

5 How to be a table instructor

—Ian Harris, Robert D Fox

1	Introduction	65
2	Before the course	66
2.1	Familiarization with the surgical procedures	66
2.2	Familiarization with the surgical equipment	67
2.3	Connection with the course chairman	67
3	At the precourse	68
4	During the course	68
4.1	Get to know the participants at your table	68
4.2	Reinforce the demonstration	69
4.3	Controlled supervision	70
4.4	Maintain control over the timing	71
4.5	Ensure participant comprehension	71
4.6	Stick to the script	71
4.7	Feedback to course participants	72
4.8	Keep an eye on the rest of the practical: problems and how to deal with them	72
4.8.1	Nonattendance of course participants	72
4.8.2	Lack of experience with certain procedures or implants	72
4.8.3	Participants with poor understanding	73
4.8.4	When there is more than one instructor	73
4.8.5	Course participants going too far ahead	73
4.8.6	Spending too long with one course participant	73
5	After the course	73
6	Summary of principles of effective coaching for table instructors	74
7	Anecdote	75
8	Bibliography	76

6 How to give a lecture

—KokSun Khong, Lisa Hadfield-Law

1	Introduction	77
1.1	Aim of the lecture	77
1.2	Limitation of lectures	77
1.3	The effective lecturer	78
2	Before the course	78
2.1	Preparation	78
2.2	Using technology effectively	83
2.2.1	PowerPoint	83
2.2.2	Laser or mouse pointers	86
2.2.3	Audience response systems	86
3	During the course	87
3.1	Preparing the environment	87
3.2	Positioning yourself	87
3.3	Body language and eye contact	88
3.4	Voice	88
3.5	Notes	89
3.6	Using humor	90
3.7	Managing special circumstances	90
3.7.1	Laptop/desktop doesn't work	90
3.7.2	Projector doesn't work	91
3.7.3	Different cultures and languages	91
3.7.4	Handling hostility	92
3.7.5	Cutting the lecture short	93
3.7.6	Managing interactive debates	93
3.7.7	Role as a session moderator	93
4	After the course	94
5	Conclusion	94
6	Anecdote	95
7	Bibliography	96

6 How to give a lecture

1 Introduction

A great lecture rarely comes about by chance. It is not uncommon when beginning to develop an outline of a lecture to find yourself trying to cram in everything you know about a topic—citing references galore, showcasing your most exciting cases, and then squeezing all this into a 20-minute lecture. For those who are reasonably proficient in the use of PowerPoint, you then proceed to fill every slide with as much information as you can, and produce a 70-slide lecture, often with fancy backgrounds, font style, and colors. You might polish this off with moving graphics or even sound effects, in an attempt to use everything the program can provide. Disappointment prevails when participants whisper, complain that you overran, or give the perfunctory clap... or sigh of relief. More importantly perhaps, the opportunity to contribute to learning is lost.

This chapter is designed to help you give an effective lecture on an AO course. The educational principles underpinning the suggestions are integrated into the main text so that you will understand the theory of what you are doing. Much of the research into the effectiveness of lectures was conducted some years ago, which perhaps reflects the focus of educational research today. By the end of this chapter the reader will be able to:

- Prepare a lecture to be delivered at an AO course.
- Select a suitable method of delivery.
- Use technology effectively.
- Consider how to manage special circumstances, eg, overrunning your allotted time, different cultures, hostility, and technical problems.

1.1 Aim of the lecture

- Provide useful and clinically applicable information.
- Introduce concepts or ideas which will be developed through discussion and practical exercises (practicals).
- Include information which is up-to-date and evidence-based.
- Make sure course participants have the same baseline knowledge.
- Motivate course participants to want to learn more.

1.2 Limitation of lectures

A lecture is a valuable learning tool when linked with sufficient opportunities for course participants to reflect, process, and apply what they have learned from a lecture, for example, discussions and practical skills exercises. Smeltzer et al [1] showed that learners listen more closely if they know there is going to be a discussion on what the lecturer is saying.

- ■ **After the introduction, remind the audience that they will require the knowledge you are about to deliver for a practical exercise or case discussion, for example, preoperative planning steps, dynamic compression plating for stable fixation, or decision-making in a polytrauma patient.**

However, despite all the characteristics of an effective presentation, mounting evidence shows that the traditional teacher-dominated lecture is inadequate for facilitating higher-level learning and behavioral change [2–4].

- ■ **Bligh [5] combines decades of experience as a faculty developer and in-depth knowledge of the research literature, to draw the conclusion that lectures should be used to teach information. They should not be relied upon to promote thought, change attitudes, or develop behavioral skills.**

Lectures, however, remain an important component of AO courses so you will need to develop the appropriate skills and characteristics of a good lecturer.

1.3 The effective lecturer

- Demonstrates enthusiasm for the subject.
- Knows the content well and has the appropriate level of clinical expertise.
- Uses the skills and procedures referred to in the lecture.
- Delivers a clear message including only what the course participants really need to know.
- Engages the course participants and uses appropriate body language.
- Keeps to time.
- Is available at break times to get to know course participants and answer questions.
- Liaises with faculty doing link discussions and practicals as well as other relevant lecturers, during the precourse.

Like most social skills, learning to teach involves using the talents you have, rather than trying to be what you are not. The skills and personality traits required by different teaching methods make conflicting demands. The extrovert lecturer who commands the attention of the course participants by occasional showmanship may have difficulty finding the sensitivity and responsiveness required to facilitate a discussion.

2 Before the course

2.1 Preparation

The eight recommended sequence of steps you should take after receiving an invitation to deliver a lecture:

1. Identify your message.
2. Set learning outcomes.
3. Develop the conclusion.
4. Build the main body.
5. Establish a catchy introduction.
6. Produce visual aids.
7. Edit content and number of slides.
8. Rehearse, rehearse, rehearse.

These steps are relevant whether you are a novice or experienced lecturer.

Step 1: Identify your message

What do you want course participants to do, be, feel, or know when they leave your lecture? If you answer this question in one sentence, make sure it is visible whenever you are working on the lecture and you will find it helps you to stay focused on the major issues.

Step 2: Set learning outcomes

Outcomes should be based on the major issues to be addressed. Are your course participants beginners, do they have some experience, or are they experts? Tailor the lecture content to the level of competence of the participants. If there is a related practical you should refer to it, but not in detail. The lecture should not be a vehicle for you to show off your expertise. What the course participants really need is to understand the overall message and put it to use.

Step 3: Develop the conclusion

The conclusion is the last part of your lecture to be heard and the part the course participants are most likely to remember. Many successful lawyers exploit this. They write their final argument first, and then line up the evidence that best supports the facts they must prove to the jury.

Hovland et al [6] demonstrated that learners are more likely to accept a conclusion if the lecturer states it at the end of an argument. If the same evidence is presented with the conclusion left unstated, learners were unable to draw an inference from the lecture.

The conclusion should take about 5–10% of the overall presentation time (equivalent to 1–2 concluding slides). You can use it as the opportunity to summarize the 3–5 salient points. It is important to signal that you are nearing the end of your lecture. As soon as course participants hear “In conclusion...” or “Finally, let me repeat my main points...” they will listen more carefully. New issues should not be introduced at this point. If you are short of time never cut the conclusion; shorten the body of the lecture.

Step 4: Build the main body

Russell et al [7] have shown that students learn more when information density is not too high. Miller [8] says that the average number of items of knowledge that a person can hold in their short-term memory is 7 ± 2 . Once you have decided what you want to cover, it is tempting to squeeze too much into the session. If the content does not contribute to your main message, leave it out. Use the minimum number of facts, views, and opinions to convey it.

■ ■ **Information overload is different from repeating the message. You should exclude details which will be delivered in a following practical exercise video.**

When dealing with data and figures: pick the first, largest, newest, latest, or smallest. If participants need more information, provide it in a handout afterwards. It is your job to take course participants behind the numbers and explain what they mean. Stick to the KISS principle (keep it short and simple). Use short words and short sentences. If participants have to struggle to understand any words or concepts, they are likely to give up (**Fig 6-1, Fig 6-2**).

Use case illustrations which are common and relevant. It is worth collecting good slides of standard cases, which can be notoriously difficult to locate when you need them. Rare cases should be kept for experts or to illustrate a particular point. All cases should be made anonymous. Course participants appreciate and learn from a lecturer’s openness about failures as well as successes.

Nelson [9] found that—compared to hypothetical examples—personal examples improved learners’ attitudes toward the lecturer, increased their confidence, and increased their recall of the lecture material.

Throughout your lecture you should include “pep-me-ups”. These can be anecdotes, interesting visuals, or bits of humor.

POLYTRAUMA

Fat Embolism Syndrome

Gurd's Major Criteria

- axillary or subconjunctival petechia
 - occurs transiently (4-6 hours) in 50-60 % of the cases
- hypoxemia (PaO₂, <60 mmHg; FIO₂, <= 0.4)
- CNS depression disproportionate to hypoxemia
- pulmonary edema

Gurd's Minor Criteria

- tachycardia (more than 110 beats per minute)
- pyrexia (temperature higher than 38.5°)
- emboli present in retina on fundoscopic examination
- fat present in urine
- fat globules present in sputum
- sudden unexplainable drop in hematocrit/platelet - increasing ESR

Miscellaneous

- occurs within 72 hours of skeletal trauma
- shortness of breath
- altered mental status
- occasional long tract signs and posturing
- urinary incontinence

1 major criteria
+
at least 4 minor criteriae
High index of suspicion

Gurd AR, Wilson RI: The fat embolism syndrome. J Bone Joint Surg 1974 Aug;56B(3):408-16.

Fig 6-1 Example of a busy slide with inappropriate graphics crammed together.

Step 5: Establish a catchy introduction

Your introduction is not the time to bore everyone with details of your curriculum vitae. You don't need to show irrelevant slides of your hospital or to thank anyone for asking you to lecture. Start straightaway with your opening sentence, not a tired old beginning like "Today, I'm going to talk about...".

This is your best chance to grab the course participants' attention. Within the first 2-4 minutes they will make up their mind about whether to listen to you. So, it is important to start with something memorable or attention grabbing: a short and interesting quote or an amazing slide (**Fig 6-3**). During the rest of the introduction, it is important to identify what will be covered, how it links with the rest of the course and why it will be of interest.

Fat Embolism Syndrome

Gurd's Major Criteria

- petechia
- hypoxemia
- CNS depression
- pulmonary edema

Gurd's Minor Criteria

- tachycardia
- pyrexia
- retinal emboli
- urinary fat
- sputum fat globules
- drop in HCT/platelet
- increasing ESR

Miscellaneous

- ≤ 72 hours of trauma
- tachypnoea
- altered mental status
- long tract signs and posturing
- urinary incontinence

1 major criteria
+
≥ 4 minor criteriae

High index of suspicion !

Gurd AR, Wilson RI: The fat embolism syndrome. JBJS 56B (1974)

Fig 6-2 Example of a neat slide handling a lot of information.

Step 6: Produce visual aids

Visual aids should be just that: visible and aids to your lecture. How many times have you heard a speaker using precious time to apologize for the clarity of a graphic? If the x-ray isn't clear don't show it, look for one in a textbook or download one from an Internet source.

Types of visual aids:

- Clinical photographs.
- X-rays.
- Line graphics.
- Bone models.
- Computer graphics.
- Video clips.
- Computer animations.

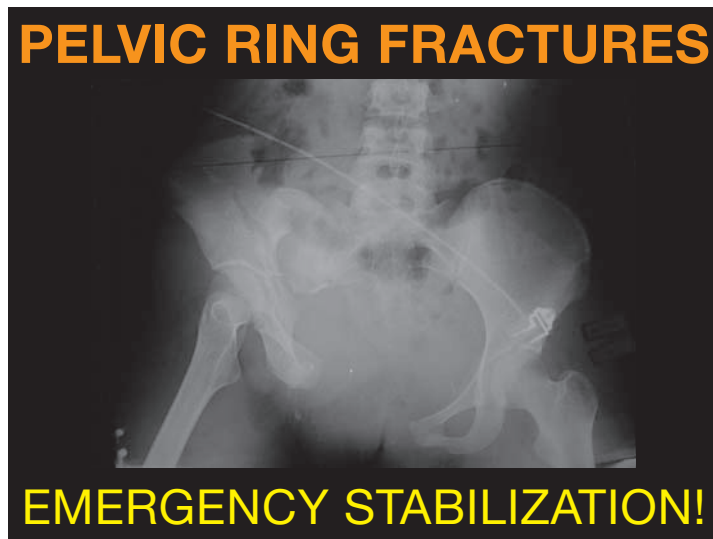


Fig 6-3 A catchy title slide which is self-explanatory—two different designs.

With the advent of complex computer programs, some untrained lecturers get carried away with the presentation of their slides or overhead transparencies. Sadly, course participants often leave such lectures impressed by the visual aids, but with no change in their understanding or opinion, and hence no learning. On the other hand, the digital revolution of the last decade has made quality clinical photography (**Table 6-1**) accessible to everyone [10].

The following principles should help you:

- One basic point per visual.
- Present figures as diagrams or graphs.
- Familiarize yourself with any equipment.
- Rehearse well with visual aids.
- No more than 15 slides for a 20-minute lecture.
- Show visual aids only when you are talking about them.
- Avoid using flowers, sunsets, or your children's photos to fill space.

Scanning and photographing pictures and x-rays	
■ Use digital cameras at high (XGA or 1024 × 768 pixels) or full (2048 × 1536 pixels) resolution; you can reduce them to 72 dpi later.	■ Taking shots off an x-ray viewer may appear sharp on small 2-inch camera screens, yet result in shake blur when viewed on a larger (14-inch) computer screen; use elbow or tripod support. Beware reflections on newer glossy digital film.
■ Output onto a computer or LCD projected screen is maximum 150 dpi; saving digital pictures at 300 dpi is useful if you are considering a future publication (print).	■ Taking shots off a TV (fluoroscope) screen may result in a dark band across due to the 50-Hz flicker; set camera on Shutter-priority with speed at 1/15 to avoid this, but shake blur may occur at this speed; alternatively, photograph the printout.
■ Use grayscale mode for x-rays and black-and-white graphics to save file size; also takes out blue-green tint from x-ray boxes.	■ For best exposure of x-rays, center the focusing circle on the bony metaphysis or cancellous bone before recomposing.
■ Scanning and photographing from glossy book pages may result in interference, Fresnel rings, or flare from overhead lighting (photocopy onto matt paper first); sometimes can be edited in Photoshop (Filter:Dust&scratches).	■ When taking clinical or operative pictures, align to the vertical or horizontal axis to help the viewer orientate.

Table 6-1 Tips for dealing with pictures.

If the feedback for your lecture is good, do consider donating your set of slides to the course chairman so future lecturers and course participants can benefit and your hard work will not be used on just one occasion.

Step 7: Edit content and number of slides

At this stage of the preparation you will probably have too much content. What can be cut? What does not contribute to the overall message? Consider again the course participants you will be lecturing to. Are all the examples and cases relevant to their practice? Remember, the lecture on the course is likely to take at least 25% longer than during rehearsal. What elements can be cut if you run short of time on the day?

Once your lecture has been prepared, put it aside and return to it later. You will spot mistakes, confusing

areas, and think of new ways of presenting. Remember, the greater your expertise, the more you need to structure and rehearse.

Step 8: Rehearse

Don't try to learn the script by heart. Memorizing will get in the way of your flow. You will find yourself searching your memory for words rather than concentrating on delivering your message effectively. Rehearsal should take place at the venue, with your visual aids and notes, in real time. There is sometimes a temptation to miss this step and to read your lecture through a few times. This is not enough. An alternative is rehearsing to yourself in a mirror to check eye contact and timing. Rehearsing with a spouse or colleague also helps. Effective preparation for your lecture more than makes up for any lack of expertise or experience. It will also calm your nerves.

2.2 Using technology effectively

2.2.1 PowerPoint

This is the most commonly used computer presentation program for lectures. It is easy to use and has powerful tools, but some lecturers try to use all of them, when few are really needed to be effective. You may refer to the manual or countless other publications on PowerPoint but this is some practical advice to start with.

Useful features in PowerPoint include:

- Standard color schemes and backgrounds.
- Customizable text, fonts, and sizes.
- Drawing tools and clip arts.
- Easy insertion of graphic files, charts and tables, and video clips.
- A wide variety of animation tools.
- Ability to insert single slides or a whole lecture from your library.
- Ability to save as PowerPoint Show (.pps) file.

Color schemes and background

Two basic schemes stand out in a presentation. First a white background, similar to using an overhead projector, with black text and diagrams, but is less effective when color graphics such as clinical pictures are added. X-rays alone stand out well.

Dark backgrounds work best: usually black or dark blue. Text will stand out if it is yellow, orange, or white. Avoid green and red as they do not project well. Remember that 10% of the male audience may have red/green color blindness. Graduated backgrounds should also be avoided due to poor contrast with text.

Text fonts and sizes

Text size should be 20–36 point for visibility. Titles can be as large as 60 point. Sans serif fonts, eg, Arial and Helvetica, which are easy to read, are best. Avoid using more than two font types per slide. You can make letters bold for extra clarity. Avoid fancy WordArt as it can take time to load.

Here are some rules for slide text:

- Restrict the number of words to six across and six lines down.
- Spell everything correctly (try using Tools:Spelling or F7).
- For lists, keep text inside a box; you can reposition them anywhere.
- Use indents and bullets only one level down.
- Start with an “action” word and avoid full sentences.
- Avoid punctuation marks, unless it is a quote.
- The alignment function will help you line up texts vertically and horizontally.

Drawing tools and clip arts

AutoShapes are useful in providing all manner of lines, basic shapes, block arrows, and flowcharts. You can re-size, rotate, and edit them. Lines can be used as curves or freehand. Closing allows them to be filled in color. You can Edit Points to outline, say, a bone on an x-ray and is best done by viewing the slide at 200–400% zoom.

Insertion of graphic files, charts, tables, and video clips

As you prepare your outline, the lecture can be improved with graphics. You can explain the complex shape of a subtalar joint by showing it rather than by describing it.

An acetabular fracture can be better described in a 3-D CT-scan reconstruction, especially when you can rotate it. Such techniques will depend on your computer skills and are not essential. A diagram from a book may be enough. Just ask yourself “Is it visible and does it aid?”

■ ■ Sources of medical graphics:

- **AO Image Collection PFxM, AO Teaching Support Kit, or other AO publications.**
- **Standard textbooks (difficulty with scanning glossy pages).**
- **Other donated lectures (acknowledge the contributor).**
- **CD-ROMs, web sources (www.primalpictures.com).**

Graphic files can seldom be inserted as they are taken and need to be processed. A drawing program such as Adobe Photoshop can be used to improve the image. You can change contrast and brightness, sharpen or crop, resize and change resolution. X-rays should be changed to grayscale to minimize file sizes and to maximize contrast. Similarly, line drawings or simple graphics with few colors can be saved in Index color mode to save space. You can insert graphics into PowerPoint as JPEG or TIFF files. Picture contrast, brightness, and cropping can also be done in PowerPoint itself (Picture:Toolbar). Experiment with size, but for computer presentation, a resolution of 72 dots per inch (dpi) is adequate. You may however wish to save them to your library at 300 dpi or higher if you are using it for a publication.

■ ■ Presenting graphics:

- **X-rays should take up a quarter of the screen to be viewed clearly.**
- **People scan from left to right, so position text to the left of graphics.**
- **When using annotations, you can group graphics with text (Draw:Group) so they appear together.**

Charts and tables presented in publications are rarely suitable for projection without simplification. You may want to reproduce them by making your own chart and table within PowerPoint or Microsoft Word. The most common mistake is to make them too cluttered by data. Remember that participants are seeing it for the first time and for a very short time. Be prepared to explain the chart or diagram.

Video clips can be effective in showing steps of surgery or a functional outcome. When you are taking a video from a digital camera, keep the clip short. Lighting is also important especially with skin color, so set the camera to the right illumination, for example, fluorescent or incandescent light. Before inserting them into a slide, edit them to less than 20 seconds and save them in the same folder as your lecture file. Then you will remember where you put them and will transfer with the file when you save them to a CD-ROM or a memory stick.

■ ■ Tips for including video clips:

- **PowerPoint works best with AVI files.**
- **You can use commercially available programs to prepare .avi files (www.radgametools.com).**
- **Orientate the frame horizontally for video; it cannot be rotated.**
- **Short clips are best, especially to show steps of an operation.**
- **Inserted clips need to be linked to a file; transferring the PowerPoint file changes the link; clicking on the movie will prompt you to re-link it by finding the attached file.**
- **Handling video codes may differ with operating systems; download both the file and the video clip to the host computer; don't run from a data CD-ROM.**

Animation

Animation effects can be overused and mask your message. However, it can be effective when developing the flow of an idea. With transparencies, the carousel must be advanced to go to the next page. In PowerPoint, you can use animation to show related images or text without changing slides until the page fills up. "Telling the story" becomes easier. You also control the pace that participants receive information and hold their attention and anticipation.

Rules for animation include:

- Limit Effects of animation and slide transition to two or less.
- Wipe Right or Wipe Down works well for text animation.
- Wipe directions must follow where an arrow points.
- Dissolve and Strips Right-Down are useful for graphics and x-rays.
- Text lines can be used as cue pointers.
- Intersperse text animation with graphics by grouping text with graphics.
- Flowcharts work very well with animation by following the rules above.
- Use By Mouse Click for starting animation for better control.
- Use Play settings to animate movie clips.
- Slide transitions are done in the Slide Sorter view; No Transition is best.

■ ■ Be careful:

- **Automatic animations can be timed, but may disrupt flow in real time.**
- **Avoid using sounds during animations; they are irritating.**
- **Avoid selecting Random Effects for animations and Random Transitions for changing slides; they are very distracting.**
- **Not rehearsing with animations is dangerous; animation order changes when you add or delete text or graphics, and when you Ungroup and ReGroup graphics in the Draw menu.**

Inserting slides from files

This is a powerful option to select single, a group of, or every slide from an existing PowerPoint file. You can do this in the Slide or SlideSorter views. The inserted slides will adopt the background of your current lecture. You may also copy and paste slides from the donor's SlideSorter view.

You should be aware that:

- Text fonts and size in inserted slides may change and reposition themselves.
- Fonts from another computer may not be found in the one you are using.
- Special characters may also change or be substituted.
- Text, line, and fill colors need to be changed to conform to the existing presentation.
- Contents may not be suitable or are repeated in the new lecture.
- Sometimes it is easier to copy and paste selected text or graphics between opened files than to import whole slides.
- If you use someone else's slide, give them credit.

Saving your presentation

By default, PowerPoint will save your lecture as presentation (.ppt file). Try saving it as PowerPoint Show (.pps file) and place it on the desktop. When you double-click on it, your full-screen SlideShow will open without going through PowerPoint start-up. In fact, you don't even need the PowerPoint program to be installed on the host computer.

2.2.2 Laser or mouse pointers

Pointers should be used judiciously to target points on graphics, x-rays, or charts and draw the attention of the participants. They should not be used to point at text like the bouncing "karaoke" ball. If you have a hand tremor try resting your hand on the lectern.

A mouse arrow pointer in PowerPoint is another way of showing the participants what you want them to look at. If you click the left button the slide will advance; if you click the right button, an options menu will pop up and often disrupt your flow. It will only be useful when you want to skip to a specific slide. It is simplest to advance slides using the down arrow or PgDn key on the keyboard and move the mouse arrow as a pointer.

2.2.3 Audience response systems

Engaging a larger audience to interact and/or vote on case study options can be done in a number of simple cost-effective ways, such as a show of hands, or holding up red or green cards distributed with precourse materials. If resources allow, however, an audience response system (ARS) using touch pads is an effective method for maximizing interaction in a large audience setting (see 1 AO education—introduction).

3 During the course

Many good lecturers have failed to live up to their own expectations on the day. The course participants were perhaps not as receptive as expected after lunch, but maybe the lecturer could have used simple techniques to achieve success. The following tips will help you to deliver in 20 minutes, what you may have spent weeks or months preparing.

3.1 Preparing the environment

By checking the venue before the lecture is scheduled, you can sort out almost any problem, from faulty equipment to construction work outside. Trust nobody but yourself to check any equipment you might need. Check and double-check it. Make a contingency plan in case it fails at the last minute.

Today, many use computer presentations. If you do, do you know how to connect the video cable to the VGA (video graphics array) port of a laptop? Do you know what keystrokes are needed to interface the computer with the LCD (liquid crystal displays)? It is essential that technical expertise is available on the course if you do not have it yourself, so seek out the technician.

Be careful if you have prepared a CD-ROM or memory stick for your lecture. Keep the lecture file in a named folder. You must check it before uploading. Always keep the original with you as backup. Video clips can be a particular problem.

Room lighting should be kept bright to maintain course participants' attention. If this proves difficult to view the screen, ask for technical support or consider removing light bulbs at the front of the room near the screen. It is worth checking the seating layout to see whether any changes will help participants see better.

3.2 Positioning yourself

If possible standing to your left of the screen makes it comfortable for course participants to read the slide and turn their eyes to you. It is important to stand up, allowing you to breathe more easily, to project your voice, and to maintain attention. It's all right to walk about the room, as long as your movements are purposeful. Control pointless wandering and rocking while speaking.

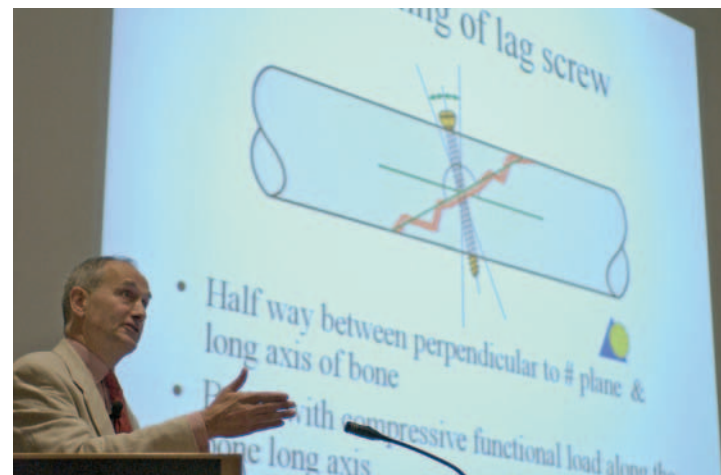


Fig 6-4 Communicate with your whole being.

3.3 Body language and eye contact

The best lecturers communicate with their whole being (**Fig 6-4**). They are animated and exciting to watch. However, many people are too inhibited to be able to use themselves deliberately as a visual aid. The role of body language in communication has increased in profile during the 1990s, although there are differing views about the significance of this nonverbal communication.

Albert Mehrabian, professor of psychology at the University of California, has calculated that only about 7% of understanding comes from what is actually said, 38% coming from the tone of voice, and 55% from nonverbal cues [11].

Certainly, if you are able to read other people's body language and use your own, you can establish rapport more quickly and effectively with others. Conversely, if you allow your body language to leak messages about some of your emotions, for example, disgust, fear, or irritation, such rapport becomes difficult.

Body posture is important, as it signals attention and respect to the group. In Western cultures this means leaning the upper body towards the group, showing an engaged body posture. By keeping your chin up, you will be able to maintain good eye contact and indicate confidence and interest. Coats et al [12] have shown that eye contact is important in establishing rapport with learners. Poor eye contact can give the impression of anxiety, incompetence, lack of sincerity, lack of credibility, and it prevents you from eliciting feedback from course participants.

However, in certain cultures, for example, Asian, locking eyes may cause the recipient to avert their gaze. Sweeping across the room, with short stops at individuals may be less intimidating. One cardinal rule is to avoid speaking without eye contact.

■ ■ Generating interactivity:

Buzz groups are groups of 2–6 participants who discuss issues or problems for short periods within a lecture. Such interactivity can have a significant impact on learning.

Several times after significant points were made in a lecture, Hollingsworth [13] instructed learners to discuss for 2 minutes what they thought was most important. Compared with a control group, these learners listened more attentively and—although their advantage was insignificant on a delayed test—they scored significantly higher on an immediate posttest.

3.4 Voice

It is through voice and language that you transmit your message, so speak more slowly than usual to the back of the room. Practice speaking into a tape recorder and listen to yourself. Sazar et al [14] discovered that profanities had a negative effect on the acquisition of content and cooperation during the lecture.

■ ■ Beware of:

- **Speech slurry—“ums” and “ers” get in the way; eventually people will become so distracted, they start to count these useless fillers.**
- **Filler words are a problem—three favorite fillers are “generally speaking”, “actual”, and “basically”; you may have other words you slip in when you’re not thinking.**
- **Any bad language, expletive or discriminatory remarks—if in doubt, leave it out.**
- **Repetition, which is the mother of retention—make sure any repetition covers important points.**
- **Dropping your voice at the end of a sentence—this becomes difficult to listen to, and content is lost.**
- **Slurred or mumbled words, which will eventually irritate, as course participants will have to strain to understand you.**
- **Failure to pause long enough between ideas.**

Listeners need time to reflect on what they have heard. This is particularly important if you are addressing an audience whose first language is not the one you are speaking. Sometimes, it may even be necessary to leave out difficult concepts for discussions. Periods of silence or prolonged pauses are useful to regain course participants’ attention. It also gives them time to absorb an important point. Such silences can be as long as 5–6 seconds, without feeling uncomfortable. Morgan et al [15] confirm that pauses at the end of sentences promote the “thinking time” so crucial for understanding.

Pace of presentation—ie, how quickly or slowly you speak—makes a difference as well. Geller et al [16] manipulated lecture speeds and used an ARS to provide feedback about when a lecturer was going too fast or too slow. Learners hardly ever indicated that the lecturer was going too slow.

3.5 Notes

If notes help you feel more confident and stay focused, prepare them carefully and use them with skill.

■ ■ Some tips on preparing notes:

- **Using index cards makes it easier to rearrange.**
- **Only put in keywords to prompt you.**
- **Write large text so you can see in dim lighting.**
- **Punch a hole in a corner and tie with a string or clip in case you drop the pile.**
- **Keywords on the slide itself can also substitute for cards.**

Notes can be particularly helpful if the language of your lecture is not your first. However, when you read from a script, it is always frustrating for course participants. We can read at approximately 500 words a minute, whereas we can only speak at around 100. By reading from a script you lose spontaneity and interaction. Your head will be bowed, making eye contact impossible, voice projection difficult, and it is easy to lose your place in the notes. Meanwhile the course participants have drifted off. Coats et al [12] have shown that lecturers are more effective when they speak around a few points than when a lecture is read.

3.6 Using humor

People like laughing. People tend to like people who make them laugh, and if they like you, they will usually listen more carefully to what you say. However, a positive and enthusiastic approach is much more valuable than being able to tell jokes confidently. Amusing real life stories can relieve tension and help people learn. Avoid joking about sex, race, language, or religion. One insensitive or irrelevant remark can lose the course participants. To open the lecture with a joke takes skill and is a risk. Unless you are confident that you will be able to handle the situation if it falls flat, don't take that risk.

■ ■ Would you feel comfortable telling the joke or story...

...to your mother or grandmother?

...to a religious leader?

...if it were to be broadcast to the whole country?

...to everyone in the coffee room at lunchtime?

Bryant et al [17] reported that humor enhanced student's approval of male lecturers but had the opposite effect with female lecturers, except when the humor was at someone else's expense. Humor appears to make no difference to recall immediately after the lecture, but if it is relevant and related to the point being explained, it improves recall later [18].

3.7 Managing special circumstances

3.7.1 Laptop/desktop does not work

If your own laptop refuses to cooperate, it may be:

- The power adapter is not plugged in and you have run out of battery.
- You ejected a CD-ROM, memory stick, or PC card during a read process.
- If your screen went blank, try pressing Fn and F7 (or F5) a few times to change output to the screen or projector (wait a while for the effect).

Whatever the difficulty, do not force the participants to share your frustrations. Ask them to work with the person next to them on a problem or exercise related to your lecture. Perhaps they could pose questions for themselves and then seek answers from the lecture. Otherwise, they could discuss their own clinical experience of your topic. The moderator could also help by asking questions.

King [19] reported that learners posing questions to themselves at the beginning of a lecture learned and remembered more in the long run than learners who took their own notes or who were given handouts.

Meanwhile you can attempt to rectify the technical problem. Have a contingency plan to cope if your visual aids are irretrievable and the technical staff have to take over: another good reason to have prepared notes. Having a standby computer with your lecture loaded is best. Transparencies for overhead projection can also be helpful but seldom necessary.

To minimize this risk, you should:

- Bring your power adapter even if your battery is fully charged.
- Power-up your computer a few minutes before you are to speak.
- Load and check the lecture file—and then leave everything on.
- Close all unnecessary screen windows and programs.
- Have a backup computer, CD-ROM, diskette, or memory stick.

3.7.2 Projector doesn't work

The problem could be with the projector or your computer. Compatibility and sync problems are rarer nowadays but you should know what to do, especially if you are using your own computer. Such preparation should take place long before the lecture is due to start, possibly first thing in the morning, during breaks, or at lunch.

Some projectors may go on “standby” mode and will need a minute to warm up when you want to use them. Look for the blinking green light on top of the projector. Warn your technician to turn on the machine if you don't have the controls. If you see the projector brand name on the screen after you connect, press Fn and F7 (or F5) key three times to switch display screens. You should then be able to see your own laptop screen. If not, press the “source” button on the projector to “refresh” from “video” back to “computer”.

3.7.3 Different cultures and languages

AO is a worldwide organization with all the benefits of working with clinicians from different cultures and countries. However, it can be difficult to be sensitive to the differences between us.

- Always check with the local organizer about the proficiency of the participants in the language in which you will be speaking, usually English. Be aware that some cultures are unwilling to confess to ignorance. Local organizers will always estimate the ability of the audience to understand English.
- Check for any possible differences in clinical practice, eg, availability of C-arm.
- Try to find out more about the host country before you leave or upon arrival.
- Reduce your speaking speed, so your lecture will take longer, and thus require fewer slides; clever local course chairmen give a longer time slot for each lecture.
- Strictly avoid colloquialisms, culture-specific stories, and jokes which will not make sense to the participants.
- More time will be required to understand messages from slides; consider providing handouts of the outline before your lecture.
- Illustrations in the form of graphics, animations, clinical photographs, or x-rays will reinforce understanding.
- If a translator is provided take time out before your presentation to discuss it with him. Translators may be unfamiliar with some medical terms, and the best translators will always ask you to go through your presentation in advance with them, so that difficulties can be avoided.

- Be aware that there are possible cultural taboos, eg, showing of parts of the anatomy in a clinical slide, misinterpretation of a jocular slide showing religious or political content; if in doubt, leave it out.
- You may be showing techniques and technology unfamiliar to the course participants; balance the way you do things and propose an alternative where appropriate.
- Always be available during the whole course as course participants may be unwilling to ask questions openly during the lecture.
- Beware of targeting questions to senior members of the course who may “lose face” in front of their subordinates if they are unable to answer correctly.
- Practicals and discussions are key activities to assess the practice of course participants who may have developed novel ways for managing certain conditions despite lack of resources.
- Show humility and give credit to the local organizers or senior (often older) course participants who may be part of a hierarchical society.
- As foreign faculty you are often held in high esteem and have the responsibility for influencing clinical practice.

3.7.4 Handling hostility

Many lecturers dread the prospect of a “difficult course participant”. In reality, of course, the vast majority of learners want you to succeed as they want to learn from you. However, there may be times when people disagree with our message. Whenever people disagree, it is difficult to see the other person’s point of view. As faculty, it is essential that you try to understand and to minimize potential damage.

Carl Rogers [20] describes “unconditional positive regard”. He argued that this quality, the ability to accept another person without judgment, is essential for learning to proceed and change to occur. So, in addition to teaching skills, faculty should not forget to bring sensitivity and respect to the courses and their lectures.

When dealing with difficult course participants, your goals are to:

- Get the difficult person on board.
- Minimize negative impact on any other course participants.
- Minimize time overrun.

■ ■ Tips:

- **Always face a difficult situation straight away.**
- **Never embarrass anyone in front of the group.**
- **Never show you are angry during a lecture.**
- **Concentrate on the audience not yourself.**
- **Start your clarification from a point you both agree with.**

Very occasionally you may be faced with a hostile course participant. Sometimes they appear uninformed and apathetic. For these individuals it is essential to grab their attention early on. Information needs to be carefully explained, given a little at a time, repeated with variations and with plenty of examples. Stress your own expertise and use lots of successful role models and examples.

Even though there may be faculty and course participants who are experts in your field, they are NOT an

expert in what you are going to talk about. We frequently attend lectures in our area of expertise, but seldom come away from one having learned nothing at all. We always learn a new tip or an interesting case. We also discover new ways of explaining difficult areas, which we can later use with other participants.

3.7.5 Cutting the lecture short

Preferably you will finish before the end of your time slot, rather than running overtime when course participants will start to fidget and wonder whether their whole day will then run late. No matter how tempting, it is arrogant to assume that what you have to say takes priority. If you run late then tight schedules fall into disarray. Anyway, you should remember that the average student's attention span is between 10 and 20 minutes [21].

Plan your timings on the premise that your lecture on the day will take 25–50% longer than your rehearsal to allow time for entertaining questions from course participants and for the inevitable slippage in large groups [22]. Be prepared to make cuts if your time is short, but do not cut the introduction or conclusion. An easy way to accomplish this is to color code your lecture into three sections:

- Must know.
- Should know.
- Could know.

3.7.6 Managing interactive debates

Interactive debates are becoming increasingly common. Many topics work well as a debate, for example, intramedullary nailing versus minimally invasive plating for diaphyseal fractures. You should liaise early with the course chairman, moderator, and any other faculty

involved. Preparing your arguments in advance is important. Sometimes it is tempting to make outrageous contributions with the aim of influencing course participants to support your view, or to make them laugh. On the other hand, with poor preparation the debater's arguments may be weak or unconvincing. Participants are looking for the contest in arguments. However, the educational strength of this method lies with a balanced view and transparent thought processes which help course participants to develop their own decision-making skills and hone their judgment.

3.7.7 Role as a session moderator

You may be invited to be a session moderator in addition to delivering a lecture. In the past, a moderator's job was to introduce the speaker and to keep the session to time. Good moderators have used their own initiatives to liven up the session by posing questions and encouraging audience response, but this is often erratic and inconsistent.

The role of a session moderator can help enhance the learning process. They are usually experienced senior faculty who have a sound overview of the area being covered. They should:

- Coordinate with speakers long beforehand to ensure no duplication of content.
- Work with speakers to present appropriate case studies.
- Prepare ARS case studies to involve audience participation and engage the speakers.
- Be decisive in cutting short lectures which exceed the time limit.
- Be able to sum up the key learning points of that session.

4 After the course

Most AO courses adopt a form of course evaluation. Course participants may be asked to assess your lecture according to set criteria. Such criteria include organization, evidence base, presentation style, etc. Such evaluation will probably tell you little that you did not know already, but it is useful for chairmen in assessing the value of including a particular lecture in a future course.

Self-evaluation is probably the most useful way to improve your own performance. Shortly after your presentation, write down the three most successful elements of the lecture. Next, write down the three things you would change, if you were asked to repeat the lecture.

■ ■ **Feedback is the fuel that drives improved performance.**

5 Conclusion

The essence of a good lecture is not so much in the content but in the preparation and attention to detail. You must know what it takes to deliver a good lecture, to provide just the right amount and level of content, to engage course participants, to summarize the key points, and to elicit feedback to improve the next lecture.

Remember these key points when you prepare your lecture:

- What is the message participants need to remember from you?
- Effective lectures need meticulous preparation.
- Focus on introduction and conclusion.
- No more than five major points.
- Course participants cannot learn everything in a lecture.
- Brutal editing improves flow and ensures good time keeping.
- Don't allow visual aids to drive your lecture.

6 Anecdote



As Jacob assumed a more senior role on course faculty, his anxiety increased before and during his lectures. Despite trying relaxation techniques, avoiding caffeine, eating bananas, and even resorting to beta-blockers, he found the symptoms he experienced more and more difficult to quell. His hands shook, his voice was not his own, his mouth dried, and his pulse raced.

Just before, what he had decided was to be, his final course, he heard a conversation between two more junior faculty members.

"I get really nervous before these courses."

"Why?"

"In case something goes wrong."

"What like?"

"Well...I don't know...my mind goes blank or someone asks me a question I don't know the answer to..."

"Why would that be so terrible?"

"Well...I'd look really stupid."

"Only if you behaved stupidly."

"It's not that simple."

"Oh, I think it is. Participants are here to learn something from you. They've not come to see how clever, knowledgeable, and skilled you are. In fact they're not that interested in you. They need something which will help them care for patients better."

Overhearing that conversation helped Jacob refocus on what mattered. His job was to prepare as well as he could, so that learners would learn what they needed to. By shifting the focus from himself onto course participants, not only did he do a better job, but his anxiety diminished to easily controllable levels.

Lisa Hadfield-Law

7 Bibliography

1. **Smeltzer L, Watson K** (1983) *Improving listening skills used in business*: American Business Communication Association.
2. **Cotton J** (1995) *The Theory of Learning Strategies: an introduction*. Philadelphia: Kogan Page.
3. **Davis D, Evans M, Jadad A, et al** (2003) The case for knowledge translation: shortening the journey from evidence to effect. *BMJ*; 327(7405):33–35.
4. **Grimshaw JM, Shirran L, Thomas R, et al** (2001) Changing provider behavior: an overview of systematic reviews of interventions. *Med Care*; 39(8):II2–45.
5. **Bligh DA** (2000) *What's the use of lectures?* San Francisco: Jossey-Bass Publishers.
6. **Hovland CI, Mandell W** (1952) An experimental comparison of conclusion-drawing by the communicator and by the audience. *J Abnorm Psychol*; 47(3):581–588.
7. **Russell IJ, Hendricson WD, Herbert RJ** (1984) Effects of lecture information density on medical student achievement. *J Med Educ*; 59(11):881–889.
8. **Miller G** (1967) *The Psychology of Communication*. New York: Penguin.
9. **Nelson G** (1992) The relationship between the use of personal, cultural examples in international teaching assistants' lectures and uncertainty reduction, student attitude, student recall, and ethnocentrism. *International Journal of Intercultural Relations*; 16(1):33–52.
10. **Niamtu J** (2004) Image is everything: pearls and pitfalls of digital photography and PowerPoint presentations for the cosmetic surgeon. *Dermatol Surg*; 30(1):81–91.
11. **Mehrabian A** (1972) *Non-Verbal Communication*. Chicago: Aldine Atherton.
12. **Coats W, Smidchens U** (1966) Audience recall as a function on speaker dynamism. *Journal of Educational Psychology*; 57(4):189–191.
13. **Hollingsworth P** (1995) Enhancing listening retention: the two-minute discussion. *College Student Journal*; 29(1):116–117.
14. **Sazar L, Kassinove H** (1991) Effects of counselor's profanity and subject's religiosity on content acquisition of a counseling lecture and behavioural compliance. *Psychological Reports*; 69(3):1059–1070.
15. **Morgan S, Puglisi J** (1982) Enhancing memory for lecture sentences: a depth perspective. *Pathological Reports*; 51(2):675–678.
16. **Geller E, Chaffee J, Farris J** (1975) Research in modifying lecturer behaviour with continuous student feedback. *Educational Technology*; 15(12):31–35.
17. **Bryant J, Comiski P, Cime J, et al** (1980) The relationship between college teachers use of humor in the class room and student's evaluation of their teachers. *Journal of Educational Psychology*; 72(4):511–519.
18. **Javidi M, Long L** (1989) Teacher's use of humor, self disclosure, and narrative activity as a function of experience. *Communication Research Reports*; 6(1):47–52.
19. **King A** (1992) Facilitating elaborative learning through guided student generated questioning. *Educational Psychologist*; 27(1):111–126.
20. **Rogers CR** (1951) *Client-Centered Counseling*. Boston: Houghton-Mifflin.
21. **Penner JG** (1984) *Why Many College Teachers Cannot Lecture*. Springfield: Thomas.
22. **Christensen N** (1988) "Nuts and Bolts of Running a Lecture Course." Deneff AL, Goodwin CD, McCrate ES (eds). *The Academic Handbook*. Durham: Duke University Press.