3 Choosing and Using Visual Aids

▶ Advantages of visual aids

Nowadays, audiences are used to seeing visual material during almost any sort of talk or presentation. Listening isn't easy and it helps a great deal if you have something to look at; in any case, human beings tend to remember what they *see* more readily than what they *hear*, and so audiences are grateful for the reinforcement of a good visual aid. People also like looking at pictures – it makes a pleasant alternative to listening – and a change in the way in which information is presented adds variety and interest to the occasion and so helps them to concentrate.

For all these reasons, audiences want visual aids and most speakers provide them. There are, no doubt, some highly experienced, witty and knowledgeable people who can hold an audience's attention by themselves, but it's probably unwise to assume that either we or you are of their number.

If audiences are helped by visual aids, so are speakers themselves. Visual material is prepared in advance, and if it's well-designed and thoroughly checked, it becomes an area of the presentation that the speaker doesn't have to worry about, assuming, of course, that the equipment is available and functioning properly. It also deflects attention from the speaker. This can be bad as well as good: it's possible to use so many visual aids that the audience feels that they are seeing a film or video rather than meeting and listening to a human being. As films and videos can be transported easily from one place to another, they may also feel that it was rather a waste of their time bothering to come to the venue on a particular day at a prescribed time, when they could have watched the whole thing at home at their leisure. On the other hand, many speakers like to feel that occasionally during the talk they are not the main focus of the audience's attention; this is often true at the beginning, and is a good reason for having a visual aid containing the subject and the speaker's name to show as the presentation starts. It may also be helpful in allowing the audience to see how the speaker's name is spelt.

There are other advantages, from the speaker's point of view, in using visual aids. More detail can be shown than could possibly be explained in words; photographs will clarify aspects of the subject which couldn't be shown in any other way, and, if a data projector is used, movement and sound can be included. The key message will be reinforced, and this is an advantage for the speaker just as much as for the audience.

During your course, you are likely to be using the two main forms of visual aid equipment, the overhead projector and the data projector, and we'll look at both later in this chapter, together with some of the other forms of visual information that you might need to use, such as handouts and demonstrations. Incidentally, you may hear people refer to a presentation using computer-generated visual material and a data projector as a 'PowerPoint presentation', even if the computer package they're using isn't Microsoft and so isn't PowerPoint. It's just become the general term, in the same way as people call a vacuum cleaner a 'hoover' even if it's some other make. However, before we get into the details of the equipment you're going to use, we need to look at when and where you might use visual aids of any sort, and what you need to remember in preparing them.

Inappropriate visual aids

Are there any times when visual aids are not a good idea? We've mentioned the problem of too many, so that the speaker and the message are overwhelmed by the visual material. Poor quality visuals are distracting and let down the whole occasion: people are used to high-quality – broadcast quality – visual material and are disappointed if they are offered anything less. This is especially true of visual aids which are so unclear that they fail to convey any message at all. If photographs are under or overexposed, colours look indistinct or the print is too small (see p. 37), the visual aid will fail to make the right impact and will leave the audience wishing that the speaker had been more aware of their needs. Irrelevant visuals are even worse. Occasionally, speakers feel that they can 'cheer up' a difficult or potentially boring subject by showing pictures which are pleasant to look at but not in any way relevant to the message. At worst, these can even be cartoons. This is clearly unprofessional and profoundly irritating to an audience that has taken time and trouble to come to hear a serious subject discussed.

As visual aids are so important, there's sometimes a feeling amongst inexperienced presenters that every point made has to be shown on the screen. This can result not only in too many, but also in unnecessary and rather patronising visual aids: a real-life example is of a group of management students who discussed the results of a questionnaire they'd carried out. 'About a quarter of people said yes', they explained, 'and about three-quarters said no'. This was clear enough, but on the screen appeared a pie chart, with

two segments, showing one-quarter and three-quarters in different colours, with a key underneath. The intention was a good one, but there's no need for a visual aid if the point has already been made and understood.

When to use a visual aid

The decision about if and when to use a visual aid depends to a certain extent on the occasion and the constraints imposed by the situation. If you're reading a seminar paper, for instance, you're likely to be sitting at a table surrounded by the group, and it may be quite difficult to leave your place and move to an overhead projector; there's also the probability that everyone won't be able to see the screen easily: people to your right and left will have to move their chairs back and round in order to see. You need to decide whether all this movement is worthwhile. You may feel that it is, in which case you should make sure in advance that the equipment is set up and the chairs are placed so that there's the minimum disruption. If you have several visual aids to show, you might want to group them, if possible, so that the interruption happens only once. You may decide that a handout, with a copy for each person, is much easier to use than a more formal visual aid.

On the other hand, a seminar presentation, when the presentation techniques themselves are being assessed as well as the treatment of the subject, might well be an occasion for using a number of visual aids. If you are studying science or engineering, you will almost certainly rely heavily on visual aids, and you will be assessed on these as well as on other aspects of your work. A poster presentation, for instance, will involve you in the design and use of high-quality posters (see pp. 51–3), while a project presentation will require you to illustrate your work regularly throughout your talk. We'll discuss this in more detail later.

However, there are some points in most presentations at which a visual aid is appropriate. Some of these occasions are more common in arts-based and others in science and technology-based subjects, but the division isn't absolute, of course, and this list certainly isn't exhaustive:

- An introductory slide, showing your name(s), the title of your talk and the date. This makes a useful introduction and gives the audience something to look at as you start. You may wish to repeat this introductory slide at the end of your session.
- An outline of your talk. This is likely to be a list of points, either numbered or bulleted, which the audience can note in order to have an overview of what you are going to say.
- A general view before you look at the detail. This would apply to a slide of a painting, a management hierarchy chart, a building site or an electronic circuit block diagram.

- Detail which you're going to discuss, and which the audience needs to see in order to be able to follow what you say. This could, for instance, be a line of poetry, a bar of music, a small part of a painting, a line drawing of a component or the seed of a plant under a microscope. Sometimes, such details may be too small to be seen in the normal way by the naked eye.
- Movement which you need to describe. This might be the growth pattern of a tree or the possible spread of fire through a building. The data projector (see pp. 45–8) is particularly good at showing such development.
- Relationships which you need to discuss. This might involve a family tree, a flow chart or a map of a country showing population distribution or climate change.
- Simple mathematical material, such as a table of figures or a graph. However, if such material becomes complex (see p. 48), it ceases to be useful as a visual aid.

There are no doubt hundreds of other examples, but we've suggested a wide range of possible visual aids and also some of the limitations to their use.

Visual aids preliminary checklist

You are preparing a presentation and trying to decide which visual aids you will use. Consider the following:

- What equipment is available?
- Do you know how to order it and, if necessary, collect it and set it up?
- What visual aids will other speakers be using?
- Is the room suitable for visual aids, in terms of size, lighting, blinds and so on?
- How long is your talk? This will to a certain extent dictate the number of visual aids you use.
- If you are using a data or overhead projector, what colours will you use for background, lettering and so on? Will you have a coloured background?
- Will you have an introductory slide, with your subject and your name on it?
- Will you show a bullet point list of the contents of your talk?
- At which points of your presentation will you and the audience need to see a diagram or other illustration?

Continued

- Do you want a summary slide at the end?
- Allow at least 20 seconds per slide; how will this affect the amount of information you can give the audience?
- Do you need to reproduce any of your slides as handouts to give to the audience or the person marking the assignment?
- If your chosen equipment fails, what will you use as backup? This is particularly important if you're using a data projector.

Designing a visual aid

Whatever form of visual aid you choose, there's one overriding criterion: everyone in the audience must be able to see everything you show. This sounds obvious, but inexperienced speakers sometimes crowd their material on the screen, whether it's words or diagrams, until it's impossible for the audience to see the details. Let's look first at the potential problems of words and then at punctuation, colour and backgrounds.

Font size and style

There isn't space on a screen for many words if they're a sensible size for viewing. In a seminar room, you can probably use a font of about 20 point and the audience will be able to read the words; in a large lecture theatre, you may need 30 point or even bigger. This means, incidentally, that it isn't wise to copy printed material onto acetate for use with the overhead projector: almost certainly, the print size will be 12 point, far too small to be read even by people sitting near the front. There's also likely to be too much on the page. Look at a typical page from a textbook or a report. It has hundreds of words and also irrelevant details such as a page number. The most important sentence on the page might come down near the bottom, where it would hardly be noticed if it were projected. If there's a diagram on the page, it will be small, with a label that might be 10 point italic. It isn't sensible to try to use such a page as a visual aid, although it happens more often than one would expect.

There's another consideration, which is the style of font you choose. If you look at one of the most common fonts for documents, Times New Roman, you'll see that the letters are smaller than in some other fonts and have serifs, the small extra strokes or curls at the edges of the letters. These help the reading and look attractive on the page. However, a visual aid needs to be as simple and uncluttered as possible, so a sanserif font, in which the letters don't have the serifs, is clearer when it's projected. Arial is a good choice. You may want to make a heading look more interesting by using 'shadowed' or outline letters, or a more elaborate font. Be careful! It's easy to make your visual aid harder to read, or even oddly childish, by overdoing such techniques. Generally speaking, for your headings use

large bold capitals in the font you're using already, perhaps in a different colour from the rest of the text, and they will stand out sufficiently.

It's perhaps unwise to suggest a maximum number of words on the screen at any one time, as it must depend on the purpose of the visual aid and the size of the room in which it's shown, but 25 is a reasonable number to use as a guideline. This might include four or five words used as a heading, and the rest as a list of points underneath. Bulleted points are usually better than numbered, as they make more visual impact, although there are times, of course, when numbers are needed. If you need to use them, don't add brackets or full stops: the numbers by themselves will be clear enough if they're well spaced, and again, you want to avoid clutter.

Selecting the words

Try not to use full sentences on the screen, and never show a long paragraph of writing. You are producing visual material, not a written text, and you must therefore show only what the audience can read easily, which means the minimum of words necessary to give the message. For instance, suppose you are a history student, and have been asked to give a seminar about the revival of monasticism in the Middle Ages, focusing on the Abbey of Cluny. You might want to give your group the following information in visual form, to reinforce your message:

> The Abbey Church of Cluny was founded in 1088. It was the largest Romanesque building in Western Europe, and its architecture and decoration were enormously influential. It became immensely rich and politically powerful, because of its independence and the eminence and capability of its abbots.

There are 45 words in this paragraph, far too many to put on the screen. This doesn't matter, though, as you are going to tell your audience the details, and all you need to show them are bullet points to focus their attention. You could use a heading with a list of points under it, as shown below.

Abbey Church of Cluny

Founded 1088

- Huge size and fine architecture
- Capable, influential abbots
- Enormous wealth
- Independence and political power

You now have just 19 words and one date on the screen, so you can use a sensible style and size of font in order to project these key ideas. You will be able to enlarge on these details as you talk, for instance explaining the nature and extent of the influence of the Abbey of Cluny, and the audience will be able to use your bullet points as headings in their notes and fill in as much detail as they think is appropriate. You'll see that you have identified the most important words for your audience, so they can concentrate on what you say rather than having to worry about exactly what your message might be. These are important aspects of the speaker's responsibility: clarifying issues and highlighting key ideas for those who listen (see also p. 16).

Punctuation

You'll also have noticed that there's no punctuation in the visual aid version of the example above, although the original passage has normal full stops and commas. Very little punctuation is needed on a visual aid, partly because there won't often be complete sentences and partly because we're simplifying and removing anything which might be thought of as 'clutter' (not that, in ordinary writing, punctuation isn't an integral and essential part of the way in which an author conveys meaning). A few punctuation marks should be used if they're appropriate, for instance a direct question that isn't followed by a question mark always looks wrong, and apostrophes should be used correctly in the normal way. On the other hand, a list doesn't have to be introduced by a colon, and it's rare to need commas unless they affect the meaning of the words. In other words, leave punctuation out unless the result looks odd or is ambiguous.

Colour on the screen

Whether you're using an overhead or data projector, you may choose to have a coloured background for your visual aid and a contrasting colour for the text or diagram. Plain black text on a clear base will be sufficient under some circumstances, such as a seminar paper in which you're showing half a dozen bullet points, but for any occasion in which your presentation skills themselves are important, you'll certainly need to use colour if you want a professional appearance to your work.

You have a choice between using a dark colour for the background and a light colour for text, or doing the opposite: a light background will allow dark coloured text to be highlighted. In practice, it's a bit more complicated. It's essential that the contrast between background and text (or diagrammatic material) is sufficient, but this isn't always clear from the computer screen. Unless you project your image on a large screen, as you will during your presentation, you can't be sure that your colour choice will work. This is especially true if you use two shades of the same colour: dark blue text on a light blue

background can be effective, but you need to project it to be sure that the letters stand out clearly. You also need to make sure that your colours look pleasant together, and again, it's hard to be sure unless you see them on a large screen. Clashing colours, or an unpleasant mix, will distract the audience from important information. A popular colour choice is a dark blue background with white or yellow for the text: this works well and looks attractive.

Once you've chosen your basic colour scheme, don't depart from it without a good reason. The colour you show has to mean something to your audience: if, for example, you use dark blue for background with yellow for main headings and white for the rest of your text, the audience will very quickly get used to this pattern. If you then use other colours, they will ask themselves why; if the answer's clear (for instance you want to highlight a particular number in a small table), they will accept it, but if it isn't, the question can become a major distraction.

Consistency is also important, especially if you're part of a group presentation. If one of you uses red for a particular section of a map, for instance, then everyone who shows the same area must use red. In the same way, be consistent yourself and agree a consistent format between the members of the group in such details as your choice of style for headings and the colour of the border if you use one.

Colour can cause problems, too, especially for the high percentage of men who have some colour deficiency in their sight. Obviously, you can't make allowances for the small number who are totally colour blind, but there are some combinations which often present difficulty and which you need to avoid: red and green is the most common. Such problems of colour recognition are, oddly, rare among women.

Some colours simply don't show up well: pink and orange are in this category, while green can look faded and needs to be used with care. A patch of red is effective, but writing or fine line drawing in red simply doesn't project sufficiently strongly. This is not what you'd expect, red being a bright and dramatic colour in itself. As a result, people use, say, black for the text and then highlight the key words in red, only to find that the words they wanted to emphasise show much less strongly than their surroundings. Black always projects well, with dark blue almost as good, and brown and purple are generally easy to see.

Once you have a colour combination you're happy with, you can use it whenever you like. If you're using PowerPoint, you can copy your master slide, with its colours, into a new presentation, and you have your chosen colours readily available. This can have a useful side effect. We'll say something later about the need for backup (see pp. 47–8), but if you regularly create presentations with the same colours, you may be able to reuse some of your slides from a previous occasion, as they'll match your new ones.

Backgrounds

We've discussed background colours above, but you may like the look of some of the patterned backgrounds available on PowerPoint or similar packages. They need to be chosen carefully, in the light of your main message. If you're talking about life on a tropical island, waving palm trees in the background might be ideal, but they're not likely to be of much use generally. Some standard backgrounds contain their own traps for the indiscriminate user. If, for example, you choose one which is pale in colour at the top and progressively darker down the screen, you're faced with a quandary: do you use light coloured print, which disappears at the top but shows up well lower down, or a dark print that looks splendid at the top but is hardly visible towards the bottom? If you feel that you've found a colour that works for the whole image, have you allowed for the fact that a diagram may look unbalanced, some sections apparently highlighted while other sections are very pale?

Unintended emphasis can occur with any background that has patterns on it. A popular example is an attractive dark blue with a red bar about two-thirds of the way down on the left-hand side. This stretches about a third of the way across the screen. If the speaker happens to have a word or a number just above this line, it appears to be underlined in red. If the word or number happens to be over the red bar, it may be less clear than other words and numbers on the screen – and the viewer will wonder why.

The overall advice that comes out of a discussion of backgrounds is that, on the whole, a plain colour is safest, and the more technical or scientific the content of your image, the more important it is that nothing should distract from it or distort its message.

Visual aids checklist

Take any one of your visual aids, project it and test it in the light of the following questions. Before you give your presentation, check all your visual aids this way:

- If a colleague stands at the back of the room, can he or she see every detail on the screen?
- Is there material which is irrelevant and should be removed (such as a slide number or the source of a diagram)?
- Does the slide need to be corrected (for instance because of a spelling error) or updated (for instance because a statistic has been superseded)?

Continued

- Is there unnecessary punctuation on the slide?
- Has any essential punctuation been left out?
- Is the colour combination pleasing to look at?
- Has the message been distorted because of the background or layout of the slide?
- Is every diagram correctly and clearly labelled?
- Have you shown more detail than the audience can easily follow?
- Is all the lettering big enough to be easily read?
- Are there too many words on the screen?
- Have you shown long sentences or paragraphs which are difficult to read?
- Is this slide consistent in style and layout with any others that you will use?
- Overall, is your message clear, easy to understand and attractively presented?

► Visual aid equipment

Nowadays, you are likely to use one or both of two types of visual aid equipment: the data projector, operated from a computer (often a laptop) through the projector itself onto a screen, and the more old-fashioned overhead projector, with acetate slides that you can produce by photocopying from a printed source, or make by using PowerPoint or a similar package and printing onto special acetate. Hand-drawn overhead slides are unlikely to be acceptable nowadays. There are other forms of visual aid, such as handouts and demonstrations, which we'll discuss later in the chapter.

Before you spend time and effort preparing visual aid material, check with your tutor or lecturer to make sure that you know exactly what is appropriate. Is the assignment assessed and, if so, is the visual content evaluated as part of that assessment? How many images are you likely to show? If there are only one or two, it might be better to give handouts than to use complex technology. Do you have to arrange your own equipment or will the lecturer provide it for you? If you book it yourself, how much notice should you give? Remember, too, that you need to have the equipment available for rehearsal as well as for the performance.

Adequate rehearsal is essential. Too often, people practise the talk itself, but leave preparation of the visuals until the last minute; they may even look slightly surprised in front of the audience when they see the final version on the screen for the first time. You need to know exactly what the enlarged image looks like and where to find the detail, so that you can use the pointer

easily as you indicate on the screen what the audience should be looking at. (They can, of course, manage text perfectly easily without help, which is why you don't need to point to words.) It's difficult for an audience to find their way through a complex image without assistance, and the pointer gives such help, if it's well used. Don't rush this: it will take people a few seconds to adjust to the image and see where the pointer is – if you simply point and remove the pointer immediately, they won't have enough time. Let the tip of the pointer rest for a moment on the detail that's important, then remove it.

If you use a laser pointer, it's even harder for the audience to identify the point of light, especially if the image itself is multicoloured. It's difficult to keep the light steady, too. Unless the screen is too high for you to reach, you will find that the old-fashioned metal pointer is easier to use, both for you and the audience.

We've stressed pointing on the screen. If you try to use the pointer on the projector itself, you will inevitably move forward and block someone's view. You will also have a bright light in your eyes, which is uncomfortable, and you won't be able to see clearly when you face the audience again. Stand back, almost alongside the screen, and you should still be able to see the image you're presenting while at the same time keeping contact with the people in front of you. A useful guide is to realise that, for most of any talk, your feet should be pointing towards the audience. If they are, you'll be facing the people you're talking to. There will be times when your feet will move round 90 degrees, so that you are sideways on to the audience, for instance when you're using material on the screen, but as soon as you've finished working through the words or diagram there, make sure that your feet turn again to their usual position and you are facing your audience.

Visual aids are important to any speaker, but they mustn't detract from you, the person the audience has come to see and hear. Nevertheless, they need careful preparation and their use has to be planned and rehearsed. We'll look at the two most common forms of visual aid equipment in turn.

The overhead projector

The overhead projector (OHP) is the good old-fashioned, low technology standby among visual aid equipment. It has great advantages: it's easy to prepare the material and little can go wrong while you're using it. You may be familiar with the OHP from lectures, as it's more flexible for teaching and training than the data projector, which is much more commonly used in presentations.

There are two ways of making transparencies for the OHP: you can photocopy from your source directly onto acetate, but you must be sure that you're using the right sort of acetate (departmental secretaries are usually knowledgeable about this sort of thing, so check with yours if you're not

sure what to use); you can also print directly onto acetate from your computer, again being sure to use the right acetate.

As we said earlier, using printed material and photocopying it isn't usually sensible, as the details, especially letters or figures on a diagram, will be too small. You might be able to enlarge the diagram sufficiently, but it's likely that some aspects will still not be visible at the back of the room. It's much easier and safer to make your transparencies by producing the material on the computer and then printing them onto acetate. You can design your image freely, making sure that lettering and colours are used appropriately.

Even with such a simple form of visual aid, it's important to think of the audience and its needs. If you switch on the OHP with no acetate in place, the resulting bright glare will be uncomfortable for the audience, and they will look away. Always put the acetate on the projector before you switch on, glancing quickly at the screen to make sure that the image isn't crooked or badly positioned. Some projectors will produce fringe glare or distortion at the edges of the image, or the image may be in focus at one point of the screen and out of focus elsewhere. Use the controls to correct this as far as possible, and think about repositioning the projector or the screen. You may also have the problem of 'keystoning', when the image is wider at the top than the bottom. This can usually, but not always, be corrected by changing the angle of the screen. A noisy projector fan may also be a nuisance, and you need to ensure that you can be heard in spite of it – this may be a good reason for switching off the projector if you aren't going to use it for a while.

Don't assume that you need to switch off whenever you change your acetate. If you do this, you may blow the bulb, and in any case it's distracting to your audience. The best guideline is to switch off if you aren't going to show the next image for a few moments, but leave the projector on if you're moving on to the next acetate almost immediately. If for some reason you don't want to switch the projector off, use a 'cover' acetate which shows just the background you're using and perhaps the title of your talk as a reminder.

It's as well to check the position of the screen, especially in sunny weather. The OHP can stand quite strong light (more so than the data projector), but sunshine falling on the screen is disastrous. If you're in front of an audience for a long presentation, it's wise to check that the sun won't move round onto the screen during your talk, or draw the blinds before you start.

You may have seen your lecturers reveal the image gradually, often by putting a sheet of paper over part of the acetate. There's sometimes a benefit in doing so when you're teaching, but many students, and others, dislike the technique and find it patronising. It would be unwise to use it in a presentation. If you need to build up your image, use overlays of acetate.

With any form of visual aid, give the audience time to assimilate the image before you start to talk about it. This takes longer than you might

expect. Allow 20–30 seconds, depending on the complexity of the image, in silence before you speak. Watch the audience: their eyes will be on the screen while they're studying the image, and when they look at you again, it's safe to continue.

If you follow the guidelines about font and colour, and allow the audience the opportunity to look at and assimilate your visual material, you shouldn't have many problems with the OHP. However, this is not necessarily true of the data projector, which is likely to be the visual aid equipment you use most frequently.

The data projector

In recent years, the data projector has outstripped its rivals and become the standard visual aid equipment in industry and commerce in the UK. It's also increasingly used in education, and it's a good idea to get used to it during your course, so that you aren't suddenly faced with it at work when other people know how to use it and you don't.

There are great advantages to using the data projector, and it's worth looking at them before we start discussing the potential problems:

- You can use one piece of equipment to show text, diagrams, movement, video, even to play music if you want to; you don't need to struggle with several sources of visual image at the same time.
- It's quick and easy to change the image: you only need to click the mouse or remote control, or touch the keyboard.
- You can build up an image step by step, or highlight the aspect you're talking about.
- The equipment itself is relatively small, especially if you have a ceiling-mounted projector and use a laptop; it isn't likely to get in the way of the audience, as an overhead projector often does.
- You can update your material at any time. While you need to rehearse with your visual aids before your talk, a last-minute change or correction is possible.
- Your visual material will look professional.

These are major advantages, but there are associated problems which ought also to be kept in mind:

- Just because you can use so many types of support material, don't feel that you have to. There's a great temptation, especially when you start to use PowerPoint, to produce an 'all singing, all dancing' display which is distracting and irritating to the audience. Use movement, music and so on only if it helps you to make your point.
- It's easy to change the image, and easy to do so by accident, especially if you're nervous. If you cling onto the mouse or remote control, you

may move on to the next image without even knowing that you've done so. It may be wise to leave the mouse on the table until you need it.

- Lists can be built up one stage at a time, but all lists shouldn't be treated in this way. It's often better to show all the points at once, to give an overall impression. Build up a list only if doing so helps the audience's understanding.
- The equipment is small, but it's brightly lit and coloured. Don't be tempted to look at the screen of your laptop as you talk – you can end up by talking to it instead of the audience. If you want to check the image, glance at the big screen. You might choose to switch off the laptop screen or 'blank' it while you're talking.
- It's useful to be able to change your visual aid if you discover a spelling error or want to update a statistic, but don't be tempted to make small changes for the sake of making changes. You need to rehearse with your material so that you're really familiar and at ease with it when you give your talk. You could also regret a last-minute change when you see it projected.

There are other possible benefits of the data projector. When you prepare your material, you may find that you will be speaking for a few minutes without needing a visual aid. Include a 'blank' slide at this point, so that the audience sees just your background colour. It isn't a good idea to keep showing a slide that's become irrelevant, but you can't switch off the projector as you would an OHP. The blank slide is also useful at the end of your presentation when you ask for questions; if you simply leave the final image on the screen, questions may focus on that rather than earlier aspects of the talk, or it may become a distraction to the audience. Have a printout of your whole slide show available for your own reference, so that if you need to go back to a particular image in order to show it again, you can identify it quickly.

You may, incidentally, be asked to produce copies of your slide material as handouts, or it may seem to you to be a good idea. It rarely is, for two reasons. First, you are going to talk through your visual aids, explaining them and developing the detail further in what you say. As a result, the slide by itself, without your spoken words, may mean very little to anyone who sees it. Secondly, you may, for the same reason, be tempted to put too much on the slide, so that, while it's informative as a handout, it isn't satisfactory as a visual aid. Handouts and slides represent different ways of giving an audience supporting material; they do different jobs and should be prepared separately in the light of their specific requirements.

Although you'll prepare and rehearse your talk with care, you might still need to use the data projector's hidden slide facility that allows you to skip a slide without the audience's knowledge. This can be useful if you're

running short of time, but you will give the game away if you visibly number the slides. We remember a presentation in which the images were numbered 1/17, 2/17 and so on. The speaker ran out of time and so stopped at 15/17, and inevitably the first question was, 'What didn't we see on slides 16 and 17?' In the same way, if you date each slide and then give the presentation a second time, make sure that you change the dates.

You can show the development of your subject in a way that would be difficult without a data projector, but if, for example, you show a plant growing or winds circulating over the south Atlantic, you must do so in silence, allowing your audience time to watch the process before you begin to discuss it.

Speed is one of the major problems of a computer-generated presentation. Speakers often forget that the images shown can be complex, such as a three-dimensional picture of a piece of equipment, and yet it's very easy to move on. Don't be pushed by your own visual material into speaking more quickly or showing the slides more rapidly than you intended. Taking your time is a mark of an experienced and confident presenter.

You will, however, have to be aware of the audience's perception of time. For example, there's a limit to how long the audience will sit waiting for your presentation to start. It takes at least two or three minutes to boot up the computer and set up the presentation, and if you're using unfamiliar equipment, you may find yourself becoming increasingly agitated as you check cables and press keys and nothing happens. You have to make the tricky decision about how long you can go on trying to get an image on the screen before the audience gets restless. There can come a point at which you simply admit defeat and turn to your own backup material.

Backup is essential for computer-generated visual aids. A great deal can go wrong, with the equipment itself, the software or its compatibility, and the presentation must continue. Decide in advance what type of backup you need and make sure it's available. The OHP is probably the most common form and the easiest to use. Print out your images onto acetate, take them with you, and you can almost certainly change to this form of visual aid without much difficulty, even if you have to sacrifice some movement in doing so. At least your visuals are still good quality and attractive to look at. If you're talking to a small group, you may choose to make hard copies of your visual material and, in an emergency, give them out as handouts.

If you find yourself in this uncomfortable position, keep calm. The audience is likely to know about the potential problems of data projectors and their use, and will be sympathetic, as long as they aren't kept waiting too long before the talk goes ahead. Plan in advance how you will handle the situation and put your solution into operation with a confident smile and quick apology to the audience – they will be impressed by your professionalism. Once you are

underway, forget the problem: it's not good for your own confidence to keep thinking of it, and you certainly don't want to remind the audience.

Whatever form of visual material you're using, always check it carefully. A spelling error on the screen attracts and holds the audience's attention, so they forget they're supposed to be listening to what you say. Words that don't fit onto the screen but fall onto the wall or climb onto the ceiling aren't easy to read and suggest that you didn't rehearse with your visual material. Never use an image for which you need to apologise: if it isn't clear, get a better version or leave it out. Your visual aids need to support you, not undermine your presentation.

We've looked at the principal forms of visual aid you're likely to use, but it's worth spending a little while on some of the others.

▶ Handouts

We mentioned handouts earlier in the context of the failure of your computer-generated material, but they're useful in their own right. The images on the screen may be forgotten, but the paper the audience takes away at the end remains with them and can be a constant reminder of what you said. If your role is a 'selling' one, for instance if you're a management student and you're introducing a possible career choice to your peers, or an engineering student 'selling' a device that you and your group have designed and built, it's impressive to give your audience a handout showing the main attractions of the career and any possible contacts, or a photograph of your product with the key points of its specification and its benefits to the user. This will reinforce the impact of the presentation itself and ensure that the good impression you gave at the time lasts beyond the duration of the talk. You might choose to pass round this handout before you start, or at the end of your talk, as a reminder of your main message.

Sometimes in a presentation, you need to give the audience supporting information which isn't appropriate within the talk itself. You might need to discuss the overall price of your product, but the details of how that price is made up are difficult to take in just by hearing them and not immediately relevant to what you're saying. This is handout material. Similarly, if you're describing an aspect of climate change, you might have a great many statistics available, covering many years, but all you can sensibly show to the audience is a simple graph of the trend. If they need to be able to refer to the figures, put them onto a handout and use the graph on the screen. This has the advantage that you can refer to the detailed statistics, for instance in answer to a question, and everybody can see them easily, which they certainly couldn't if you tried to project all the figures. This type of handout

has to be given out before the presentation starts, so that the audience sees what you are going to discuss and can follow the detail, if necessary, on their own copies while you use the screen.

Generally, it isn't wise to give handouts to the audience during your talk, as it causes too much delay and disruption, although if you have a small number of people, fewer than ten or so, you might take the risk. Otherwise, give out the material before you start, when it's easy to check that everyone can see a copy. Just occasionally, you might want to give the audience the handouts at the end of the presentation, as a reminder of what you've said. If you do this, let them know in your introduction that this will happen, so that they don't have the frustration of writing notes only to be given the information in printed form later.

The handout must be as professional as the rest of the presentation. Design it as effectively as you can, without overcrowding the page, and make sure that each member of the audience can see a copy. Ideally, they would have a copy each, but with a student audience you might get away with one copy between two or even three – paper is expensive!

Handout checklist

You feel that it would be appropriate to use handouts for your talk. Make sure they are as effective as possible by using the following guidelines:

- Know exactly why you are using each handout and when it's appropriate to give it to the audience.
- Design your handouts so that they look as professional as possible. Avoid putting too much information or too many diagrams on the page.
- If you have several handouts, number them for easy reference.
- Check the number of people you are expecting and make sure that everyone will be able to see the handouts.

► Prototypes and demonstrations

If you're studying a technical or scientific subject, you may need to build a prototype of what you have designed and use it in your presentation. This can be very effective, but you need to plan with great care how you are going to show it to your audience.

How many people will be looking at your prototype? If you have a small audience, they may all be able to see easily, but if you have a large audience, the chances are that they will mostly get a general idea but be unable to see the details. Can you use a platform or place the prototype on a table above the level on which you're standing, so people have a better view? It might still be worth having a large picture of the product on the screen, maybe rotating it so it can be seen from all angles, in order for people to see the general shape of the prototype and then study it further by using the image on the screen.

People don't like being asked to look and listen at the same time, so when you show them your prototype, they will want to have a good look before you discuss it. If it's small enough, hold it up and turn it round very slowly in your hand, moving from side to side if it's necessary in order to let everyone see it. At this stage, don't continue to talk. Only when they've all had the chance to look at the prototype can you start to discuss it again. If it's too big for you to hold up, display it as well as you can, if possible from different angles. Take care not to block the view yourself; stand well to the side or behind it.

When the audience has looked at your product, then you can describe it. Indicate each part clearly and slowly with either your hand or a pointer, then speak; pause before moving on to the next aspect. Don't rush this description, as it will make an impact on those who see it, and you want them to remember it throughout your presentation and afterwards.

Demonstrations are far more difficult to control; indeed, if they can go wrong, they probably will. They can be enormously effective, as everybody likes to see things happening, but you have to realise that part of the attraction, human nature being what it is, lies in waiting to see if something will go wrong and how you will handle the situation if it does. (Calmly, courteously and confidently is the answer to that.) Try to put things right and be willing to ask for help from a member of staff if necessary. They will have had experience of things going wrong and will be sympathetic and helpful, especially if they know that all went well at rehearsal. Sadly, problems can arise within a few minutes: one of us saw an oscillator working perfectly well during a rehearsal, only to see it fail inexplicably half an hour later in front of the audience.

In many cases, there's an answer to such problems. If it's allowed, carry out your demonstration earlier and record it. You can then show it to the audience via video or the data projector, and you can be sure that the audience will see a perfect demonstration, with no problems or hesitations. You are completely in control and can concentrate on giving an effective presentation.

Prototype and demonstration checklist

As you plan your presentation, ask yourself these questions:

- Is it a good idea to use a prototype?
- Will the audience be able to see it?
- Can you use a table or other kind of stand to help them?
- If so, where will you stand as you talk about your prototype?
- Do you need a picture of your prototype on the screen?
- How much time will be taken by showing your prototype to the audience (without speaking)?
- If you are demonstrating a process to the audience, how can it go wrong?
- How could you put it right, quickly, in front of the audience?
- How would you continue your presentation if the demonstration failed completely?
- Would it be better to record your demonstration and show it through the projector?

▶ Poster presentations

If you're studying pure science, you will probably have to take part in a poster presentation. You will be asked to research and prepare a topic with a poster as your visual aid; yours may be one in a series of posters, each showing a different aspect of the main topic. Your poster will be large, probably AO size, but you still have the challenge of producing the information so that everyone who walks round the exhibition can see your material clearly, often from as much as a metre away. It's therefore important that your poster is eye-catching and attractive in layout.

The audience will walk round, looking at each poster in turn. You may be asked to make a short presentation, probably only three to five minutes, to each group that forms in front of your poster, or you may have to answer questions from people as they arrive at your site. Either way, the information in Chapter 2 is relevant. The two biggest potential problems are having too much to say for a short amount of time, and having too much information on your poster, so that people can't easily see the details.

You can't say much, so you need to think through the points that people are most likely to want to know about your work. Draw their attention to,

and briefly describe, a couple of aspects which are unusual, new or striking, show where on your poster they can see more and that's about it. Don't try to say too much by speaking quickly, as there's likely to be background noise of other people talking and you won't be heard. Speak slowly and clearly, make eye contact with the person or small group listening and ask if they have any questions when you've said your piece. It's no good embarking on long explanations, as your audience will soon move on; keep your answers brief, but offer to say more if they have time and it seems appropriate.

The poster itself mustn't be crowded. Several people might look at it at the same time and they won't be able to see small print or tiny details. As far as possible, make your images big and bold and any writing sufficiently large and in a sensible colour (usually blue or black). You probably won't have any print smaller than 24 point and your headings will need to be considerably larger. As with any visual aid, use a normal mixture of upper and lower case bold letters and a simple font such as Arial. It's not a good idea to use text in capital letters, as it's harder to read. Make sure that there's plenty of blank space so the text stands out well, and use arrows to direct the reader from one area of text to the next. Try to position your most important message in the top half of your poster and as centrally as possible, as that's where people's eyes will rest most naturally. Scan in photographs or other diagrammatic material, again checking that the colours will reproduce clearly without clashing or looking in any way messy.

It's wise to take any opportunity you can get to look at the posters from previous occasions – there are likely to be some available in your department – and see what looks attractive and easy to read, and what doesn't. You will almost certainly be able to get your design made up into a poster and laminated within your own institution, but remember that other students will be doing the same thing, so don't leave it until the last minute. Make sure that you know how your poster will be attached to the wall or stand in case you need to take any other equipment with you.

Poster presentation checklist

You are preparing a poster presentation. Have you:

- checked previous posters to see what looks attractive and what doesn't?
- placed your key message where it will be most readily seen, centrally and in the top half of the poster?

Continued

- designed your poster with your key messages in mind, using blank spaces and guiding the reader from one item to the next?
- chosen a simple font and made the lettering big enough to be read from a metre away?
- used colour sensibly, especially strong colours like black and blue?
- checked your poster carefully for errors?
- allowed plenty of time for your poster to be made up and laminated?
- checked how your poster will be fixed to its board?
- rehearsed with your poster so that you are at ease with it?

► Computer demonstrations

It's becoming more common for students in the sciences, especially computer science and related disciplines, to have to make a computer demonstration. If you have to do this, check exactly what happens in your department, as the details vary. It's likely that you will have to sit at your computer and talk through a piece of work for about ten minutes, while two or three examiners look from over your shoulder or beside you at what you're showing on the screen.

The choices you make in advance about how much you can show will determine whether your demonstration is successful or not. The examiners are interested in what you have produced, whether it's at the right technical depth, is user-friendly and so on. They need to see these aspects demonstrated, so you need to decide what you can show on the screen as an illustration. Don't be tempted to show a great deal at high speed. The examiners aren't just assessing your work; they're also interested in your introduction to the topic with its overview, how much detail you've chosen to give next, whether it's sensible for such a short presentation, whether they can see clearly and follow a logical progression of information and the pace at which you're both speaking and using the screen. Computers can show lots of information very rapidly, so you must show that you are in control; 'don't rush', always a good maxim in speaking to an audience, is especially important in this type of presentation.

Rehearsal is essential: you need to time your presentation well and make sure that all is ready when the examiners reach you. After you've given your talk, you will probably be asked questions, and of course you'll think about these in advance and make as good a guess as possible about what they will ask. At this point you can make eye contact, which was difficult

before, so take the opportunity to look at the examiners and appear friendly and interested in what they have to say. Answer as clearly and concisely as you can.

With any presentation, your success will depend largely on the time you spend preparing not only what you will say, but also how you will say it, and what the likely questions will be. Even in a computer demonstration, the essential relationship is between you and your audience, not between the audience and the visual aids; if you use your visuals effectively, they will be a support to you and instrumental in your success, but you will always be in control.

Computer demonstration checklist

You are preparing a computer demonstration. Have you:

- considered where you will sit and how easy it will be for your audience to see the screen?
- introduced your topic in a sensible overview?
- thought carefully about the points which need to be shown on the computer, without unnecessary detail?
- chosen a reasonable amount of material which can be shown and discussed without being rushed?
- timed your demonstration and rehearsed it?