Presentation and Publication Skills: How to present a paper

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ABSTRACT

Presenting a paper to a small or large audience should match both the knowledge level of your audience and the title and abstract you submitted to the conference. Your slides should give context to your work. Simpler slides and talks are easier to follow than a highly complex presentation. You must keep to the time scheduled for your talk and remember to Keep It Short and Simple (KISS). Your slides should be readable from the back of the room by keeping them simple but informative. Practice the talk (preferably with an audience of your colleagues) and be prepared to amend as necessary. Know your talk *"by heart"*, so you can relax and enjoy the experience.

Learning Objectives

After reading this paper, you should know:

- How to write and give a talk or present a paper to any professional group.
- How to write and give a talk or present a paper in English to an ESPEN audience.
- How to match the style of the talk to the level of the audience.
- How to improve in two areas – from poor speaker with poor slides to good speaker with good slides.

Key Messages

This paper will highlight the following:

- You know your topic much better than your audience.
- Consider your audience.
- Understand your objectives and make sure you achieve them.
- Minor details can make a large difference to the quality and impact of your presentation.
- Although English is the language of most international conferences, it may not be yours, but this is not a huge problem.

Introduction

When you finally received funding to perform your super-interesting research, completed all the work, and have the results you were hoping for, you now come into the phase to convince your peers that it is indeed a good and interesting research topic. Besides publishing your work, you need to present your work at meetings. This requires other skills that we will discuss here.

How to write and give a talk to any professional group

The paper you present to your research-group "journal clubs" or to a plenary session of ESPEN, is the life-blood of science. It is part of the process by which science progresses. Karl Popper described this process as the *"unceasing and relentless criticism of the assumptions behind hypotheses"*. In other words, when you present a piece of empirical research it will be criticized and questioned by members of the audience who will want to know more about what you measured and how you did it. Even if your paper is only a review of a larger topic there will always be disagreement and it is important to recognize that the questioners are not being disagreeable but are curious. They want to know more.

This paper will help you to plan your talk to a large or small audience. At most scientific meetings, including the ESPEN Annual Meeting, talks are given in English which is not the birth-language of most speakers and audience members. This is a problem for some non-English speakers but it can be overcome. Some people are also naturally better than others at giving talks or presentations. Minor details can make a large difference to the quality and impact of your presentation. Let's start by thinking about what you want to achieve, and how to make sure your presentation meets these objectives.

How to match the style of the talk to the level of the audience

Consider the knowledge level of the audience. In small, focused, specialist meetings, nearly everyone in the room will understand the jargon and abbreviations which are used. The audience is likely to understand the relevant technical terminology and you can therefore take short-cuts. In a large, broad-focused conference, the audience is less likely to understand topic-specific terms and abbreviations. You can use jargon and abbreviations, but many of the audience may have little idea what you are talking about. Therefore, it is good practice to limit their use. If you must include certain jargon and abbreviations, please make sure they are well defined in your talk. You will need to tailor your talk so that these members of the audience leave saying *"That was good, I really understood the topic".*

The key features of a good talk

A good talk has parts which can be seen easily and parts which are invisible. Firstly you, the speaker, should remember the acronym *"KISS"* (Keep It Short and Simple) so that the audience can keep up with you. If you lose their attention, then the talk will have been a failure. It is important to keep to the allotted time. This is because if you don't, the chairperson may cut you off, and that is very embarrassing. It is also courteous to stick to time because in the packed conference programme timetable, there is a queue of speakers behind you and the audience probably wish to leave in time to get lunch and talk to their colleagues. From a different perspective, while working with a tutor who gave my children regular speech and drama lessons I learned several key techniques that have improved my professional presentations. First, I had to aim to be heard, and then aim to be heard, and then aim to be heard. Speakers who turn towards the screen and mumble will lose the attention of their audience. The second thing I learned was to stand straight and speak using my diaphragm

and belly to push the words out. The invisible bits of the talk are the amount of preparation which went into the talk and the amount of practice. The famous Polish pianist, Ignacy Jan Paderewski is said to have remarked on one occasion, *"If I miss a day of practice, I notice it; if I miss two days, my wife notices it; if I miss three, the public notices it".* So, the invisible keywords are "*preparation, preparation, preparation*" and *"practice, practice, practice"*

How to structure the talk

Nearly all talks or paper presentations follow the structure: Outline, Introduction,
Main body, Conclusion.

To put it another way *"Say what you are going to say, say it, then say you have said it".* You should give definitions early in the talk and repeat them if necessary. So, if you are describing the 267-amino-acid-long polypeptide precursor pre-pro-opiomelanocortin (pre-POMC) and its derivative peptide hormones (N-Terminal Peptide of Proopiomelanocortin [NPP, or pro-γ-MSH], α-Melanotropin [α-Melanocyte-Stimulating Hormone, or α-MSH], β-Melanotropin [β-MSH] & etc), then it is worthwhile repeating your definitions in shortened form in your talk to remind the audience. Decide the heading of each slide before writing text or adding figures. In fact, the slide heading could be a summary of the content of the slide. I find this is a wonderful discipline to help produce highly focused talks.

Your talk should progress in a logical order so that the audience can follow it more easily and guess where the topic is going. I have never yet spoken to an audience which contained genuine mind-readers. Lastly, sections should flow naturally into each other, using linking phrases to maximize continuity. The linking comments could be a summary of the section you have just finished. My colleague, Professor David Silk was famous during practice talks, for jumping up and shouting *"Link, link, link"* between topics! What he meant was that you are trying to help your audience keep track of the developing story.

How to plan your talk and why helpful colleagues are essential to this process

Until you are very experienced, extremely famous, and can give a talk with 5 minutes prior notice, you will need help. A practice-run with colleagues will help you adjust the talk so that it is the right length, has a nice logical flow, and has no horrible slides. Ensure that the talk matches the title and abstract submitted. Prepare slides that give context to your work and are suitable for the expected audience.

Practicing the talk with colleagues and an assessment proforma

Practice the talk under conference conditions with a formal chairperson who is visibly keeping time. Whilst your kindly colleagues may make allowances for you, the experience of speaking to 1,000+ people in an auditorium is quite different. At University College London (UCL), we use an assessment for free for student presentations. This is on the last page of this document. The UCL setting is that English is not the first language of many of the students and we provide training sessions with actors to help develop presentation skills. The proforma is a marking scheme which covers the totality of the presentation. Some of the LLL students may find this helpful in refining their talks.

References in slides

Make sure you reference appropriately throughout the presentation. References enable members of the audience to look up the papers you cite after your talk. The important thing is that the audience can write the citation accurately and quickly. Which of the following citations will work best, in your opinion? Why is it the best? An alternative is to list references at the end of the talk. Is this a good idea? What are its advantages and disadvantages? The context of this is changing with new technology. Whereas I was trained to write concise and swift notes in a notebook (so would favor d. or e.), I also now photograph slides so a DOI can be equally informative.

a. Chaddock, L., Neider, M.B., Lutz, A.; Hillman, C.H., Kramer, A.F. Role of Childhood Aerobic Fitness in Successful Street Crossing, Medicine & Science in Sports & Exercise: April 2012 - Volume 44 - Issue 4 - p 749-753. DOI: 10.1249/MSS.0b013e31823a90cb
b. Chaddock et al. (2012). Role of Childhood Aerobic Fitness in Successful Street Crossing, Medicine & Science in Sports & Exercise 44 (4):749-753
c. Chaddock et al. (2012). Med Sci Sport Exer 44 (4):749-753
d. Chaddock et al. Med Sci Sport Exer 2012
e. Chaddock et al 2012

Things to consider in designing your talk

1. Avoid "slides mania", which can be completely counter-productive

People with dyslexia, dyspraxia and/or color blindness have difficulty resolving text on screen. Better to use dark gray on a pale background in preference to black text on white. Try to avoid using color to emphasize points as 1/3 males are color blind to some degree. Use underlining to emphasize points. Only use colors which are clearly differentiated from the background. Use animations sparingly because they can be very annoying if they are too "energetic". Keep it simple and, if necessary, use several identical slides to which something is progressively added in the succeeding slides. With 5 identical slides, work backwards and remove 1 item from the preceding slide. If you must animate a slide, make sure it works and in the right order! Avoid the use of complicated images of which you will use only a small part. A simpler diagram will make the point more forcefully and in a less distracting way.

2. Recognize the deep similarities between acting and giving a talk

The first scientific conference talk I gave was in 1977 and I memorized it beforehand whilst using 100 x 150mm index cards as simple 10-word prompts. I used the same technique to give my wedding speech in Italian to a partly Italian audience, despite speaking no Italian. Both talks were very successful. Public speaking is like acting in a play. The important thing is to be heard so that the audience understands the acts in your play. Acting is an art and is artificial but is effective. You need to learn some acting skills to help your audience understand the drama of science. You shouldn't be dramatic though because that does not work well in the academic idiom.

3. Plan to look and sound good on stage

Dress smartly and try to engage with the audience. Smile, when you speak, look to the left and to the right and look at the people at the back and front of the room. You may remember that President Barack Obama used that technique in all of his speeches (interesting or boring) to great effect. The audience cannot see your inner terror. Give a professional talk and avoid the use of scripts or detailed notecards (i.e., learn your script). Be 'pointer aware', that is don't point it at the audience. Try to control wild tremors by, if necessary, leaning on the podium to support your arm.

The aim should be to inspire confidence in the paper being presented. The audience should be watching and listening to you, not just staring at the screen.

4. Communicate simply and effectively with your audience

Change your slides at a rate of ~1 slide/minute. This means a 10-minute talk has ~10 slides. Allow time for explaining complicated slides and pause after major points to allow the audience some time to catch-up. Do not go over time because:

(1) audiences get restless and lose interest in you

(2) it does not allow time for questions

(3) the chairperson may cut you off

Do not race through your slides. If you think you are going to overrun – omit slides instead.

5. Avoid common mistakes

Face the audience and not the screen. You want the audience to hear you so that you are not hiding from them. Do not read the slides but learn your talk instead so that the slides become an *aide memoire* instead of a life-raft in a stormy sea for a nervous presenter. Do not chew gum and do not shuffle / twitch / sit or lean (unless you need to steady a laser pointer). Lastly, do not tell jokes. They are never as funny as you think, and they may translate to bad effect in other languages. All these factors can distract the audience, and they may lose interest in your presentation.

6. Track time and what to do if things go wrong

If you find yourself in a situation where you have misjudged and will exceed your allotted time then don't panic. It is embarrassing and indeed, several speakers I know have done this, but it is not the end of the world. You should mention the fact and then skip slides to make up time to finish well.

Examples of slides which are terrible

When presenting this topic, I give examples of slides which incorporate the worst practices. They are truly terrible because the attempt to be too "clever" with the medium can be completely counterproductive. These are summaries of some of those examples.

A. The slide was packed with pulsating images and random animated icons (e.g. arrow, eyes, flames). The effect was humorous.
B. A yellow font on a bright-green background was hard to read, but pink would have been worse.
C. A 12-point font will enable you to pack 220 words onto the slide, but it will be hard for the audience to read. If they manage to read to the end of the slide, they will have long since stopped listening to you. The following simple steps will make your slides more accessible. Use a sans serif font (Verdana, Arial, Calibri – but not Times New Roman or any *Script text* and avoid Wingdings ☹☺✌. Most railway Metro systems use sans-serif fonts because they are easy to read (https://blog.prototypr.io/typography-on-the-subway-a-trip-around-the-world-463788a76a57) and the oldest of these can be found on the **London Underground**. Make the text large enough to read from the back of the room (18 points or

larger). Avoid italics and bold type, underlining is clearer. Check for errors if you wish to avoid audience laughter.

D. Each slide was a talk in itself and contained sections on pharmacology, toxicology, metabolism, intestinal physiology, and a quote from someone famous. KISS!
E. In one conference, the speaker had used animated silver sausage-shaped text boxes which flew in from left or right, top or bottom. It took several minutes for the audience to stop laughing hysterically.

Postscript

I have given hundreds of talks, papers, and lectures during my scientific career since 1972. They have been at all levels from first-year medical students to specialist, invitation-only conferences. They have not all been successful and I still blush at the thought of a few. However, in this field there is no sweeter feeling than to give a lecture and be complimented on it by a distinguished fellow-scientist in the audience. Similarly, when students say *"he explained some complicated topics in an understandable and interesting way"* then I know I have hit the target. Just think of the alternative! So, these are the upper and lower calibration limits of my speaking career.

Summary

Whether you are presenting a paper to a small specialist group or to a large audience make sure that your talk matches both the knowledge level of your audience and the title and abstract you submitted. Prepare your slides in such a way that they give context to your work, and are suitable for the expected audience. Simple slides and explanations are easier to follow than a highly complex presentation. You must keep to the time scheduled for your talk and remember to Keep It Short and Simple (KISS). Make your slides so that they can be clearly read from the back of the room and keep them simple but informative. Practice the talk (preferably with an audience of your colleagues) and be prepared to amend as necessary. Practice some more with the final version so that when you give your talk you know it *"by heart."* Then, you can relax and enjoy the experience. Detailed instructions are given in the notes above and in this speaker's presentation.

References

The Write a Scientific Paper (WASP) course has published its materials extensively, mostly in the journal, Early Human Development.

1. Grech, V. & Cuschieri, S. 2018. Write a scientific paper (WASP) - a career-critical skill. Early Hum.Dev, 117, 96-97
2. Grech, V. 2018b. WASP (Write a Scientific Paper): Presenting scientific work. Early Hum.Dev, 125, 49-50
3. Grech, V. 2018a. The application of the Mayer multimedia learning theory to medical PowerPoint slide show presentations. J Vis.Commun.Med, 41, (1) 36-41

These older papers on how to present your findings at a meeting or conference are excellent and unclouded by technical issues of best slide practice. Lashford's paper is particularly helpful, especially for dealing with difficult questioners.

4. Hawthorn, P.J. 1989. Presenting a paper. Nurse Educ.Today, 9, (2) 129-134
5. Miracle, V.A. & King, K.C. 1994. Presenting research: effective paper presentations and impressive poster presentations. Appl Nurs.Res, 7, (3) 147-151
6. Lashford, L.S. 1995. Presenting a scientific paper, including the pitfalls. Arch Dis Child, 73, (2) 168-169

These websites explain how to design good slides which are accessible to visually impaired people.

How to create more accessible slides (UCL website)

How to create more accessible slides (Microsoft website)