck you most about the session?

- What did you notice about any feature of the session that the person being observed had asked you to give feedback on?

Gathering evaluation evidence from students/trainees

Your students/trainees are, of course, an extremely important source of evidence on which to evaluate your teaching/training. You might gather their views on their learning (and your effectiveness as an educator), for example through surveys/questionnaires, informal discussions, focus groups, minute papers or a range of other processes. You may also gather evidence by using e.g. diagnostic tests that help you determine whether students/trainees gained what you were intending they should learn (or indeed anything else). Some Departments, Colleges and Specialty Schools have standard student/trainee experience questionnaires that you may use, but it can be most helpful to design your own questions and methods of data gathering if you have specific questions about your practice that you would like to answer.

One of the quickest and easiest ways of getting targeted feedback on a particular session is the minute paper. In this technique, open-ended questions are distributed at a pre-determined point in a session (often at the end) and students/trainees are given a few minutes (usually 2-3) to write their responses. Some examples of possible open-ended questions are provided below.

Sample minute paper questions

What was the most important thing you learned in this session?

What would you have liked to spend more time on?

What are you most confused about?

What activity(ies) in this session were most helpful to your learning? Why?

What activity(ies) in this session were least helpful to your learning? Why?

Gathering evaluation evidence from yourself

It may sound strange, but you can also use yourself as a source of evaluation data. Many medical educators find it extremely useful to keep a teaching/training record, analogous to a lab logbook, in which they record their teaching/training activities (plans, preparation, delivery, etc.), details of things they think went well or not so well, ideas as to why, and ideas they have relating to possible future activities. This record can be used to look back on how your thinking and practice has changed over time. Your own reflections on your teaching/training can thus supplement feedback you seek e.g. from your senior colleagues, peers, students/trainees, patients and other professionals.

Educational Literature: Reading some relevant educational literature, educational research and scholarship

There is a wide and varied literature available for medical educators. Some of the published literature is aimed specifically at those new to teaching/training, while other literature is specific to particular disciplines. Educational literature can provide the following:

- A shared language for discussing teaching/training: there are many helpful concepts in the educational literature which can help you to think about the different areas of your practice
- Tools to think and practice with: reading about how others teach and trying out some strategies can help you to refine your own approach to teaching/training
- A scholarly approach to teaching/training: researchers have explored many aspects of undergraduate and postgraduate medical education, including teaching/training strategies, how students/trainees learn, course design, and you can benefit from this expertise.

You are not expected to become an expert in educational literature. However, you are expected to be able to link what you do read to your own teaching/training practice/context. You are expected to draw on this reading explicitly in your portfolio.

Some suggestions for reading are provided as an appendix. Remember that you are not expected to read everything on the list, but rather to select some pieces which interest you. You are not limited to this reading list and can also read and include in your portfolio materials that you find yourself – try looking at journals such as the International Journal of Science Education, Academic Medicine, the Medical Educator etc. to get an idea of what is out there. You can also ask your mentor and the Educational Development Consultant (Sciences) at the Oxford Learning Institute for suggestions.

Diversity & Your Development as a Teacher/Trainer

These are outlined in the Core DLT Handbook. Of note is that they include specific portfolio requirements or contents. The portfolio is not a document which proves that you are a good medical educator. It is not like a *CV* or job application, for example, where the main concern is to show yourself in a good light. Therefore, you should focus primarily on documenting your teaching/training development. You do not need to worry about whether the teaching/training itself is always of an excellent standard. For example, it is very acceptable to use the portfolio to explore teaching/training situations which did not go particularly well and which you would like to revise in the future. There is great value to be gained from reflecting on the teaching/training you have done and analysing the causes of any weaknesses or strengths.

PRODUCING YOUR DLT PORTFOLIO

The written portfolio is the item which is assessed for accreditation for SEDA PDF award and toward Membership of the Academy of Medical Educators[1]. Writing the portfolio also provides an opportunity for you to integrate and further reflect on your experiences, beliefs and priorities in teaching/training as a medical educator. Both for accreditation purposes and to make the most of the opportunity for reflection, it is important that the portfolio documents not only your teaching/training activities but also the ways in which, over time, you are developing your teaching/training practice and your ideas about your role as an effective medical educator.

Portfolio structure

The criteria for a successful portfolio are outlined in the Core Handbook **as are the details of the assessment criteria.**

You may choose how to structure your portfolio, provided you can fulfil the requirements of the marking criteria. Remember there are certain required contents i.e. Diversity. Some candidates approach the portfolio as an essay, for which they pose one or two teaching/training and learning questions (for example, how can I encourage all student/trainees to actively engage in teaching) and then draw on their own experiences and educational literature to develop an answer. Many candidates write several smaller pieces and then tie them together with an introduction which gives an overview of their activity and development. The sample prompt questions given in each of the preceding sections can be used to help produce items for your portfolio. In addition, some ideas for pieces which can be included in the portfolio are given below.

You are encouraged to include appendices to your portfolio where these will help the reader to understand your portfolio writing (see also DLT Core Handbook). For example, if you are discussing your approach to giving written feedback, then it is very helpful to include one or two actual examples in an appendix, and to refer the reader to these. If you are discussing a classroom/workplace assessment technique that you have tried with your students/trainees, then their responses might be included in an appendix for the reader to see. To help decide what to include in an appendix, check to see whether or not you have referred to a particular document or piece of evidence in the main body of the portfolio – only include those things that you actually discuss.

Potential portfolio items

The DLT core handbook outlines the portfolio contents, expected and required.   More guidance is available at the Portfolio Workshop session and/or from the teaching team.

---

[1] Note: to be entitled to use the postnominal letters MAcadMEd, you must also complete an application form to the Academy of Medical Educators http://www.medicaleducators.org/index.cfm/membership/apply-for-membership/ and pay a subscription fee for membership.

Procuring an Educational Qualification

Membership of AoME

Medical educators are also eligible for 'fast-track' certification through the Academy of Medical Educators. Anyone who has successfully completed the course will be able to apply for Membership of the Academy without the need to go through the full application and assessment process. Instead they will be required only to provide confirmation that they have successfully completed the Accredited course, and to sign a Declaration that they support the aims and values of the Academy. To be entitled to use the post nominal letters Macadamia, you must also complete an application form for Membership to the Academy of Medical Educators which can be downloaded from http://www.medicaleducators.org/index.cfm/profession/accreditation/ You will also need to pay a subscription fee for membership of the AOME.

SEDA PDF Award

This is outlined in the DLT core handbook.

Mentoring by an experienced medical educator or trainer in your department

If you wish, you may arrange or request a teaching/training mentor. Your mentor should be an experienced medical educator, although they may not teach or research in exactly the same field or specialty as you. You are free to approach one of your more experienced colleagues and ask them to mentor you.

A teaching/training mentor can help you in a number of ways, for example they may be able to:

- Provide an opportunity for you to observe their teaching/training
- Observe your teaching/training
- Discuss your portfolio ideas and plans, and offer feedback on some draft work
- Help you to think through teaching/training dilemmas (e.g. how to plan your first teaching/training experiences, how to improve your approach in a certain area, how to deal with any problems you are having)
- Review a lesson plan, lecture PowerPoints or your written feedback to student/trainees/trainees
- Share their approaches to teaching/training and how they developed these over time

A mentoring relationship is primarily about giving you an opportunity to think about your own approach to teaching/training and to discuss it with someone who shares a similar disciplinary background. You should think of your mentor as a 'critical friend' rather than as a 'teaching/training expert'. A teaching/training mentor will NOT do the following:

- Tell you how to teach (they may offer their opinion or their own approach, but you should use your judgement as to whether this is the right approach for you)
- Solve your problems (they are likely to help you talk through your options, but ultimately it's up to you to decide on any solution)

- Find teaching/training opportunities for you
- Remain your mentor for a long period of time. The mentoring relationship is expected to last for one or two academic terms (approximately 6 months).

It is up to you and your mentor to decide how and when they will support you. Most mentors particularly enjoy working with DLT participants who are proactive and make specific suggestions about the kind of help they would like.

Remember that your teaching/training mentor will have many other pressures on their time and may not always be able to fulfil your requests. In particular, make sure you ask in plenty of time if you would like them to observe your teaching/training or to offer feedback on your marking, lesson plans, workplace assessment technique. Remember that if your mentor is not able to help out on any particular occasion, you could also ask one of your peers to do the same for you – and you can offer to help your peers. Peer observation and feedback have been shown to be powerful even when one or both parties lack significant experience of teaching/training.

Appendix 1: Finding teaching/training opportunities

Before seeking an opportunity to teach, you should think carefully about your ability to balance the time spent teaching/training with the time you spend on your research or clinical work. You should discuss your situation with your supervisor (if relevant) and ensure that you have his/her agreement for undertaking any significant workload.

Below are some suggestions to help you if you wish to find some teaching/training.

Departmental teaching/training

Your supervisor or other contacts through your research may be able to tell you if there is likely to be any teaching/training available in your department.

Forms of teaching/training

Individuals sometimes believe that the only forms of teaching/training which can be given credit for DLT are lectures, tutorials or classes. Don't forget that supporting an undergraduate student/trainee doing a dissertation, doing lab demonstrating, and co-teaching/training with a more experience lecturer (and perhaps completing some marking, or leading a part of the class) are also forms of teaching/training.

Clinical teaching/training

For those in clinical teaching/trainings, there are several opportunities to teach. These include formal lectures, bedside teaching, college tutorials for fourth year medical students, and, for consultants, clinical and educational supervision of postgraduate trainees. Doctors-in-training have opportunities to teach and train those in peer and less senior grades, in addition to medical students. In these settings, the workplace is the teaching/training arena, supported as necessary by college based tutorials, departmental seminars, lectures and regional specialty membership programmes.

Final Honours School (FHS) tutorials for Medical and Physiological Sciences

One can formally offer to do FHS tutorials on the Tutorial Booking Scheme in Medical and Physiological Sciences. The scheme is accessed via the web-based booking system; see https://www.physiol.ox.ac.uk/Seminar_Bookings/index.cgi

To be allowed to offer tutorials you have to be given approval by the Division. Approval requests should be directed to Jeremy Taylor, who is in charge of preclinical teaching/training.

For more experienced medical educators

If you have some experience you may wish to apply for a stipendiary or non-stipendiary college lectureship, these are offered normally during the summer, advertised in the University Gazette or on the http://www.ox.ac.uk/about_the_university/jobs/collegevacancies/ website. If you have a substantial amount of prior teaching/training experience in the UK, you may wish to consider the Teaching/training Fellowship Preparation programme as a more advanced alternative to the DLT: http://www.learning.ox.ac.uk/programmes/tfp.

Appendix 2: Reading list

The following is NOT intended to be an exhaustive list, but it does provide a starting point. You can also look for things online yourselves. Unfortunately, there is as yet no database of science education research, however Google Scholar works well with the right combination of key words (e.g. undergraduate engineering laboratories). For those in medicine, PubMed is a useful source of articles on medical education.

The following list will help you find journals that carry articles you are interested in. As well as generic science education journals such as *Science Education* and *International Journal of Science Education*, most science disciplines have at least one journal that is dedicated to or frequently carries education articles, e.g. *Chemical Education*, Medical Education, etc.   Sad to say, most academics are completely unaware of the existence of these journals, and so are unable to avail themselves of the resources they offer. Sample these resources and you will find things that help you, provoke you, and give you pause for thought.

 We strongly suggest that you do not limit yourself to reading materials based in your own discipline – some of the ideas discussed in relation to engineering education, for example, may help a biologist think about why teaching/training in his/her discipline is different or similar.

General texts

Brookfield, S. D. 2006. *The Skillful Medical educator: On Technique, Trust, and Responsiveness in the Classroom* (2nd ed.)*.* San Francisco: Jossey Bass.

Entwistle, N. 2009. *Teaching/training for Understanding at University*. Palgrave Macmillan. (Some thought-provoking stuff based on recent educational research, and written in a fairly personal, accessible way.)

Fry, H, S. Ketteridge and S. Marshall. 2003. *A Handbook for Teaching/training and Learning in Higher Education: Enhancing Academic Practice* (3rd ed.).   London: Routledge. A good introductory text with recommendations for further reading.

Higgs, J. (Ed.). (2008). *Clinical reasoning in the health professions*. Elsevier Health Sciences.

Leamnson, R. 1999. *Thinking about Teaching/training and Learning: Developing Habits of Learning with First Year College and University Student/trainees/trainees*. Sterling, Va: Stylus. *Leamnson is a US Professor of Biology and in this book employs a biological concept of learning to explore his approach to teaching/training. It's very accessible and Leamnson shares a lot of his practical teaching/training activities and his rationale for them. Although it claims to be primarily about first year teaching/training, the principles and ideas he uses can be applied throughout higher education. Chapter 5, 'Teaching/training and Pedagogy' is particularly recommended.*

Morss, K. and R. Murray. 2005. *Teaching/training at University: A guide for postgraduates and researchers*. London: Sage Publications. Particularly helpful chapters on lectures and small group teaching/training, which the authors call 'tutorials' – don't get caught out! The book also discusses teaching/training portfolios and you should remember that this is general advice, not specific to the Oxford DLT portfolio.

Ramsden, P. 2003. *Learning to teach in higher education*. London: Routledge Falmer. (One of the classics, which you are likely to find useful as you progress to more substantial teaching/training role including some design responsibility.)

Sweet, J, S. Huttly and I. Taylor. 2003. *Effective learning and teaching/training in Medical, Dental and Veterinary Education*. London: Kogan Page.

Clinical teaching/training

Branch Jr MD, M. A. C. P. (2002). Feedback and reflection: teaching/training methods for clinical settings. *Academic Medicine*, 77, 1185-1188.

Cantillon, P. & Sargeant, J. (2008). Teaching/training Rounds: Giving feedback in clinical settings. *BMJ* 337:a1961. doi:10.1136/bmj.a1961

General Medical Council. (2014). Good medical practice. Retrieved from: http://www.gmc-uk.org/guidance/

General Medical Council. (2009). Tomorrow's doctors. Retrieved from: http://www.gmc-uk.org/Tomorrow_s_Doctors_1214.pdf_48905759.pdf

Neher, J. O., Gordon, K. C., Meyer, B., & Stevens, N. (1992). A five-step" microskills" model of clinical teaching/training. *The Journal of the American Board of Family Practice/American Board of Family Practice*, 5(4), 419.

Nilsson, M.S., Pennbrant, S., Pilhammar, E. ,& Wenestam, C-G (2010). Pedagogical strategies used in clinical medical education: an observational study. *BMC Medical Education 10:9*, http://www.biomedcentral.com/1472-6920/10/9.

Spencer, J. (2003). ABC of learning and teaching/training in medicine: Learning and teaching/training in the clinical environment. *BMJ: British Medical Journal*, 326(7389), 591.

Educational and Clinical Supervisors

HETV "pretenders or bluffers' guide" on theories of learning for Educational Supervisors. J Siddall, 2014 – see 'virtual bookshelf': www.oxforddeanery.nhs.uk/educator_development_strategy/educator_training.aspx
Honey and Mumford's learning style questionnaire – available at
http://www.peterhoney.com/

Learning in the Workplace: A Toolkit for Facilitating Learning and Assessment in Health and Social Care Settings *Joan Mulholland and Chris Turnock* Routledge 4 Sep 2012

QOTFC Clinical educator's resource kit http://www.qotfc.edu.au/resource/?page=65375

Academy of Medical Educators: http://www.medicaleducators.org

GMC: Promoting Excellence: standards for medical education and training (2015) http://www.gmc-uk.org/Promoting_excellence_standards_for_medical_education_and_training_0715.pdf_61939165.pdf

HETV "Virtual Bookshelf" – online resources for supervisors.
http://www.oxforddeanery.nhs.uk/workforceeducator_development/educator_development_strategy/educator_training.aspx

London Postgraduate Medical and Dental Education. E-learning ,Reflective writing.
http://www.lpmde.ac.uk/professional-development/elearning-support-and-self-review-modules

Sisco, B.R. (1991) Setting the climate for effective teaching and learning. In Hiemstra R, *Creating Effective Environments for Effective Adult Learning*. Jossey-Bass.

http://www.amazon.co.uk/Teaching-Adults-Practical-Jossey-Bass-Education-ebook/dp/B00QQMUSP8/ref=sr_1_2?s=instant-video&ie=UTF8&qid=1433093430&sr=8-2&keywords=Creating+Effective+Environments+for+Effective+Adult+Learning

Educational and Clinical Supervisors
Specific topics
Appraisal Planning: Trainer Handbook Chapter 4 First Educational Appraisal. Royal College of Psychiatrists. 2011.
Supporting and Developing Trainees:
Trainee in Difficulty – Handbook. Institute for Medical Education and teaching.
http://www.utas.edu.au/data/assets/pdf_file/0006/94596/Trainee-in-Difficulty-Handbook.pdf

Professional Support Unit.   http://www.oxforddeanerycdu.org.uk

Oxford Deanery Protocol for Supporting and Developing Doctors and Dentists in Training.
http://www.oxforddeanery.nhs.uk/pdf/Oxford%20Protocol%20for%20Supporting%20andDeveloping%20Trainees2013.pdf

Public health and epidemiology
Battat, R., Seidman, G., Chadi, N., Chanda, M. Y., Nehme, J., Hulme, J., ... & Brewer, T. F. (2010). Global health competencies and approaches in medical education: a literature review. *BMC Medical Education*, 10(1), 94.

Campbell, A., Sherman, R., & Magee, W. P. (2010). The role of humanitarian missions in modern surgical training. *Plastic and reconstructive surgery*, 126(1), 295-302.

Drain, P. K., Primack, A., Hunt, D. D., Fawzi, W. W., Holmes, K. K., & Gardner, P. (2007). Global health in medical education: a call for more training and opportunities. *Academic Medicine*, 82(3), 226-230.

Psychology and psychiatry
Lonka, K., & Lindblom-Ylänne, S. (1996). Epistemologies, conceptions of learning, and study practices in medicine and psychology. *Higher Education*, 31(1), 5-24.

McParland, M., Noble, L. M., & Livingston, G. (2004). The effectiveness of problem-based learning compared to traditional teaching/training in undergraduate psychiatry. *Medical education*, 38(8), 859-867.Ed

Singh, S. P., Baxter, H., Standen, P., & Duggan, C. (1998). Changing the attitudes of tomorrow's doctors' towards mental illness and psychiatry: a comparison of two teaching/training methods. *Medical education,* 32(2), 115-120.

Evaluation of teaching/training
Angelo, T.A. and P.K. Cross. 1993. *Classroom Assessment Techniques* (2nd ed.). San Francisco: Jossey-Bass. See especially Chapter 3, First Steps. A list of CAT ideas is also available online but to make the most of this it is best to read Chapter 3 first: http://www.uoregon.edu/~tep/resources/newteach/fifty_cats.pdf

McKeachie, W. J. et al.   1999. 'Appraising and Improving your Teaching/training' in *McKeachie's Teaching/training Tips: Strategies, Research and Theories for College and University Medical educators* (10th ed), pp. 270-283. Many general teaching/training books contain good overviews of evaluating your

teaching/training. I think this chapter is particularly thorough but do look at others, perhaps from the general texts suggested above.

Laboratory teaching/training

Forster, F., D. Hounsell, and S. Thompson (eds). 1995. *Tutoring and Demonstrating: A Handbook*. Edinburgh: Centre for Teaching/training, Learning and Assessment, University of Edinburgh. A thorough introductory handbook.

Kirschner, P. A., Meester, A. M. 1988. The laboratory in higher science education: Problems, premises and objectives. *Higher Education* 17: 81-98. Explores a range of reasons for using labs – thought provoking.

Lecturing

See also the chapters on lecturing from the general texts recommended above.

Bligh, D. 2001. *What's the use of lectures?* (5th ed.). Exeter: Intellect. A well-known text which reviews the research on lectures. Not discipline specific.

Brown, G. and M. Manogue. 2001. AMEE Medical Education Guide no. 22, Refreshing Lecturing: A guide for lecturers. *Medical Medical educator* 23: 3, 231-244. A very accessible and thorough guide to lecturing. If you only read one item on lecturing, make it this one. There are some really helpful ideas on lecture preparation in particular, and it's a useful guide for all sciences, not just medical education.

Small group teaching/training

See also the chapters on small group teaching/training in the general texts recommended above.

Jacques, D. 1991. *Learning in groups* (2nd ed). London: Kogan Page. See especially chapter 6, 'Tasks and Techniques' and Chapter 7, 'The Tutor's Job'.

Tutorial teaching/training in Oxford

Ashwin, P. 2005. Variation in Student/trainees/trainees' Experiences of the 'Oxford Tutorial'. *Higher Education* 50, 631-644. *A discussion of the tutorial which explores different conceptions student/trainees/trainees might have about its purpose. The article includes a good overview of the tutorial (p.632-3).*

Ashwin, P. 2006. Variation in academics' accounts of tutorials. *Studies in Higher Education* 31:6, 651-665. *This article explores the tutorial from the accounts of academics, using the same research approach as the 2005 article on student/trainees/trainees' experiences. The academics interviewed are drawn from across all divisions in the University.*

Palfreyman, David. (ed.) 2001. *The Oxford Tutorial: 'Thanks, you taught me how to think'*. Oxford: OxCheps: http://oxcheps.new.ox.ac.uk/Publications/Resources/OxCHEPS_OP1.doc

Approaches to teaching/training

This section contains articles or practical examples of a range of different ways of conceptualising or organising teaching/training. The ideas often cut across teaching/training settings (lecture/tutorial, etc).

Cognitive apprenticeship model of teaching/training

Collins, A., J. Seely Brown and A. Holum. 1991. Learning Institute extract from 'Cognitive Apprenticeship: Making Thinking Visible'. *American Educator*. This article argues that we should think of the process of teaching/training as a form of apprenticeship in which some of the thinking processes need to be made visible to student/trainees/trainees. A thought-provoking piece with clear practical application in the classroom.

Stalmeijer RE, Dolmans, D.H. J. M., Wolfhagen, I. H. A. P., Scherp, A. J. J. A. (2009) Cognitive apprenticeship in clinical practice: can it stimulate learning in the opinion of students? Adv in Health Sci Educ (2009) 14:535–546; DOI 10.1007/s10459-008-9136-0

Shaddel F, Ghazirad M, O'Leary D, Quinlan KM, et al. (2016). Cognitive Apprenticeship in Clinical Practice; Can it be extended to Postgraduate Psychiatry Training Programmes? M J Psy 1(1):005. (http://www.mathewsopenaccess.com/PDF/Psychiatry/M_J_Psyc_1_1_005.pdf)

Concept tests and peer learning in science

A You Tube introductory video to Mazur's approach http://www.youtube.com/watch?v=lBYrKPoVFwg

 Mazur, E. 1999. Peer Instruction: A User's Manual. *American Journal of Physics* 67: 4, 359-360.

Case-based and problem-based approaches to teaching/training

US National Centre for Case Study Teaching/training in Sciences website **http://sciencecases.lib.buffalo.edu/**.

This site has many case examples in a wide variety of science fields and you can use or adapt any which may be appropriate for your student/trainees/trainees.

Overton, T. 2005. 'Introduction to problem-based learning' and 'Web resources for problem-based learning'. Hull: Physics Subject Centre. Available to download as pdfs from the following urls:

http://www.heacademy.ac.uk/assets/ps/documents/primers/primers/ps0087_problem_based_learning_mar_2005.pdf

http://www.heacademy.ac.uk/assets/ps/documents/primers/ps0090_web_resources_for_problem_based_learning_mar_2005.pdf

Spiral curriculum

Harden, R.M. 1999. What is a spiral curriculum? *Medical Medical educator,* 21:2, 141-143.

Teaching/training perspectives / theories of teaching/training

Fox, D. 1983. Personal theories of teaching/training. *Studies in Higher Education* 8: 2, 151-163.

Kugel, P. 1991. How professors develop as medical educators. *Studies in Higher Education* 18:3, 315-329.

Pratt, D. 2002. Good Teaching/training: One size fits all? In *An Up-date on Teaching/training Theory*, Jovita Ross-Gordon (ed.), San Francisco: Jossey-Bass AND Learning Institute handout on Pratt's five teaching/training styles. A much more interesting read than the title suggests – great for thinking about your own philosophy of teaching/training or rationale for your actions.

Other

Oxford University Student/trainees/trainees Union. 2010. *Teaching/training Review Report*. Oxford: OUSU. Highly recommended. A section is devoted to the student/trainee experience of teaching/training in the Medical Sciences division. Available at the following url:

http://issuu.com/ousu/docs/ug_teaching/training_review_report_2010

21