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978-0-521-74103-3 - Presentation Skills for Scientists: A Practical Guide

Edward Zanders and Lindsay MacLeod

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Presentation Skills for Scientists: A Practical Guide

Scientists are rarely given formal training in presentation skills and yet are often called upon to present the results of their research. This book provides a practical guide to the creation and delivery of scientific presentations, whatever the topic. Its practical “how-to” style leaves discussion of the background psychology of public speaking to others and focuses instead on the issues that are of immediate concern to the busy scientist. The text covers all of the important aspects of scientific presentations, ranging from audience awareness to handling questions. Links are included throughout the text to the accompanying DVD, which contains annotated video clips of speakers delivering a talk, and demonstrates the common problems found with many presenters, as well as the exercises designed to overcome them. Image files of different slide layouts, colour schemes and font styles demonstrate the design issues that one must consider when creating visual material.

Edward Zanders is Managing Director of ScienceInform Ltd, a training company for people involved with the research-based pharmaceutical and biotechnology industries. He has over thirty years’ experience as a biomedical research scientist in both academia and industry.

Lindsay MacLeod is a highly experienced London tourist guide, and taught presentation skills to London Blue Badge guides for fifteen years. She is a member of the Institute of Tourist Guiding, the government approved body that sets standards for tourist guides.

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Preface

If surveys are to be believed, for most people formal public speaking is worse than bereavement; literally a fate worse than death. Pity then the practising scientists who have to plan and execute complex experiments, interpret the results, write them up for publication and then talk about them and answer questions in front of their peers. There is no choice in the matter, so they have to be able to plan a presentation, design their own visual material, speak clearly and confidently and be in control. Some people enjoy this challenge and have an instinctive ability to communicate information to audiences. Others find this particularly daunting and let themselves down through nervousness, poor voice control or by producing confusing slides that fail to convey a clear message. Most scientists know if they belong to the second group of people and most do want to improve their performance. This improvement can be achieved by every speaker, regardless of personality, but requires practice and attention to detail. The result will be a more confident speaker who can convey enthusiasm and authority without necessarily having an extrovert personality.

This book and associated DVD-ROM are designed as a practical guide to scientific presentation that busy scientists can refer to without having to absorb large amounts of theory and background to verbal communication. It is based on a course that we have delivered to technicians, PhD students, postdoctoral fellows and business development managers in Cambridge and elsewhere in the United Kingdom. Apart from receiving instruction in preparing and delivering scientific talks, each delegate is filmed delivering a short technical presentation and the recording is played back to them. Over the years we have learnt a great deal about the specific problems with scientific presentation and how these problems can be addressed. We therefore decided to pass this knowledge on to others in the form of this book and the DVD-ROM that contains realistic presentation scenarios and helpful exercises.

The authors have used their different professional backgrounds in a complementary way; Lindsay MacLeod covers the “soft skills” required for all public speaking, drawing on her many years of experience in

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training Blue Badge guides in London, and over twenty years of regular presenting. Ed Zanders covers the skills required to process and deliver scientific data to an audience in a short period of time. He brings over thirty years' experience as a practising scientist and has studied many hundreds of presentations from junior scientists up to Nobel Laureates; he has also delivered many of his own talks in the UK and abroad.

The book is presented in a compact format, enabling the speaker to carry it in a case or handbag, perhaps en route to a conference or seminar venue; the enclosed DVD-ROM can even be used on the road or at the conference. We envisage this being particularly useful for last-minute practice of the exercises to control nerves and enhance vocal modulation.

The chapters are laid out as components of a flowchart to cover the most important aspects of scientific presentation systematically, ranging from audience awareness through to handling questions. Although the text can be referred to on its own, the material on the DVD-ROM provides detailed practical help in the form of slides and video clips and is a critical part of the publication. The DVD-ROM includes a PowerPoint presentation on a biomedical topic to illustrate effective and poor delivery styles for native and non-native English speakers. It also includes demonstrations of exercises designed to assist in developing a clear modulated speaking style. Finally, we have included a checklist at the end of the book covering the key points that have to be addressed before giving a presentation.

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We acknowledge Cartoonbank.com for the use of the New Yorker Cartoons in the book.

The Y chromosome figure for the slide theme example is reproduced by kind permission of Nature Publications.

We thank Professor Jane Gitschier (University of California San Francisco) who inspired the idea of creating an example talk around a fictitious gene on the Y chromosome, the OOPS gene.

Finally, we thank our families for their support and encouragement.

Introduction

Background to scientific presentation

A scientific presentation is normally a formal communication of information to an audience at a conference, seminar or laboratory meeting. The majority of talks describe the background and design of experiments to increase knowledge of a particular scientific phenomenon. Then the results of these experiments are delivered, as well as the conclusions that can be drawn from them. The conclusions drawn from these experiments and the data that support them are almost always the most important pieces of information that can be communicated to an audience of fellow scientists. Presentations are therefore a showcase for your work, or that of your institution. How well you deliver scientific information depends on a number of factors; these include control of nerves and voice, as well as creating visual media that convey information clearly in as short a time as possible.

As a scientist, you are often too busy to think about the deep-seated motivations that drive your work and the way that you present it to the outside world. Maybe you are too tied up with the exhilaration of making new discoveries; alternatively (and more frequently for most scientists), you suffer from the frustrations of failed experiments or having to deal with non-scientific issues such as raising money and dealing with lab politics. Success, when it comes, however, makes these frustrations irrelevant; the only feeling now is one of wanting to publish the results and present them at meetings. The main reward for this success is one of appreciation by one's scientific peers, be they colleagues or competitors. This is one of the main motivators of the practising scientist and must not be underestimated. It is true that other motivations exist, for example to help humanity by discovering new medicines to cure disease, but these drivers often take second place to simple curiosity and interest in solving problems. A consequence of all this is that you as a scientist are primarily interested in hard data. If you read a published paper, you want to examine the results in fine detail. If you hear a talk on a subject that is relevant to your work, you want to see the data.

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Most scientists do not have the time or inclination to think about how the features that make a particular talk effective may be identified and used to advantage in their own presentations. It is, however, worth making the effort to identify your key behaviours that can be enhanced or reduced as appropriate. Such insight will lead to improvements in your own delivery and avoid your being lost in the crowd of speakers who deliver indifferent talks.

The main components of any verbal communication are delivery, speaker appearance and content. According to surveys, content makes by far the least impact on an audience. Can this really be the case for scientific presentations as well? After all, experimental data are the currency with which science operates. Perhaps it depends on the relationship between the speaker and audience. If a competitor is showing results from experiments that you have done, or were planning to do, then poor delivery and speaker appearance might not be so important; this is because all that matters now is the data. This is a familiar situation, particularly for the younger scientist who is under pressure to publish original experimental work. The adrenalin flows, not just in the speaker, but in the recipient who is anxious not to be scooped, or has been given exciting new ideas to explore. This is not, however, a recommendation to ignore delivery and presentation. A seminar describing a major new finding in immunology comes to mind; the data kept the audience engrossed, but also agitated, as the speaker was monotonous and boring. In fact, these last aspects remain in the memory for nearly three decades, long after the data were forgotten!

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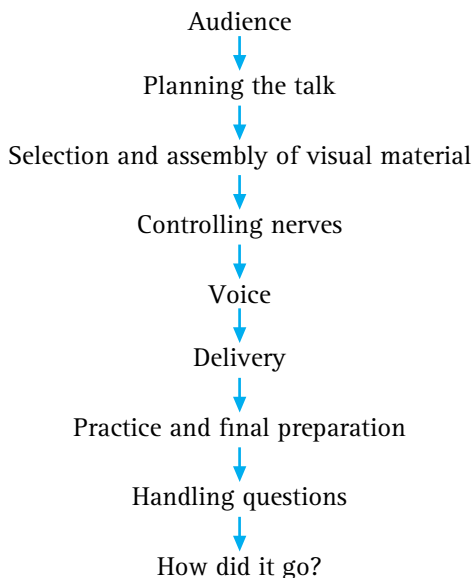
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The presentation flowchart

The following flowchart covers the key elements of a scientific presentation.



If you want to deliver a successful talk you need to review each chapter thoroughly (and the DVD-ROM material) so you can answer the following questions:

Is the material

Tailored to the right audience?

Well constructed with a clear theme and take-home message?

Supported with clear visual material?

Delivered clearly without nervous distractions?

Are the questions handled professionally?

A note on using the DVD-ROM

The following chapters contain background material and basic guidelines for preparation and delivery of scientific talks. The DVD-ROM that comes with the book contains video, text and images designed to illustrate specific topics and to provide exercises for controlling nerves and enhancing delivery. We have placed the *DVD-ROM* logo in the text where there is relevant material on the disc and have specified the files that can be accessed through the main menu.