



# Preparing and Presenting Technical Information

An Online Continuing Education Course for Engineers

**Course Number: PD-2004**

**Credit: 2 Hours / 2 PDH / 2 CPD**

# **Preparing and Presenting Technical Information**

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## **1.0 Course Overview**

This course takes you step by step through the process of preparing and delivering a clear and lucid technical presentation at scientific and professional meetings. The guidance provided is also applicable to the preparation and delivery of less formal presentations, such as those given in the form of internal company reports to corporate executives or as lectures prepared and delivered by professors or graduate students at colleges and universities.

The course starts by suggesting that you write answers to ten fundamental questions. Your answers to these questions will guide you through the preparation of the first draft of your presentation. The course then progresses by providing you with specific suggestions that will assist you through the preparation of the introductory section, the body and the conclusion section of your presentation.

The preparation phase of your talk will take you step by step through the recommended rehearsal sessions that will help you practice your delivery skills. In that section of the course you will also learn that speakers have limited time to communicate their message in a clear and concise fashion. Indeed, your job during the delivery of your presentation is to scan and pay attention to your audience in order to adjust your talk and be able to transfer your knowledge effectively. In preparing for the event, you are also prompted to anticipate and prepare for unforeseen circumstances that may arise so you can handle them with ease when they occur. By familiarizing yourself with the content of your presentation and rehearsing repeatedly ahead of time you will most definitely improve your performance when you finally deliver your talk.

An appendix, at the end of the course, provides you with suggestions on how to prepare clear and concise visual aids. Your illustrations should be simple and clear, colorful and easy to read. Each illustration you prepare should be checked against these simple guidelines to ensure that it will capture and hold the attention of your audience.

## **2.0 Specific Knowledge Gained**

This course is aimed at those persons who are not skilled presenters and are uncomfortable in unfamiliar situations. It will also help those that are disorganized and whose presentations tend to lack focus. It will also assist the persons who have a monotonous presentation style, do not adjust well to their audiences and are unprepared to answer hard questions, may be nervous, or are even scared to speak in public.

In this course you will learn:

- How to organize your content into easy to remember sections
- How to keep your message short and to the point
- How to make your visual aids graphically interesting and easy-to-read,
- How to go about practicing and rehearsing effectively
- How to concentrate and focus your attention on your audience
- How to handle the question and answer session and keep it under control

When you follow the simple suggestions presented in this course, your presentation will achieve its ultimate goal of connecting you with your audience, holding their attention throughout and helping them remember your message long after your presentation is over.

### **3.0 Introduction**

Although this course addresses the techniques for giving an oral presentation at scientific and professional meetings, the material is equally applicable to the preparation of less formal presentations given to smaller groups. Whether giving a presentation to a large audience or speaking to a smaller group, it is important to realize that the key to success is to plan carefully for the event well ahead of time. When the day finally comes you should feel well prepared and confident of being able to give a memorable performance. It goes without say that careful prior planning and diligent rehearsing for the event will always improve your final presentation. Attentive and persistent preparation and rehearsal is the key to success.

Many presenters of technical information usually believe from the onset that their material is downright too complicated, uninspiring and lacks general interest. This perception is reinforced by some companies that tend to perpetuate this myth when they impose a rigid structure on how the material is presented by their staff at public meetings. For example, some companies require their staff to stand behind the lectern and adhere to the written message during the entire duration of the lecture. As will be explained in this course, however, there are new horizons that open up for those who are willing to depart from this rigid model in order to make their presentations enjoyable and a positive learning experience for their audience.

### **4.0 The Starting Point**

Giving an effective presentation requires careful planning and a lot of practice well before the talk is given. As a starting point, I will assume that the research or investigation that you are presenting has been completed and that you intend, or have been asked, to communicate your findings at a major technical meeting. In order to prepare a lively and engaging presentation you should begin by assembling and reviewing your material and consolidating what you will be covering in order to come up with the few well-chosen conclusions you want to impart. Begin by asking yourself what

you aspire to accomplish at the end of your presentation and then write down your answers to the following set of questions:

- Who is your audience?
- How much do they already know about your subject?
- How do you plan to hold their attention?
- What objective are you setting for yourself?
- How much time you have for your presentation?
- What are the main points you hope to communicate?
- What you want your audience to remember after your talk?
- What audio-visuals would work best for you?
- What questions your audience is likely to ask?
- What is the setting for the presentation?

Once you have answered these questions, you should have identified the major parts of the talk you plan to give, and the ideas you intend to communicate. This is basically the framework of your presentation. If you cannot formulate your thoughts in a set of simple and clear statements, then that is a sure sign that the content of your presentation is deficient and needs to be re-formulated.

## **5.0 Preparing your Presentation**

Start by stating your message or purpose in a single sentence and then list the supporting arguments you intend to present in order to support your message. You should not advance more than a handful of arguments in support of your position otherwise your audience will have trouble following you. If you need to cover more than a handful of arguments, then you should plan for a follow-up presentation. You should also avoid the impulse to tell your audience all you know about your subject, which is a sure way of losing them for good.

Keep in mind that your main objective is to gain the attention of your audience. Think about the type of introduction that you will use in order to rivet their attention. Explain why you think the topic you are presenting is important to them and introduce the core of your message. You can use a story, a fact, a comparison, an example, a quote, an illustration, a cartoon or other appropriate analogy. Use a different approach to illustrate each point you will make in order to reach as many people in your audience as possible. Remember also that writing differs from speaking. Writing and speaking are not totally unrelated skills, but are very different skills that need to be mastered independently. The following figure contrasts the distinction between information presented in a written document and during an oral presentation.

<b>Distinction Between a Written Document and an Oral Presentation</b>	
<b><u>Written Document</u></b>	<b><u>Oral Presentation</u></b>
• Can cover multiple topics	• Has to focus on core message
• Can be read over and over	• Has to grasp message as first heard
• Can build up slowly to make a point	• Has to gain audience attention
• Can use numerous examples	• Has to make few powerful points
• Can use complex sentence structure	• Has to use a conversational tone
• Reader and author are not connected	• Has to connect with audience

Figure 1: Distinction between information presented in a written document and during an oral presentation

After writing down the first draft of your presentation, you should review it and pay special attention to how the words will sound when they are spoken. Reading the written words is not an acceptable substitute, and should not be considered as an option. You can start by recording what you have written and practice listening to the tape to make the necessary adjustments. There are no extra spaces or silence in the written record. On the other hand, pauses for breathing and rest are an integral part of imparting a verbal message. Do not hesitate to have someone else read your presentation back to you so you can hear how it sounds. Do not give a presentation you have not heard how it sounds. Your goal should be to maximize the rate of information transfer to your audience. Organizing your presentation into three separate sections helps you accomplish this goal. The three sections are:

- *An Introduction*: this is your opening salvo and you should use it to gain the attention of your audience. Present your core message and explain what the problem is. Indicate why your topic is important and what the solution to the problem is.
- *A Body*: this is where you offer and present your main arguments in support of your core message. Convince your audience that your approach to problem solving is appropriate and call for their support and buy-in of your findings.
- *A Conclusion*: this is where you restate your core message, provide a summation of your key points and tell your audience what you want them to remember.

## 5.1 The Introduction Section

In your introduction you should present the subject matter that will be covered in your talk. This is the place to state the problem or reason for performing your research or investigation in the first place. It is important for your audience to have a clear idea of why the work was undertaken. This is akin to setting the stage for what will follow.

Another function of the introduction is to give a preview of the presentation itself. Topics such as the scope and milestones should be outlined here. In a sense, the speaker is providing his audience with signposts to enable the listeners to anticipate the upcoming flow of information.

Acknowledgements to helpful personnel, organizations, and funding agencies, are appropriate to include in this part of your presentation. Doing so at this point will allow you to reserve your conclusion for making a strong and memorable statement about the results of your work.

## **5.2 The Body of the Presentation**

To start with, you can safely assume that your audience is only familiar with the title of your talk. Beyond this minimal assumption, the rest of your talk is all yours to bring to life. Do not hesitate to repeat the major subject of your talk within the body of your presentation, even if you already alluded to it in your introduction. Familiarity, in this context, leads to understanding. Remember also that the body of your talk ought to follow the course you laid out in your introduction. If you deviate significantly from that path, you will confuse your audience.

Any discussion of method used and data collected belongs to this section of the talk and should be directly related and relevant to your final conclusions. You may have bits and pieces of information that you consider interesting and wish to impart but remember that these are non-essential and distracting elements. You should always present your methods and data simply, clearly and in sufficient detail to support your concluding statements.

Clear statements delivered in a conversational tone and at a reasonable clip are the essential ingredients of good communication. Keep in mind that the audience cannot refer back to your earlier statements. So, if need be remind your listeners every now and then of the important points they have just heard. Do not force your audience to follow the development of your thoughts without a clear idea of where you are going.

## **5.3 The Conclusion Section**

In most cases you will find out that the audience is more interested in your conclusions than in any other segment of your presentation. If you structured the presentation of your methods and procedures to lead you smoothly to your conclusions then your audience would have been led through a coherent and understandable path that has been easy to follow.

Remember also that you are doing yourself and your audience a favor by limiting the number of your conclusions. In this respect, quality and not quantity should be the guiding principle. Few well-documented conclusions will make a greater and lasting impact on your listeners. A well-crafted summary hopefully repeating and paraphrasing what you already said for the third time will nicely round off your presentation. The conclusion section of your talk is akin to the cool-down segment of a strenuous and well-balanced physical exercise program. Your object is to ensure that your audience will remember the few points that you made and will retain them for a long time after hearing your presentation.

### 5.4 General Guidance

For general guidance, and as shown on the following figure, your introduction should consume no more than 15 to 20% of the total allocated time for your presentation. The central body of your presentation should consume about 55 to 65% of your total allocated time. Finally, your concluding section should consume the remaining 20 to 25% of your total allocated time.

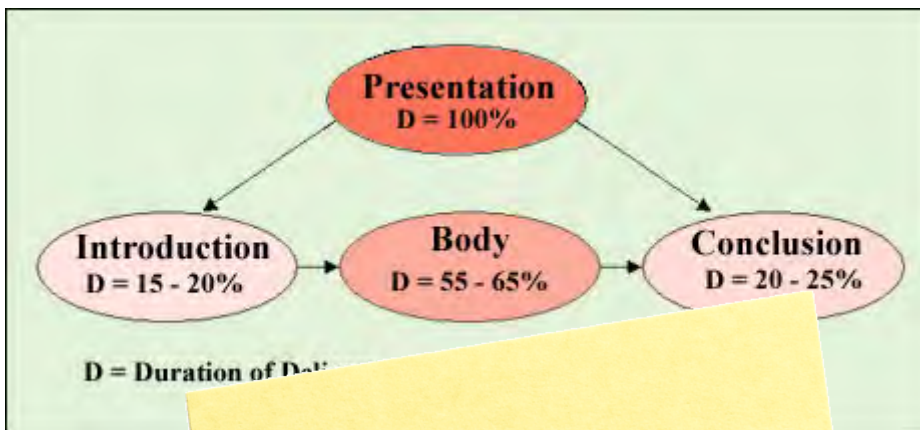


Figure 2: Recommended structure for your presentation

For example, as a 15-minute presentation, you should take 17 to 20 minutes to wrap-up. By following these guidelines you will be able to complete the expiration of your presentation within the 15-minute time frame. You should then take about 6 to 8 minutes for your conclusion. By following these guidelines you will be able to complete the expiration of your presentation within the 15-minute time frame.

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### 6.0 Practicing

Whether you are a seasoned presenter or a beginner, rehearsing your presentation is essential to your performance. To get ready, you should practice your presentation in front of a mirror, and then in front of a smaller group, who can give you some feedback.