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Whether you're new to teaching or want to advance your existing knowledge and skills, our courses can help you get the most out of medical education theory and practice.

This leaflet has been written and designed to help you to reflect on your feedback practice, and potentially plan for ways in which you can improve on it.

This guide introduces you to some of the educational theory underpinning effective feedback practice and touches upon features that can enable feedback to guide learners' personal and professional development, as well as features that may act as barriers to this. Also shared are some of the models available for helping you to structure feedback, and space for you to consider how these might inform your own practice.

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Feedback

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Feedback

Feedback is any dialogue that supports learning in both formal and informal settings. Feedback is more than information transmission.

According to Hattie & Timperley (2007), feedback interactions must reduce discrepancies between current understandings, performances and desired goals. The learner needs to be able to articulate a learning goal (where am I going?), analyse their performance in relation to that goal (how am I going?), and develop an action plan to achieve this goal (how do I get there?). These are referred to as: feed up, feed back and feed forward respectively.

1. **Feed up** – related to the question 'where am I going?'
2. **Feed back** – related to the question 'how am I going?'
3. **Feed forward** – related to the question 'where to next?' or 'how am I going to get there?'

What is the purpose of feedback?

Assessment and feedback processes should empower students to become self-regulated learners (Carless, 2006). Learning is enhanced when learners are self-regulating, actively engaging in setting learning goals, selecting strategies for achieving these goals, and monitoring their progress toward these goals. Self-regulation hinges on learners being able to access and interpret information that indicates how their present state relates to their learning goals (Nicol & MacFarlane-Dick, 2006).

The main purpose of feedback should be more than correction. Its purpose is to develop students' ability to monitor, evaluate and regulate their learning.

Feedback can occur in any setting, may be formal or informal, embedded within workplace learning and embodied.

Importance of feedback

Consistently, feedback is shown to have a positive effect on learning (Shute, 2008). It can lead to learning through cognitive restructuring of knowledge or through affective increases in motivation. Research consistently shows that we are poor self-assessors and that external feedback is needed to promote learning (Eva & Regehr, 2008). Yet one third of feedback interactions have been shown to lead to deterioration in performance (Shute, 2008).

Pitfalls of feedback

Nicol & MacFarlane-Dick (2006) present four challenges in students' interpretation of feedback including:

1. Blurring of the line between intended work and what was actually produced based on the effort expended.
2. Understanding of concepts or terms used in the feedback.
3. Lack of tacit knowledge about assessment.
4. Dissonance with expectation and credibility of the feedback giver.

Mindset

Dweck (2006) talks about two mindsets: 'fixed' and 'growth'. The fixed mindset sees critical feedback as criticism while the growth mindset sees its possibility to be used developmentally.

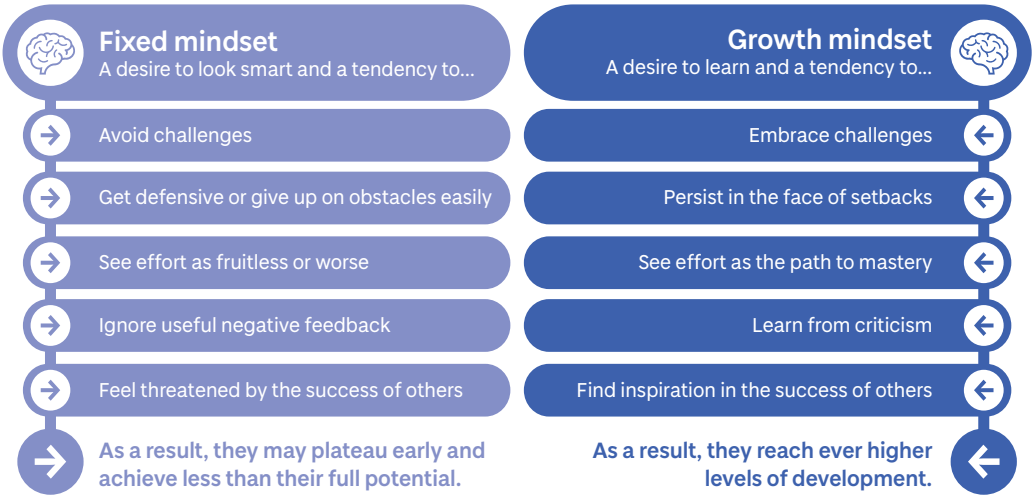
Fixed mindsets are foremost about how they will be judged. Mistakes must be hidden rather than corrected. These students don't recover well from setbacks, blaming others for their failure. However, Dweck (2006) has found a fixed mindset can be transformed, at least temporarily, to a growth mindset by six strategies:

1. Sharing knowledge of 'fixed' and 'growth' with students.
2. Emphasising the importance of nurture versus nature.
3. Praising hard work rather than intelligence/ abilities.
4. Including in feedback the need to try different strategies and work harder.
5. Encourage reflection on improvement due to hard work.
6. Modelling belief that change is possible.

The educational alliance

Feedback acceptance, and its potential to result in learning, is reliant on more than content and how it is delivered. The educational alliance between the educator and the learner is important to consider.

Using the educational alliance as a lens re-frames the feedback process from one of information transmission to one of dialogue occurring within an authentic and committed educational relationship that involves seeking shared understanding of performance and standards, negotiating agreement on action plans, working together toward reaching the goals, and co-creating opportunities to use feedback in practice (Telio et al, 2014).



(Adapted from Dweck, 2006)

Personal planner

In this personal planner, some of the educational principles you can use to guide your feedback practices are outlined. For each of these principles, reflect on how you integrate these into your own teaching practice, and actions you could take to build on this.

Feedback models

Many models of feedback are reported in literature, e.g. Pendleton's methods, the W3 model, or the feedback sandwich. The important thing to remember is that these are not 'rules' to be followed too strictly.

Which feedback models are you familiar with? What are the pros and cons of these models?

Educational principles to guide feedback practices

1. **There should be opportunities for feedback to be used in future work –** this principle relates to taking a programmatic approach to assessment and so demands a developmental perspective on feedback. Rather than viewing feedback as a single occurrence or a 'knee jerk' reaction to a piece of work (Boud & Molloy, 2013), it should be seen as a series of educational opportunities optimised across the lifetime of the programme.

   Strategies to achieve this:
   - Encourage discussion about goals and follow up on progress
   - Shared development and understanding of action/learning plans

   Consider the strategies above; how do you integrate these into your teaching practice? How could you build on this?

2. **Be dialogical in nature –** feedback should be seen as a process of communication and therefore a social and constructed phenomenon. A dialogic approach to feedback is essential to promote students' understanding of assessment practices through creating space for discussion and knowledge generation.

   Strategies to achieve this:
   - → Ensure dialogue spaces are created that are viewed as safe environments for staff and learners
   - → Reflect on who is doing most of the talking during feedback interactions

   Consider the strategies above; how do you integrate these into your teaching practice? How could you build on this?

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3. **Encourage self-evaluation and monitoring of own work and seeking of feedback –** feedback should progressively enable students to more effectively monitor, evaluate and regulate their own learning, independently of the teacher. Enhancing students' ability to self-review and monitor their performance should reduce reliance on teachers and is a skill that should transfer into their working lives beyond university (Boud & Falchikov, 2006).

   Strategies to achieve this:
   - Require students to self-evaluate their work against assessment criteria and/or learning goals
   - Encourage students to seek feedback on specifics

   Consider the strategies above; how do you integrate these into your teaching practice? How could you build on this?

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4. **Develop students' evaluative judgements –** the rationale underpinning this principle is that tutors' tacit knowledge around assessment is the result of multiple evaluative judgements and seeing different ways of addressing the task (Nicol & MacFarlane-Dick, 2006). Students need to be given the opportunity to take part in the processes of making academic judgements to help them develop appropriate evaluative expertise themselves (Sadler, 2010).

   Strategies to achieve this:
   - Require students to self-evaluate their own work and evaluate the tutor's feedback against their own self-evaluation
   - Create structured opportunities for students to obtain feedback from peers in formative assessment tasks

   Consider the strategies above; how do you integrate these into your teaching practice? How could you build on this?

Flipped classroom

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What is flipped classroom?

The flipped classroom is a reconceptualisation of how pre-, during and post-class time is utilised by the lecturer and students.

In the traditional class, students prepare before the class, spend the class time listening to a lecture then complete homework activities post- class. In the flipped classroom model, students study the course material prior to the class, either on their own or with their peers, and the after-lecture homework activities are done in the face-to-face time.

Many tutors give students pre-lecture readings. What is new is the ease of distribution of pre-class study materials through online access and increased technology-enhanced accountability. This enables students to access and prepare for the class at a time and pace that suits them. This cultivates a more student-centred approach, with students taking responsibility for their learning (Barnett, 1997).

Advantages of flipped classroom

Hamilton and Tee (2010) give the following advantages of using the flipped approach:

- Use of face-to-face time enables some instructor control and enables learners to practise higher order skills inside the classroom with tutor guidance.
- This increases motivation, enables deeper learning, and provides for better information management.

Purvis et al (2011) suggest there is increased productivity for both the tutor and the student.

The tutor can set activities to test or gauge their students' levels of abilities and understanding before the classroom activities take place. This allows the tutor's class time to be used to clear up any misunderstandings or to reinforce key points.

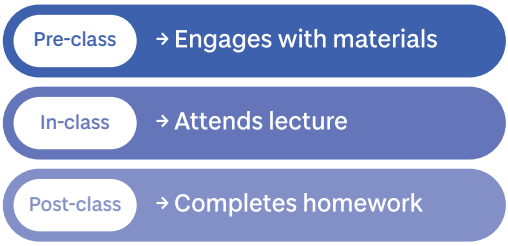
Students have opportunities to enhance their digital literacy skills through engagement with flipped classroom activities and also to engage more with their peers. Options to use a range of devices and ways to communicate result in less restrictions on how students and tutors share information and content.

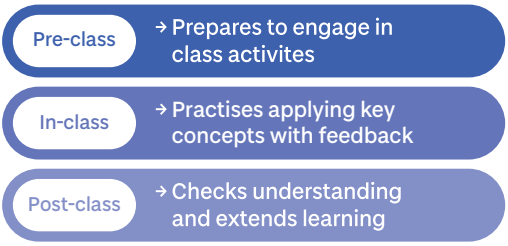
What are the disadvantages?

Although materials can be reused, creation is often resource-heavy. Tutors may also have to develop their own technology skills in order to create content. If students don't prepare by doing the pre-class activities this can have a detrimental impact on the in-class activities. Likewise, lack of tutor preparation time can have a detrimental effect on outcomes, student engagement and tutor experience. Students who are on a lower income may have limited access to technology required to access flipped classroom activities (digital divide).

Anecdotal evidence suggests the flipped classroom engages the students more, with the advantages outweighing any disadvantages. Students have more time to absorb the information in advance of the class, perhaps test out their understanding, then have that clarified or reinforced during the in-class activities.

How flipped classroom works





1. It takes time

As well as allocating time to plan the pre-class material, you need to build time for activities such as writing and recording a pre-class lecture. This takes a lot longer than delivering a live lecture. Think about the software you'll use – what do others in your institution use? You will also need to factor in editing time. Do you have the skills, or will you require technical support? Do others in your unit have experience they can share?

If you want to test your students' understanding of the pre-class content, you may want to create a quiz in advance of class. If you want to assign groups for the activities, do you need to set aside time for 'forming and norming'? If your students will be using online tools such as a discussion board or Padlet this will also need to be set up ahead of the activity. You may have to create instructions for your students to access this and allow time for orientation.

2. Make time for your own development

Observe others flipping the classroom, either live or online. Critically reflect on what went well, what could have been improved, and what you will take forward in your own teaching.

3. Keep pre-class material focused

During the planning stage, ask yourself, what do the students need to do to achieve the learning outcome(s)? How will you encourage critical analysis and reflection? Will you link this with assessment? You might link a video with a supporting quiz for students to self-assess, or ask students to collaborate via an online discussion board. You should also indicate how pre-class activity feeds into the class time.

4. Timing

The pre-class work needs to be doable in the set time allowed. It's important that this time is within notional study time rather than being seen as an additional time commitment, and that there is sufficient time between accessing pre-class material and the in-class session which enables students to complete any tasks. Allow in-class time to deliver a 5-minute flash lecture to address any confusions arising.

5. Location, location, location

Where you will upload the material? Does it need to be secure? How will your students know where to find it? If there is an institutional VLE (virtual learning environment), this may be the best place. It will be password-protected, familiar to the students, backed up, and there will be technical support from your institution. However, students may prefer a protected webpage, blog or online forum. Wherever it is located it should be accessible across a range of devices and platforms.

6. Use other people's stuff

Don't feel like you always need to create new content from scratch – there is already a lot of material available which can be adapted for your own use. There is increasing use of Creative Commons licensing, and search engines such as Google images have search tools for usage

rights, but remember to check on copyright for anything you use.

7. Work with others to develop content

Involve your peers in reviewing each others' aims, ideas and content. Think beyond working only with tutors — what about working with students (current or more senior)? Or other stakeholders such as patients, health professionals, carers. Again, keep in mind your learning outcomes.

8. Expect resistance from students

Don't be surprised if there is initial resistance from some students. Sitting through a traditional lecture is safe, comfortable and anonymous. Now you are asking the students to actively prepare before the class and work hard during the in-class session. Before using the flipped classroom approach for the first time, orientate the students. Explain the rationale and long-term advantages behind using this approach, and what is expected of them.

9. Be flexible on the in-class time

A lot of the literature discusses group work during the in-class time. Honeycutt (2016) recommends giving students the opportunity to reflect and work individually. Again, focus on your learning outcomes — is team-working one of your outcomes? If not, is collaborative working always best?

10. Start small

As with starting any new method of delivery, start small, and have a back-up plan. This will be less stressful for both you and the students. Don't try to flip your whole course overnight, rather, for example, target a couple of lessons, a couple of weeks apart, so you can reflect and make any changes necessary.

11. Keep the same structure

Use a consistent format, for example:

- 1 hour engaging with pre-class activity
- 1 hour in-class tutorial, working on aligned problems
- 1 hour post-class individual assignment reflecting on their learning

Use a consistent style and standard format, colours, and graphics to aid student orientation.

12. Include student self-evaluation

An important part of developing life-long learners is supporting students in developing their self-evaluation skills. How will you encourage their self-evaluation of their understanding of pre-class materials? For example, you might include a short quiz based on the content, with instant access to scores or pointers to revision material for the students.

13. Include monitoring

If students don't complete the pre-class material, the effectiveness of class time work will be compromised. Encourage student accountability by making their learning visible. Use analytics to check student levels of accessing materials. Include quizzes, ask students to complete summaries, post discussions. This will inform you about student engagement and understanding, and can be completed pre-class, or, as in Team Based Learning, at the start of the class session. Make clear to students what you will be checking, when, and why, including the impact on their learning if they don't engage with the process.

14. Plan how you will use the in-class time

Don't spend all your time creating content for pre-class learning — you need to spend time designing class activities. These should be hands-on, utilising higher order thinking and developing problem-based skills.

15. Pilot

Perhaps the most important part to pilot is the pre-class activities. Ask colleagues or senior students to assess what you intend to do. Are your instructions clear? Are the materials accessible? Do all the links work? What should students do if they have problems? Is the time allowed reasonable? Allow time to make changes if they are required.

Personal planner

In this personal planner, we have provided some prompting questions to help you think through the planning process around the flipped classroom approach to teaching.

Design the delivery

Pre-class

- Identify materials suited to outcomes.
- How will the pre-class material be delivered?
- What format will it be in?
- How will students know how to access the material?
- Are there copyright issues?
- Does the material need tailoring / developing?
- Are there accessibility considerations?
- How long will the pre-class material take for students to complete?
- Who else should be involved? (e.g. admin, library staff, IT)
- How will you motivate students to complete this work?

Preparing the students

- Is this the first time they have used a flipped approach?
- How and when will you introduce the approach?
- How much detail is needed?
- Ensure students know the appropriate support contact (e.g. academic, IT / eLearning support). Are these via generic mailboxes? What is the response time?

In-class session

- What task(s) will the students complete in the in-class session?
- Are there other resources you need? E.g. flip chart, paper and pens, sticky notes?
- Will students be working individually or in groups?
- Will you use existing groups or do you need time to form them?
- If forming, will they be self-selected? Tutor-formed?
- Do you need time for ground rules?
- Will students need mobile devices?
- What for? E.g. in-class online quizzing; accessing web?
- What will they use? Own device? Institution's?
- Will there be one each or one per group?
- Will you need to provide spares?
- Does your room have WiFi?
- What will you do if students have not engaged with pre-class material?

Post-class material

- How and when will the post-class material be delivered?
- What format will it be in?
- How long should post-class material take for students to complete?
- How will this be assessed? (Written? Multiple choice?)
- When and how will results and feedback be given?

Reviewing the lesson plan

- Ask a colleague to critically review.
- If possible, ask more senior students to pilot.
- Are the pre-class materials easy to access?
- Are the instructions clear?
- Is the time allowed about right?
- Do the activities from the three parts fit together?

Formative assessment

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What is formative assessment?

Formative assessment is designed to generate feedback on performance to improve that performance (Sadler, 1998).

It should help students identify their strengths, weaknesses and areas they need to work on. It can help faculty identify where students may be struggling while there is time for remediation. It can also be useful as a continuing measure of impact of teaching. Formative assignments should be low stakes for both students and tutor and focused solely on learning, unlike summative assessment which may result in failure. A useful way to distinguish between the two is that summative assessment is 'assessment of learning' and formative assessment is 'assessment for learning'. It is important the formative assessment happens where there is still time and opportunity for the students to make that improvement, and that the feedback given helps them towards that goal.

Because of this shift of emphasis, formative assessment happens during the learning rather than at the end, and often happens more than once. Nicol and MacFarlane-Dick (2006) highlight several issues relevant to formative feedback. Teachers still tend to 'transmit' feedback and what is right and what is wrong. To become more student-centred (and develop vital life-long learning skills in students), students need to become empowered to self-regulate their learning.

A well-designed formative assessment process will develop these skills as well as those being assessed. The feedback needs to be understood by the students and provide opportunities for them to develop. This may mean a series of formative assessments needs to be created, and done so in a way that is time-manageable for the tutor. Students need to feel motivated to act on that feedback.

Problems with formative assessment

The terminology used to describe formative assessment is often misused and/or misunderstood.

Medical students frequently request more formative assessment, but what they are expecting is an increased number of 'practice' runs of the summative, in the same format, and ideally with similar questions. In postgraduate medical education, where most assessments are made in the workplace on a one-to-one basis, the term 'formative assessment' has been replaced with 'supervised learning event' to make it clear to the trainee that the focus of the encounter is on learning, not assessment. The supervisor's role as both supervisor of learning events and appraiser is a recognised tension.

Pintrich and Zusho (2002) define self-regulated learning as: 'an active constructive process whereby learners set goals for their learning and monitor, regulate and control their cognition, motivation and behaviour, guided and constrained by their goals and the contextual features of the environment'. Although self-regulated by the student, the tasks and assessment criteria are usually devised by the tutor. An eight-step model for designing formative assessment is outlined below.

1. Tutor sets tasks (goals, criteria, standards)
2. Student draws on prior knowledge and motivational beliefs
3. Student sets own goals
4. Student develops tactics and strategies to develop outcomes
5. Internal outcomes e.g. changes in cognitive/affective states such as changes in self-perception of ability
6. External outcomes e.g. observable behaviour change
7. External feedback given to student (e.g. by tutor, peer, computer, patient)
8. Student actively engages to interpret feedback against own evaluation and internalises learning (Ivanic et al, 2000)

Designing the formative assessment

In order to be useful, the formative assessment should provide detailed developmental feedback to the learner. Van der Vleuten et al (2005) describe five areas relating to the utility of assessment: reliability, validity, educational impact, cost and acceptability. Postgraduate Medical Education Training Board (now subsumed into the General Medical Council) added a sixth area: feasibility. If any of these areas is rated zero the utility of the assessment as a whole is zero. This applies to formative every bit as much as to summative assessment.

Tutor availability can make formative feedback to meet student needs at best daunting; at worst it can be seen as a reason for not providing formative assessment. However there is increasing evidence in the usefulness of peer feedback, both for the receiver and the giver (Topping, 2009). By teaching students to give effective feedback we can provide an additional formative learning experience.

Test-enhanced learning

Test-enhanced learning is based on the idea that long-term retention of knowledge is improved by assessment.

The concept has been around since the early part of the 20th century but has been validated by a body of recent research. Roediger and Karpicke (2006) found that students who had undergone repeated testing performed better in a final retention test than those who had repeatedly studied the material being tested. They conclude that 'testing is a powerful means of improving learning, not just assessing it (p 249).

Butler and Roediger (2008) found that the impact of test-enhanced learning could be maximised by providing feedback on both correct and incorrect answers. Kerfoot et al (2007) showed that testing medical students at regular intervals throughout the year (spaced education) significantly improved their performance in the end-of-year examination.

It is important to note that repeated testing using the same question encourages rote memorisation so this technique should be used for factual information. However, some research shows that students who have been repeatedly tested on factual recall also perform better on questions requiring a higher level of cognitive processing in the final exam (e.g. Smith & Karpicke, 2014).

Overall the evidence suggests that frequent, low stakes formative testing (such as quizzes at the end of every teaching session) should promote rapid recall of core factual knowledge, which may in turn improve students' ability to use that knowledge effectively in more complex clinical contexts.

Examples of formative assessment types

Background knowledge probe
Online testing e.g. MCQ, or short answers with answer for student to compare their answer with. Writing feedback on MCQs can also be a good formative exercise.

Muddiest point
Ask students to write down something they still don't understand. Collect and clarify during next class, or ask students to come up with answers.

One minute paper
Students consider what they have learnt and what questions they still have.

Concept map
Ask students to create a visual map to think more deeply about the content – this can be an individual or group task.

Written work
Students submit a short piece of work where the required assessment outcome can be fed back on. Think carefully what the outcome should be and how it links to the summative.

Videos
Students video each other's performance and compare with 'gold standard' video (Hawkins, Osborne, Schofield, Pournaras & Chester, 2012).

Personal planner

In this personal planner section, you are encouraged to use the questions to guide the planning of formative assessment in your own context.

Formative assessment

1. **What is the purpose of the formative assessment?**
   - Is it for the student to gather ideas for a summative?
   - Is it for feedback to allow students to improve their performance?
   - Is it feedback to you as tutor to check for understanding of course materials?
   - Is it diagnostic?
   - Is it to encourage retention of information?

2. **How will you involve students in the development of a formative assessment? Consider:**
   - Collecting student needs including purpose of the formative, and their preferred assessment methods, feedback methods e.g. modality, group or single and timing of assessment
   - Will you involve them in the development of the assignment?
   - Will you involve them in peer feedback?
   - Will the formative assessment be for all students or a select group? If the latter, how will you select?
   - Will you deliver the same formative to different levels of student, but with different assessment criteria?

3. **How many students will you be assessing at a time?**

4. **Consider the format of the assessment:**
   - How will the assessment be delivered? E.g. computer, face-to-face
   - How will the feedback be delivered? Written or orally? To the group or individually?
   - When will the feedback be delivered?
   - Consider the timing of the assessment - diagnostic comes before the teaching, assessing outcomes comes during or at the end of the teaching, preparing for summative assessment could come some time after the teaching

5. **Who will be giving the feedback?**
   - You, the tutor?
   - Another tutor?
   - Peers?
   - Computer
   - Self-assessment
   - Anyone else? E.g. patient...

6. **Who will be involved with developing the assessment?**
   - You alone?
   - Team members?
   - Another member of staff?
   - How will you check it is assessing what you intend?

7. **What resources do you need?**
   - Will you need a special room? E.g. clinical skills?
   - What conditions will the formative be under? E.g. for examination preparation you may want to set up exam conditions.

8. **Do you need training or other information about the technique you have chosen?**

Large group teaching

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What is large group teaching?

Large group teaching, in the form of lectures, is one of the oldest methods of delivering teaching.

A well-constructed lecture that encourages interaction is an efficient and effective method for the transfer of knowledge and concepts and can also be effective in stimulating wider thoughts and attitudes on a topic.

However, a poorly delivered lecture can easily cause boredom and lectures in general have a tendency to encourage passive learning. Some doubt its efficacy as a form of teaching.

A lecture is useful for:

- Introducing a topic, giving the big picture
- Presenting material otherwise not available to students (e.g. current research, reports)
- Summarising widely-scattered sources, emphasising pertinent points
- Sharing your own enthusiasm for a topic
- Modelling professional working through a problem, e.g. 'thinking aloud' through a differential diagnosis

What are the advantages of the lecture?

- Efficient way of presenting a large number of facts to a large audience
- Lecturer has control over the learning experience
- They appeal more to auditory learners than visual, kinesthetic or reading-writing preference learners
- Low risk to students
- Low cost

What are the disadvantages?

- No feedback from audience on the amount and quality of learning occurring
- Student attention rapidly decreases 15–25 minutes into lecture
- Lack of student participation fosters passivity and dependence on the lecturer
- Large burden of preparation falls on the lecturer
- Not suitable for teaching all types of activity e.g. motor skills, analysis, problem-solving
- Not suitable for teaching higher order thinking
- Requires a confident, effective delivery
- Not suitable for all learning styles
- Assumes all students learn at the same pace

Resources available

The resources available will very much depend on your location, but here are a few — can you think of any more?

- PowerPoint / OHP / flip chart
- Interactive white (smart) board
- Visualiser
- CCTV links
- Internet
- Virtual learning environment (VLE)
- Video / audio input
- Other people, e.g. patients, other health professionals
- Audience response system
- Hand-outs

Introducing interactivity

A critique of lectures is that students can lose attention, Bligh (2000) suggests that this is usually after about 20 minutes. To guard against this, introduce activity into your lecture.

Advantages of activities

- Re-enforces learning
- Re-engages students
- Can be used to allow you to measure learning

Activities for large group teaching

You could ask a question, but how do you collect responses?

- Audience response tool such as **TurningPoint** or **polleverywhere.com** using smartphones
- Students brainstorm with neighbour / small groups – remember the larger the small group the longer it will take to do the task but the easier it will be to collect responses
- Include an activity in your hand-out, e.g. label the parts of a diagram. After the set time you can put the answers up on the board to allow students to correct their own work.

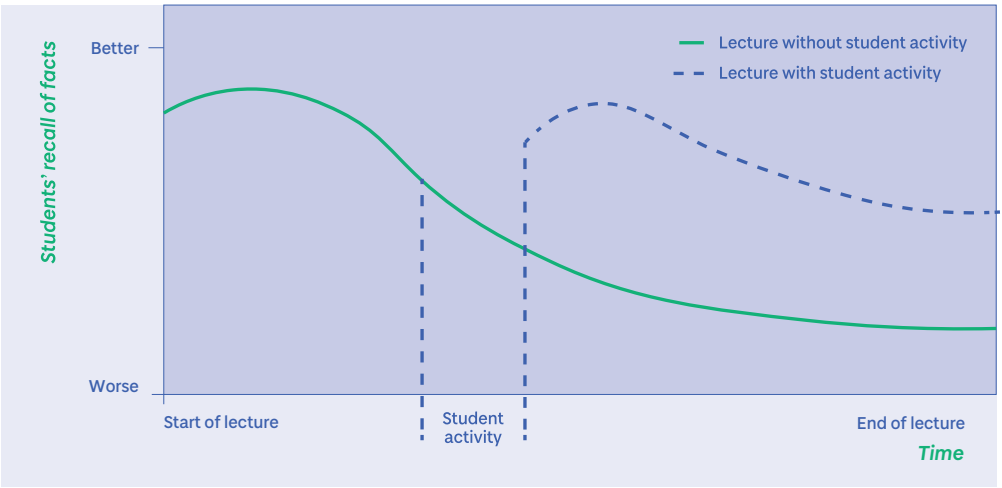
Presentation skills

Body language: smile; look around the audience; don't hide behind the podium – move around a bit (use a clicker to control the presentation slides).

Speech: clear and confident; slightly slower than normal speech; loud enough but not shouting; use repetition / emphasis (though sparingly); if using a microphone, practise with it and don't walk out of its range or wear noisy necklaces.

Interaction with audience: attract attention at the start, make sure what you include is useful to the students, look around audience; don't annoy, bore, confuse, distance or exhaust your audience.

Bligh 2000 figure



Personal planner

Preparation is key to a good lecture. The planning section will help you to think through the different aspects of planning an effective large group teaching session.

Large group teaching

The content

- **Topic / background** – what are your learning objectives?
- **Standards expected** – do you know students' knowledge base? Without this you risk boring them if already covered or demotivating them if too hard
- How does the content feed into assessment?

The structure

- Beginning
- Gain attention
- Ground rules (e.g. when questions will be, mobiles on silent)
- Define objectives
- Middle
- Build around five key points maximum
- Mix of factual information and points of interest
- Logical progression from one key point to another
- End
- Revisit objectives
- Summarise
- Question.

Lesson plan

Consider the timings. How much time will you allocate to each section?

What to do during the lecture:

Just before

- Arrive early if possible
- Test any technology
- Consider where you will stand
- Check you can see the time
- Think about when / how you will distribute hand-outs
- Think about when / how you will collect hand-ins – a box at the exit point is better than at the front

During

- Capture audience's attention
- Let students know how / when questions will be handled
- Annotate time plan with actual times
- Ensure you finish on time
- Thank others, e.g. if you have a guest speaker
- Include time for short evaluation, e.g. one-minute paper

Just after

- Ensure room is fit for the next person

What to do after the lecture:

- Review evaluations, choosing a method sustainable and appropriate for you:
  - → at beginning of next face-to-face session
  - → online e.g. discussion board
  - → via email

- Whichever method, thank students for evaluation, indicate changes (and justify if not changed) and handle questions

- Review your annotated times

- Decide on action e.g. from above:
  - → Why are some students arriving 15 minutes late?
  - → Do I need to talk to their programme director?
  - → Do I need to talk to the student representative?
  - → Is the same 'muddy' point coming up – do I need to edit my talk?

- If peer-reviewed, discuss with reviewer.

Learning environment

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What is the learning environment?

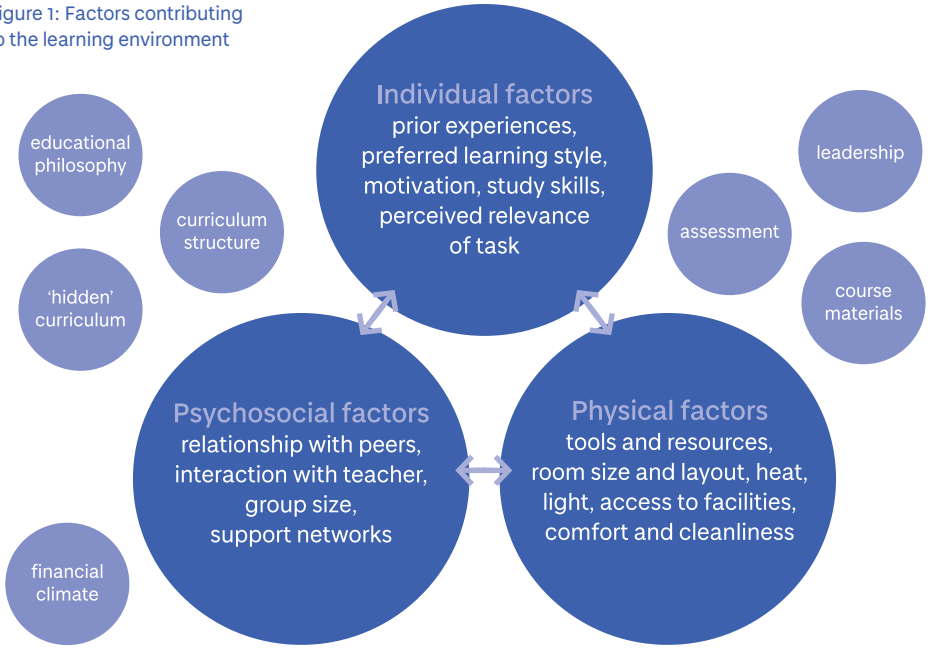
The learning environment can be thought of in broad terms as 'the context in which learning occurs'.

The term 'learning environment' is frequently encountered in educational literature and 'establishing and maintaining an effective learning environment' is almost always a component of competency frameworks or curricula for clinical teachers.

The term can be difficult to define and is often interpreted in different ways in the literature. In this booklet we will consider the range of factors contributing to the learning environment and explore what you can do as a teacher to improve the environment in your own teaching sessions.

At the heart of the environment is the learner, whose learning may be affected by a range of intrinsic or individual factors, such as motivation, prior experience, and preferred learning style. The learner interacts with his or her immediate physical environment as well as with other people involved in the learning experience, for example, peers, teaching staff, and other individuals such as nursing staff or patients. The entire learning experience takes place within the organisational culture of the medical school or clinical workplace which is critical for establishing the 'educational climate'. Taken together, these factors create an environment which will either support or impede learning (Figure 1).

Figure 1: Factors contributing to the learning environment



What makes an effective learning environment?

In theory we can create an effective learning environment by ensuring that all of its constituent factors are optimised to promote learning.

In practice this is more complicated than it sounds because factors which support learning for one individual may hinder it for another. For example, some students may enjoy working in a challenging, competitive environment which celebrates individual achievement, whereas others may prefer a more supportive environment where teamwork and collaboration are valued.

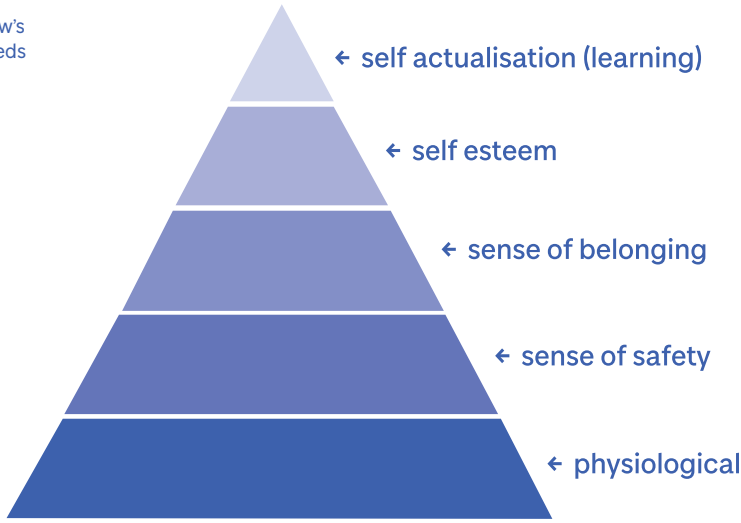
The learning environment, therefore, is not an absolute, measurable entity but exists solely as perceived by the learner. It is always a good idea to get feedback directly from your students or trainees as to what they want from the environment before making changes based on a vision of the 'perfect' environment.

Maslow (1954) described a 'hierarchy of needs' (Figure 2) which he believed had to be met before individuals could achieve their full potential.

At the bottom, basic physiological needs such as hunger, thirst, and comfort must be satisfied. When these have been addressed, the next most pressing need is for removal of threats, for example from personal injury, from loss of or damage to belongings, or from risks to health.

When the learner feels safe, they then develop a need for social acceptance: to feel part of the community in which learning occurs. Once accepted as part of a group, the learner needs to feel valued and respected as an individual which will allow development of the confidence needed to solve complex problems and generate new ideas.

Figure 2: Maslow's hierarchy of needs



The different components of the learning environment

Physical

Physical factors, such as room size and layout, adequate seating, temperature, lighting, external distractions, access to adequate and appropriate resources (including IT) and the general state of repair of the teaching space, are the most controllable aspects of the educational environment.

The biggest barrier to improving the physical environment tends to be financial – with sufficient funding it would in theory be possible to create the 'ideal' physical learning space.

Psychosocial

Educationalists have long recognised that learning does not take place in a vacuum, but in the context of our relationships and interactions with others. Any experienced teacher will have noticed that certain groups of students are much more interactive than others, whilst individual learners may be tense and uncommunicative in a large group but relaxed and enthusiastic on a one-to-one basis.

As teachers we can exert a degree of control over the social and psychological environment. We can choose whether to be confrontational or supportive; whether to encourage or humiliate; and whether to promote active participation in learning or passive receipt of knowledge. We have very little influence over peer relationships which may have developed outside of the formal curriculum and which have often been established over a significant period of time. However we can be alert to dynamics within a group of students and can take some steps to minimise any negative impact on learning.

Organisational

Organisational factors affecting learning are often referred to as the 'educational climate' of the organisation. These factors are often seen as being completely out with the control of the 'jobbing clinician' who delivers the occasional teaching session. Whilst this is true at the level of a single teaching experience, most medical schools are keen to receive feedback and suggestions from their teachers and whilst influencing and implementing change at this level may not be quick or easy, it is certainly possible.

It is possible to 'measure' the educational climate using student and staff surveys. The most widely used, validated tool for this purpose is DREEM (Roff et al, 1997) which has been extensively modified for use in a wide range of educational settings.

Personal planner

In this personal planner section, you are encouraged to use the questions to guide the planning of formative assessment in your own context.

Learning environment

1. Consider yourself as a learner

- What would constitute your ideal learning environment?
- How does the space you normally deliver teaching in compare to your ideal?
- How much does your own perception of the ideal environment influence how and where you deliver teaching?

2. Think about the physical factors contributing to the learning environment

Make a list of the factors you can
1) directly control
2) influence.

3. Would changing any of these physical factors improve the learning environment? Is there anything you can do to offset negative effects of factors outside your control?

4. Establish ground rules

Ground rules set up boundaries for the group, tackling the need for security. Even if you are only seeing the group once, you may wish to establish rules relating to confidentiality and respect.

What ground rules might you set with your learners?

5. Encourage participation

Learners are likely to be more actively engaged and recall more from the session if it is structured around group tasks rather than tutor-directed questioning. They are likely to be more confident with each other and may accept their peers' criticism more easily than yours.

How will you ensure you encourage learner participation?

6. Provide a safe space

Students often feel nervous about speaking out in front of a group, particularly in response to a question from the tutor. A simple way to avoid this is to build in time for paired discussion whenever you want the students to answer more complex questions that require thinking time. This provides a safe space to rehearse their answers before exposing themselves in front of you and their peers.

How will you create a safe space for learners?

7. Challenge the learners

Whilst it is important not to humiliate or devalue students, learning will not occur if they never move out of their comfort zone. Provide difficult problems with complex solutions and ask challenging questions to guide students to the solutions.

Spend some time reflecting on how stress affects your own performance. How will you strike a balance between supporting and challenging in your own teaching?

Small group teaching

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What is small group teaching?

Throughout our lives, as students as well as when qualified, we spend a lot of time working and functioning in small groups.

The term 'small group' implies a small number of students – generally 6-10. However, 'small group teaching' is as much about the teaching techniques used as the number of students.

Generally speaking, small groups are facilitated and not taught. A facilitator is someone who assists the learning progress of an individual or group rather than providing them with all the information as in a didactic session. For staff, this means making the mental transition from acting as the 'sage on the stage' to being a 'guide on the side'.

Why teach in small groups?

Small groups function in a range of ways:

Act as a support system by:
- fostering respect and value of others
- lessening feelings of isolation or difference
- relieving anxiety through sharing problems
- providing opportunities to tackle tasks jointly
- helping to clarify thinking through talking
- building confidence

Foster learning by:
- promoting active learning
- encouraging exchange of information and ideas
- practicing the language and concepts of the course
- cultivating meta-cognition
- acting as a vehicle for change
- modelling an organisational structure for learning
- encouraging responsibility for independent learning

Enhance skills by:
- aiding speaking and listening skills
- helping with a range of key skills
- pooling diverse skills, knowledge and experience
- helping the group develop transferable skills

Change attitudes by:
- allowing members to air and change their attitudes and opinions.

What is the role of the facilitator?

A small group facilitator has two main roles:
to manage the session and to promote learning.

Managing the session involves:

- being adequately prepared
- providing and distributing resources
- keeping students focused
- encouraging participation and collaboration
- dealing with difficult group members or awkward group dynamics
- keeping the session to time

Facilitating learning involves:

- setting clear learning goals for the session
- asking open-ended questions to stimulate thinking
- challenging assumptions
- summarising discussions from time to time
- checking understanding

A facilitator DOES NOT:

- take sides
- let the group avoid important issues

Bear in mind some small group sessions may require information transfer so a more didactic format may be appropriate.

Light touch

It can be scary to start with but it is important to have a light touch with the group

- It is their group
- They are adult learners
- The will learn what they feel it is relevant to learn
- If the aim is important they will learn it but perhaps not in the way you want them to

Encouraging active learning

One of the major advantages of teaching in small groups is that students can participate more actively in the learning.

Many teachers miss this opportunity: in their worry about keeping control of the session they provide a mini-lecture followed by a 'group discussion' that is really just the teacher firing questions at the students and expecting 'correct' answers.

Active learning involves students thinking for themselves, solving problems, justifying their decisions / opinions and setting their own learning goals. A mini-tutorial can start things moving but if your session relies so heavily on PowerPoint that you couldn't run it without your slides, it may be worth a rethink. There are a number of practical exercises you can use to encourage student participation. Most work best with students split into pairs or threes.

- **Anecdote:** use your group's or your own experiences to start a discussion.
- **Case presentations:** use a real patient that one of the students has seen to open a group discussion on the topic. Take care to avoid asking a barrage of closed and/or knowledge-based questions after the presentation. More complex questions relating to differential diagnoses or management plans could be discussed in pairs or threes before being brought back to the whole group.
- **Brainstorming:** allow a free flow of ideas, record ideas without comment on a flip chart or OHP. This opens up a subject in its initial stages and allows everyone's views to be taken into account.
- **Games/quizzes:** a useful revision aid, particularly if the group discusses the answers and no individual is selected out.
- **Modified Delphi:** students write ideas, concerns or questions about a topic on sticky notes and post them on a wall or board. The group or the facilitator can then rearrange the notes looking for recurrent themes related to the topic which can be addressed.
- **Paired discussion:** allows students to rehearse their answers before being put on the spot in front of you and the group. This is a useful exercise for drawing out quiet students, or for giving students adequate 'thinking time' to consider complex questions or problems.
- **Pre-prepared scenarios:** useful discussion starters – additional issues and concepts can be introduced as the scenario evolves.
- **Role play:** good for communication skills. Be careful of sensitive topics and be aware of students' own experiences. It can work best with you or an actor / simulated patient taking on one of the roles. It's important to keep the observers involved by giving them something specific to look for.
- **Snowball:** start with individual thought, move into pairs, then fours before moving into plenary; each change should have a different but related purpose. This is another effective technique for encouraging quieter members to participate as ideas have lost individual ownership by the time they are fed back to the wider group.
- **Video or audio resources:** similar to anecdotes or scenarios but can be more engaging for students, particularly if they include real patients.
- **Written task:** asking students to produce a written record of their work can be a useful way of assessing how well they have met the learning objectives. It does not need to be lengthy or formal – groups can produce a bulleted summary or a poster on flipchart paper to be discussed with the larger group.

Personal planner

In this personal planner, you will be guided to consider the running of a small group teaching session. There is space provided for you to plan your teaching session.

Before your small group teaching session...

1. **Know your audience and your subject**
   - Which year is your student group from?
   - Find out what module the students are studying at the moment in their theoretical and clinical sessions and how your session fits with the other teaching sessions.
   - Find out what the group's aims and objectives are, ideally by asking students to send you topics or questions in advance.
   - Read up on the topic – be sure that you are as prepared as you can be to describe and discuss the topic for the session. No one can be prepared for all the possible questions which may be asked but it is sometimes useful to have some answers prepared for obvious questions.
   - Research sources of information – look up any information the students may already have had access to, e.g. on their VLE.
   - Decide if you want to give the students additional information such as website addresses.
   - Additional resources – consider bringing additional material that will generate discussion or provide a starting place for problem solving, e.g. case histories, multiple-choice questions, video clips.

2. **Plan for effective use of time**
   - Know what you are trying to achieve, define your aims and objectives early in your planning.
   - Set a realistic number of student objectives.
   - Break the time up into 15-20min slots to maximise attention span.

3. **Check your room and resources**
   There is nothing worse than not having all you need to run the session available and in correct working order!

Use the space below to plan how you will address these points.

During the session...

Establish ground rules

Ground rules set up boundaries that the group can use to control its own members. They allow important issues to be discussed and negotiated.

Ground rules should be:

- negotiated by the group and facilitator
- shared by all members including the facilitator
- amendable if the group feels it necessary
- appealed to by any group member.

Starting off

- Consider using an ice breaker such as a simple introduction
- State clear objectives
- Ensure students are happy with objectives
- Explain how you plan to run the session, e.g. case discussion, then practice questions, then Q&As
- Don't talk too much – keep the students discussing
- Use humour – keep it an enjoyable experience
- Encourage everyone to participate.

Useful techniques for managing group discussions

- **Gathering ideas:** treat all suggestions from the group equally and write them on a flipchart to discuss later.
- **Stacking:** ask those who want to speak to raise their hands, put them into order and ask each to speak in turn.
- **Mirroring:** repeat exact contribution made as given to build up trust between the facilitator and group.
- **Paraphrasing:** clarify the contribution being made so everyone understands it.
- **Making space:** be aware of quiet members, watching their body language/facial expressions for signs that they might wish to speak.
- **Intentional silence:** five seconds of quiet time gives participants time to think and formulate what they want to say. This may be to organise thoughts, order comments or decide whether what they want to say is too risky.
- **Drawing people out:** encourages the speaker to expand on their contribution a little more.
- **Encouraging:** create an opportunity for people to participate without putting anyone on the spot.
- **Tracking:** keep track of the various lines of thought going on simultaneously in a discussion.
- **Listening for common ground:** summarise the group's differences and similarities and note areas of common ground.
- **Balancing:** encourage the group to look at contrary views.

Finishing

- Summarise what's been learnt
- Clarify any misunderstandings
- Identify appropriate learning resources
- Students will forgive everything except... being boring... and going over time.

After your session

Leading a small group teaching session can be intellectually and emotionally exhausting. Before you forget what happened, take time to reflect on the event:

- **What went well?** Were you pleased with some parts of your session? Can you identify what made them successful?
- **What could you do better next time?** Were there aspects of group dynamics that you could learn more about for next time? Did you feel that you accomplished what you set out to do and did it as you intended?

Stuggling students

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What causes students to struggle?

Medical students struggle for a variety of reasons, which may not just be academic, but can cause them to feel unsupported, isolated and stressed. Any of the following factors may cause students to struggle:

- **Academic:** assessments, fear of failure, workload, negative feedback, uncertainty of what is expected of them.
- **Health:** disability, dyslexia, chronic disease, alcohol, smoking, drugs.
- **Psychological:** mental health problems including depression, obsessive compulsive disorder, anxiety including performance anxiety, social phobia, lack of support.

Identifying struggling students

Students who are struggling may be identified by exam failure or poor performance during clinical attachments. Periods of absence or failure to respond to emails may also be signs of a struggling student. Changes in behaviour or mood may also signal difficulties. Underperforming students do not seek support since they feel, mistakenly, that to seek help is a sign of weakness. Consequently a tutor needs to see beyond a smiling face to detect hidden problems.

Benefits of supporting students

Effective support for medical students is essential, not only to create an environment which favours learning but also to avoid students leaving the course. Failing students risk disruption to their studies with further academic failure or distress leading to them developing into junior doctors with problems.

What kind of support should be available?

Students need to acquire skills in self-directed learning, which may require encouragement and support. There is a need to achieve a balance between autonomy and dependence. Support tends to be provided in a reactive way following a failure; earlier, proactive support should be available to students who are struggling before they fail.

Examples of effective support include:

- Providing easy access for face-to-face meetings with their tutor, at least twice a year.
- Encouraging students to access guidance and advice to achieve their full potential.
- Providing individual support for study skills.
- Providing clear information to students on available support networks, including peer support.
- Raising awareness of the student counselling and local GP services.
- Providing guidance on the core curriculum, optional components and assessment methods.
- Providing regular and prompt feedback on their academic development.
- Providing sample exam questions for practice purposes.
- Encouraging struggling students to keep in regular email contact with their tutor.

What do struggling students value in a tutor?

Accessibility: sometimes students report difficulty in establishing relationships with tutors. Face-to-face contact is often limited and students may feel intimidated contacting a busy senior clinician they feel they do not know well. Students are more inclined to approach tutors with their problems if they have regular contact and have confidence in them.

Respecting confidentiality: a respect for confidentiality is essential in a successful student-tutor relationship. Although students are generally happy to approach staff about academic matters, they are less sure about contacting tutors about personal issues. Confidentiality is important on both sides.

Giving feedback: many students prefer face-to-face tutor feedback. Meeting with a tutor on a regular basis to discuss their understanding of the core curriculum is valuable. Giving some positive feedback is good for building self-confidence and helping students to address deficiencies.

Knowledge of curriculum: students value support from staff who have an understanding of the medical curriculum and what is expected of the student at each stage. Tutors who can remember their own experiences at medical school are well equipped to relate to a student's particular situation.

Academic guidance: it may be possible for tutors to help students identify educational needs and to advise them about effective learning strategies. Tutors can help students by giving feedback on their clinical case discussions or on their clinical portfolios. In particular, students may need help and encouragement to use reflection as an aid to learning.

Professional development: role modelling is a powerful learning tool. As tutors we have opportunities to be good role models by demonstrating our openness to discussing our strengths and weaknesses. By modelling the reflective process and how this improves our clinical practice we can enhance the students' own professional development.

Knowledge of sources of support available: students benefit from tutors who are well informed of the range of available support. Tutors should know when to make referral to other agencies.

Respect, empathy and patience: students who are struggling need encouragement and sometimes consoling. Some students, having never failed an exam before, find the experience devastating, with a consequent loss of confidence. It is surprising that some students seem to lose confidence as the course progresses and may even doubt that they wish to continue in medicine.

Personal support: tutors should possess the skills to respond sensitively to students who experience a range of personal problems. There may be family problems with a breakdown of relationships causing anguish. Depression may occur and present in failing exams or unexplained absences. Financial worries about funding their course may be difficult for the student to discuss. Stress from their workload or from exam anxiety can impair performance in assessments. Once the student is confident that they can trust the tutor they then disclose these personal concerns.

When to refer

Students who might benefit from more specialist help should, with their consent, be referred to the appropriate service. The medical school should be notified if there is a question of the student's fitness to practice. Problems such as plagiarism, complaints, harassment and bullying will generally require the involvement of the medical school. GPs are the first point of referral for health problems and in cases of longer term disability or dyslexia, Student Disability services may be involved.

Emergencies

Rarely an urgent problem arises, for example:

- Risk of suicide or self-harm
- Risk of harm to others
- Hearing voices or bizarre hallucinations
- Evidence of alcohol or drug abuse
- Breakdown of functioning.

In these urgent situations, action should be taken immediately to contact the appropriate services e.g. emergency services, the student's GP or your institution's health service.

Personal planner

In this personal planner, you will find some prompts that allow you reflect on supporting struggling students.

Struggling students

Before committing to supporting struggling students, consider the questions below:

- Have I the time to take this on?
- Have I the commitment to students to perform the role?
- Do I need to learn any new skills in order to support struggling students?

Before meeting with a student who is struggling, consider the checklist below:

- Book a convenient time
- Provide a room with privacy
- Have a list of useful contact numbers or email addresses. These might include: the lead for academic support, occupational health, careers advisor, chaplaincy

Use the list below to structure your meeting with a struggling student, and ensure you keep notes in each of these areas:

- Introductions
- Explain that you will take notes and what will happen to these
- Ask how things are going
- Explore work and study patterns
- Explore the specific issues raised
- Discuss various solutions
- Agree an action plan
- Offer continuing support and give contact details
- Arrange follow up.

Think about a consultation you have had with a student.
How did you introduce yourself to the student? How did you approach note-taking?

What issues did the student raise?

What solutions did you discuss?

How did you follow up with the student?

What would you do differently next time?

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