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Giving a talk

Scientists, in addition to writing about their work, often give lectures and talks at conferences and meetings. Such presentations are an important part of scientific communication and many students are now required, during their course, to present short illustrated talks. For example, if you have recently completed a project or dissertation you may be expected to talk about it to the rest of the class. The length for the talk may vary, but it is usually between 15 and 30 minutes, with time allowed at the end for questions from the audience. The talks may be marked and the marks count towards the final assessment in a subject. Like other aspects of studying science, certain skills are involved and this chapter offers the advice needed. The subjects covered include:

- the role of the audience
- format of a talk
- preparation (including the use of visual aids)
- final preparation and delivery
- assessment.

(Reference should also be made to page 76 which describes the type of information needed for a talk).

8.1 THE ROLE OF THE AUDIENCE

The audience is an essential part of any talk. Your content, style and delivery is aimed at them, and you should interest and inform, but never bore. Remember the information you present is to be seen and heard, not read. Bear this in mind during the preparation. Try to imagine yourself in the audience's place and think what it would be like to sit and listen to your talk. This will often help decide the type of material to include. Before the talk try to discover what the audience already knows about the subject. If their knowledge is limited it may be worth including some background material. On the other hand, if they have a fair understanding then you can start at a higher level. In most cases the audience is likely to be made up of fellow students, so you should know them quite well!

8.2 FORMAT OF A TALK

A talk is best divided into 5 sections:

- * Introduction.
- * Main part.

- * Conclusion.
- * Summary.
- * Question time.

Introduction

Here you introduce the talk and outline the various subjects which are going to be considered. If using handouts or visual aids, include one at the beginning to list the main areas being discussed. It will give the talk a more structured approach. Use the introduction to establish a relationship with the audience. Even though many may be your friends, standing up and speaking in front of them is a different situation. Adopt a formal, yet friendly manner. You should also use the introduction to go over any background information which may be needed to understand the talk.

Main part

This is where you describe the main information about the topic. Always keep to the same order as given in the introduction and tell the audience when you have finished one section and are going on to the next. When using visual aids explain them thoroughly to the audience. A long pointer will help. Students often prepare excellent visual aids, but never use them to full advantage. They only quickly refer to them and then carry on talking about the next subject. This is off-putting for the audience; they are not sure whether to look at the visual aid or listen to the speaker. It is also wasteful of your time and effort. Remember if you are nervous about talking to a group of people, when using a visual aid the audience looks at the aid and not at you.

If the talk is either about a project or dissertation, this part is where you explain your methods and results. The visual aids may include graphs, charts and tables. You can also have a demonstration set up of any special equipment that was used.

Time in talks is limited, so pick examples with care. It is better to explain a few carefully, than skim superficially through several. This will only leave the audience confused and possibly bored.

Conclusion

Here you describe the conclusions arrived at in the talk. Again visual aids can be used to list the salient points.

Summary

It is a good idea to finish your presentation with a short summary, highlighting the major issues described. With a book or article readers can refer back to remind themselves of what has gone before. An audience can't do this—they rely on the speaker to tell them. A visual aid at this stage, summarizing the main points, is a good idea.

Question time

Most talks have a question time where the audience can ask about the topics mentioned in the presentation. When answering questions always be honest and if you are not sure of the answer then say so. Never try to fool your audience. If you are well prepared, this is unlikely to happen and question time can be an interesting and enjoyable session.

8.3 PREPARATION (INCLUDING THE USE OF VISUAL AIDS)

As with all your work, sound preparation is the way to achieve a good and professional result. Like other assignments, it is easier to divide the preparation into stages, working at each in turn. The stages are:

- * Stage 1: planning the assignment.
- * Stage 2: collecting the information.
- * Stage 3: sorting out and writing the 'lecture notes'.
- * Stage 4: arranging the visual aids.

Stages 1 and 2

These are basically the same as when beginning any assignment. (It may be helpful to re-read Chapter 5, page 77, and Chapter 6, page 92.)

In planning (Stage 1) you produce a brainstorm plan to generate ideas and decide on the information needs. With Stage 2 (collecting the information) you use library retrieval skills to search out and locate information.

If the talk is about a project or dissertation then stages (1) and (2) are nearly complete—you go through the work selecting the parts you need.

Stage 3: sorting out and writing the 'lecture notes'

This is where you sort out the information and structure it into notes which will form the basis of the presentation. Most student talks last no longer than 30 minutes, which means being selective in your choice of material. Possibly you may have collected more than you need. It will not be wasted, but give you a thorough background of the subject. This should make you feel more confident when giving the talk.

Writing 'lecture notes'

When you have chosen which material to include in the introduction, main part, conclusion and summary, you can begin writing your 'lecture notes' to use during the talk.

The following advice should prove useful.

- Number, underline and annotate as you would all other notes. This helps to consolidate and organize the work.

- Write notes, not a script. Never read out or learn by heart what you want to say. It will sound stilted, boring and most likely you will speak too quickly. Remember, the audience might need to make their own notes. If you are particularly nervous, it might help just to memorize the opening sentence(s) (no more) simply to get started.
- Make your writing large and clear so that you can read the notes from a good distance. Using capital letters on every other line is one way. Never be 'note bound' and scared to take your eyes off your writing. It will mar the delivery. Some people recommend notes written on cards, rather than paper. Try both and see which you prefer.
- Keep every sheet of paper (or card) numbered—so if they get moved during your lecture (or you drop them!) you can quickly find your place. It is a good idea to make a hole in one corner and keep the notes together using a treasury tag.
- Mark the notes where you intend to use visual aids (put VA in the margin).
- When the notes are complete, practise the talk and time it. Never hold notes (especially if your hand shakes) but put them on a desk, or table in front of you. Speak at a steady pace, sorting out the pronunciation of any difficult and unusual words. A tape recorder is useful here. If you overrun and you think the pace is about right, then see what can be deleted without losing any sense or order. Often reducing the number of examples, or general background helps sort it out. Timing a lecture accurately is a difficult business—never feel dispirited if it takes a few attempts.
- If your notes begin to look untidy, don't worry, as long as you can follow them. However, if you think the crossings out and alterations confuse you, and you would be more confident with neater looking notes, re-copy them. It is important to be relaxed and at ease when giving a talk.

Stage 4: arranging the visual aids

It is always a good idea to include visual aids with a talk. They will give variety to your presentation and help keep the interest of the audience. There are different types available and they can be used in many ways:

- * To supplement verbal information (e.g. maps, photographs and diagrams).
- * To explain experimental results (e.g. tables, graphs and histograms).
- * To summarize information (e.g. flow charts, lists and hand-outs).
- * To explain complicated situations (e.g. diagrams of metabolic pathways and chemical formulae).
- * To build up ideas (e.g. use of overhead transparency overlays).
- * To show a technique (e.g. videos and classroom demonstrations).
- * To show the application of science (e.g. videos and photographs of industrial processes).

General advice about visual aids

If you are making your own, draw them neatly, following the advice in Chapter 7, page 119. Alternatively, you may be able to borrow certain aids (e.g. videos and 35mm slides). Many manufacturers produce them for teaching purposes and your college library may have a number. Also the catalogues listed on page 43 could be helpful. Tell the audience

whether the visual aids are your own or borrowed and be sure the library (or supplier) knows why you need them. Always verify you are not breaking the law of copyright.

Check that any special equipment like a projector and screen is ordered and that it works. If possible, have spares handy (e.g. a projector bulb) or know how to get a replacement or repair in a hurry in case of a breakdown in the middle of the talk. With all equipment, especially electrical, be sure you know how to operate it (practise beforehand) and check cables and plugs for safety. If you need the room darkened then be sure it has blackout facilities. If not, arrange for an alternative venue.

Types of visual aids

A number of aids are available and those listed below are particularly suitable for student use.

Handouts

Handouts are an excellent aid to a talk and each member of the audience can have their own copies to take away at the end. You can use handouts for many purposes; to provide a summary, for a table or diagram and to list references. Always ensure the handouts are well laid out and neatly arranged. Handouts can be handwritten or typed, and there are many ways they can be copied; photocopying machine, spirit duplicator and waxed stencil duplicator. See what is available and take into account the cost. It is best to distribute handouts at the start of a talk making sure you have sufficient copies. See that everyone is supplied or you may be sure some bright individual will interrupt halfway through to complain they don't have one.

Flip charts

A flip chart is a large pad of paper attached to a board on an easel and when each page is finished it is 'flipped over'. You need special felt-tip pens and bright strong colours (black, blue, red or green) work the best; pale yellows and browns are not very effective. Flip pads are good if you are trying to build up a diagram and involve the audience to give you ideas. They seem to work best in small groups such as seminars. They can be used in any room, needing no electricity or blackout facilities. They are clean to use, unlike chalk boards which can be very dusty. The height of the board on the easel is also easily changed and you can refer back to the earlier sheets if needed. However, unless you have neat handwriting, flip diagrams can look untidy.

Chalk and dry marker boards

Nearly every class, lecture room and laboratory has either a black chalk or white dry marker board, so availability is not a problem. Although good teachers give the impression that using a board is easy, it is more difficult than it looks. Writing on a board and trying to talk at the same time is a tricky business and needs practice. Try to stand diagonally to the board so that you never have your back to the audience. Boards are useful for building up diagrams, spelling out specialist words and terms, and for extra quick sketches if needed at question time. They are good for big groups, provided you keep your handwriting large and clear. If you only have a board available and need a complicated diagram, draw it if possible before the talk. If you want to build up a

diagram as your talk proceeds draw it on the board before you talk, and then rub it off. The outline will still be visible very close to the board, but not from a distance. The main disadvantage with any type of board is that once cleaned, you cannot refer back to a diagram, and with white dry marker boards special pens and cleaning agents are needed. Also chalk boards can be messy and dusty. When using a chalk board always use strong colours like white, yellow and orange. Some makes of red, green and blue chalk can be difficult to see from a distance.

Overhead projector

This is one of the easiest and best aids to use. You draw the figures and tables either on separate transparent acetate sheets, or on an acetate roll, and project them on to a screen or even a pale-coloured wall. No special blackout facilities are needed, although some shading might be necessary in very bright sunlight. You can operate and focus the projector yourself while facing and talking to the audience. You never have to turn away from the audience. Special pens (always keep to strong colours) are needed to write on the acetate. Remember some pens contain permanent ink and mistakes are not easily corrected. Keep the writing large and clear. Make a practice diagram beforehand and look at it from the back of the room to check the legibility. It is also possible to use special acetate sheets which can be used in a photo-copier to reproduce very complicated diagrams from books. Be sure you are allowed to do this.

Overhead projectors are very versatile. For instance, you can use several sheets at once and lay one on top of another to gradually build up a complicated diagram like a chemical pathway, or life history. Some commercial transparencies are available—check what is in your library. The main disadvantage with overhead projectors is that some models can be noisy (because of a cooling fan) and looking at a bright light is sometimes distracting for the speaker, but not for the audience. In addition, if the projector and screen are not correctly aligned, the projected image will appear distorted, with the top wider than the bottom (the ‘keystone’ effect). This distortion is mostly slight, and does not normally affect the focus and quality of the picture being shown.

Slides, films, videos, filmstrips etc.

A large selection of published slides, videos and film loops is available and can be useful to include in a talk. Depending on the facilities, it may be possible to make your own audio-visual material. Some projectors can be linked to a cassette tape recorder, which can be used to great effect. For example, to show an interview or provide a commentary for an experimental technique. Visual aids using some type of projector, or TV monitor need blackout facilities, and you may need help in turning lights on and off. With a set of slides, enlist the help of a friend to change them during your talk, unless remote controls are available. If there are a lot of slides, a long film, or video decide when is the best time to show them; lights being turned on and off throughout a talk can be distracting. Depending on the topic, it may be best to show them either at the beginning, or towards the end, immediately prior to question time.

Photographs, charts and diagrams

All these are useful provided they are large and can be seen easily. Keep diagrams simple and don't use too many colours. As with an overhead transparency make a

practice one and check its legibility from the back of the room. It is best to pin this type of aid up on a board in front of the audience. If any photographs are small they can be passed around, although this can be distracting and they may be accidentally damaged.

Demonstrations

When describing an unusual piece of equipment which you have made, or modified yourself, it is a good idea to show how it works. With demonstrations always practise beforehand and check everything is ready before the actual talk. Demonstrations which go wrong can prove fatal! If you have access to video equipment then play safe and pre-record the demonstration.

8.4 FINAL PREPARATION AND DELIVERY

Finally, there comes the time when you have to stand up and give the talk. The following may help your final preparation and delivery.

- Check that the room is ready, particularly seating arrangements, and that all equipment is in working order.
- Be sure your notes and visual aids are in the correct order.
- Wear comfortable clothes. Although you should be smart and tidy, a talk is not the time to wear a new pair of tight shoes, or shirt with close-fitting collar. If you use reading spectacles be sure to have them with you.
- Expect to be nervous—even experienced lecturers are usually anxious before giving a talk. The important point is to make the nervous energy work for you. Channel it into giving a good talk.
- Address your talk to the entire audience, not just to one teacher or a special friend. Look at all the people present and talk to selected individuals, one at a time, in different parts of the room.
- Speak slowly, clearly and reasonably loud, without shouting. Project your voice to the back of the room and take a deep breath before beginning each sentence. Don't worry about accents. Think of the range of different sounding voices you hear on radio and TV. If you keep steady lively pace, you will sound fine.
- Be enthusiastic and interested in your subject. If you sound bored, the audience soon will be!
- Keep the language simple and direct, explaining any unusual scientific term. Use spoken rather than written English; it is fine to say 'I' and 'you' instead of the impersonal phrases and pronouns used in formal scientific writing. Try to avoid, however, phrases like 'you know', 'that sort of thing' and 'at the end of the day'.
- Refrain from being witty and telling jokes, unless they are good and fit into the material. They may fall flat, and you are not auditioning for a comedy show!
- If possible stand rather than sit. Don't slouch, but keep your weight evenly distributed on both feet. Standing gives you more command over the audience. You will see them more easily, and notice if they begin to look bored and fidgety (quicken and vary the pace) or if they have difficulty in writing notes as you speak (slow down). Use the audience—let them be the guide to govern the speed of your delivery.

- Try to keep reasonably still when talking. Pacing up and down will distract, and habits like jingling keys in your pocket can be off-putting. Don't stand in front of any visual aids when using them.
- Never try to hide your notes; you are not expected to give your talk from memory. As you speak keep taking a quick glance at them to remind you of what comes next. Use them as a prompt.
- All speakers occasionally make mistakes, miss out a point, or accidentally give the wrong information. If this happens what do you do? Never try to carry on, hoping the audience has not noticed. They will soon detect something is wrong, because one mistake tends to lead to another. Be honest and say something like 'I'm sorry I've missed out something, can we go back and pick it up from...'. The audience will appreciate your honesty, and accept the apology. Similarly, if there is a sudden noise or commotion outside stop and re-start when everything seems quiet and calm.

8.5 ASSESSMENT

Any talk you give may be assessed and the mark recorded. Normally two marks are given, the first for content and the second for presentation. The content is judged like any other assignment with marks being awarded for accuracy, the quality of the science and independent thought. The mark for presentation will depend on the style of delivery which includes interest, pace, quality and relevance of visual aids. If the talk is to be assessed then ask your teacher what particular points will be looked for.

SUMMARY

This chapter offers advice about preparing and giving a talk.

The key points are:

- remember the audience and use them—let them govern your pace of delivery
- thorough preparation is essential—if you have planned and organized the material well, this will help you give a good talk
- have good visual aids and use them to full advantage
- talk from notes not a script
- on the day double-check everything is ready, and stay calm!
- if the talk is assessed, ask how the marks are being allocated.