How to Give a Bad Talk

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Circa 1983

Ten commandments (with annotations gleaned from Patterson's talk by Mark D. Hill):

I. **Thou shalt not be neat**

Why waste research time preparing slides? Ignore spelling, grammar and legibility. Who cares what 50 people think?

II. **Thou shalt not waste space**

Transparencies are expensive. If you can save five slides in each of four talks per year, you save $7.00/year!

III. **Thou shalt not covet brevity**

Do you want to continue the stereotype that engineers can't write? Always use complete sentences, never just key words. If possible, use whole paragraphs and read every word.

IV. **Thou shalt cover thy naked slides**

You need the suspense! Overlays are too flashy.

V. **Thou shalt not write large**

Be humble -- use a small font. Important people sit in front. Who cares about the riff-raff?

VI. **Thou shalt not use color**

Flagrant use of color indicates uncareful research. It's also unfair to emphasize some words over others.

VII. **Thou shalt not illustrate**

Confucius says ``*A picture = 10K words*,'' but Dijkstra says ``*Pictures are for weak minds.*'' Who are you going to believe? Wisdom from the ages or the person who first counted goto's?

VIII. **Thou shalt not make eye contact**

You should avert eyes to show respect. Blocking screen can also add mystery.

IX. **Thou shalt not skip slides in a long talk**

You prepared the slides; people came for your whole talk; so just talk faster. Skip your summary and conclusions if necessary.

X. **Thou shalt not practice**

Why waste research time practicing a talk? It could take several hours out of your two years of research. How can you appear spontaneous if you practice? If you do practice, argue with any suggestions you get and make sure your talk is longer than the time you have to present it.

Commandment X is most important. Even if you break the other nine, this one can save you.

Giving a Talk

Guidelines for the Preparation and Presentation of Technical Seminars

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"Studies show that fear of public speaking ranks higher than fear of dying. I guess this means that most people at a funeral would rather be in the coffin than delivering the eulogy..." *Jerry Seinfeld*

1 Introduction

Often in your career you will be faced with the prospect of "giving a talk," that is, making an oral presentation before an audience. These notes are a collection of a few simple guidelines for preparing and delivering a "talk." The basic principles are applicable in defence of your thesis, at conferences, in giving research progress reports and the like.

These notes are intended to supplement—rather than replace—standard texts on public speaking and effective oral communication. The suggestions given here have worked well for the author and his friends; perhaps they will work well for you too!

2 The Basics

Define your message. If you have nothing to say, you cannot give an effective talk. Assuming that you *do* have something to say, it is important to identify at the outset just what it is that you are trying to communicate. Write down a short list of important points that you want to make (no more than 3 or 4). These points are often called the "take-away message," that is, the message that the audience should be receiving if your presentation is to be effective. Your entire presentation should focus on presenting the take-away message in a clear and convincing way. Guard against making your take-away message overly complex, as this will only overwhelm the audience.

Know your audience. To be effective, your talk must be delivered at a level that is appropriate for your audience. You must analyze the background and expectations of the audience to deliver the take-away message in the most effective manner. This may mean modifying the take-away message, if the concepts involved are beyond the level of your audience.

Knowing your audience, you can begin to decide how much background material is needed to deliver your take-away message effectively. Your audience will influence your choice of vocabulary (technical jargon) and may even influence how you dress!

Prepare well. The best way to give the impression that you know what you are talking about, is really to *know* what you are talking about. This means that you should understand your subject well, and be able to answer related questions. On the other hand, it is impossible for any one speaker to be able to answer *all* questions that might be asked. There is no shame in answering "I don't know" to a question that is asked—in fact, this answer is preferable to an incorrect or misleading reply, or a "stab in the dark."

Of course you must know when and where your presentation is to be held, and, if necessary, what specialized audio-visual equipment (slide projectors, videocassette recorders, etc.) is available. You can usually count on the availability of the ubiquitous (overhead) viewgraph projector. Discover that your pens are dried out before your presentation! Technical presentations invariably rely on some sort of visual aid, usually slides or viewgraphs. (Whatever they are, they will be called slides in these notes.) More will be said about preparing these later.

You should find out how long you are required to speak, and aim to have your presentation fit within the allotted time. One good way to judge the presentation time is to rehearse your presentation ahead of time. Another method is to count slides; if you know your average rate of going through the slides, this can work quite well. The author uses the "one simple slide per minute" rule of thumb; most people use fewer. Experiment to determine your own rate. If, for some reason, you find yourself running out of time, don't be afraid to skip slides.

It is a good idea to keep your slides well organized in a folder, binder, or notebook *during* your presentation. This allows for easy retrieval during the question period, when, almost inevitably, somebody will ask you to put up a slide from your presentation.

You may want to prepare three or so back up slides for anticipated questions. Such slides could present interesting details that are peripheral to the main chain of reasoning, for example. It is also handy to have a couple of blank slides around, so that you have something to write on when have to explain something not covered on your other slides.

You might want to practice your presentation at least once before a friendly (or simulated unfriendly) audience a couple of days before your presentation. Talking to a mirror can also help, but even better is a tape recorder, since you can play it back and hear yourself as others will hear you.

3 Delivering Your Presentation

Tell'em what you're going say... An effective way to emphasize the take-away message is to repeat it several

times during your talk—without seeming repetitious, of course. This can be accomplished by presenting an outline of your talk at the beginning. After presenting the arguments that support your take-away message, you can recap these points at the end of your talk.

A typical outline for a talk looks like this:

- Introduction
- Point 1
- Point 2
- Point 3
- Conclusions

where points 1–3 represent the take-away message. Some speakers like to return to the outline slide after each point is covered, to show the logical progression through the talk.

The outline almost invariably contains some type of introduction as the first point. Whether the audience is a group of experts in the field or a group of novices, *all* audiences require some type of introduction to your topic. Such an introduction will attempt to place the subject of the talk into a wider context; it will also sometimes review some of the background material (e.g., history, terminology, and notation) needed to understand the talk. For an audience of non-specialists, the introduction may take up as much as half the time of the talk. Always start with what you know the audience knows, to make them comfortable at the beginning.

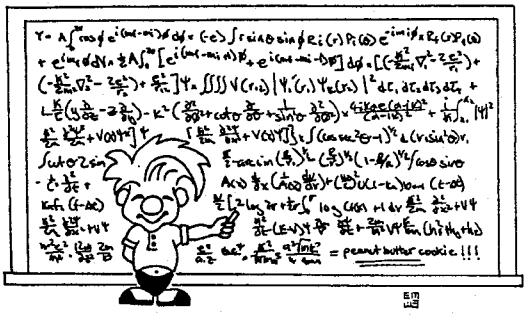
The points of the outline should be organized in logical fashion, so that point 2 follows logically from point 1, point 3 from point 2, and so forth. Try to plan the talk with an easy-to-follow story line. To catch audience attention, you can feed them interesting tidbits to be explained later in the talk.

Avoid trying to dazzle your audience with impressive looking equations or complicated lines of reasoning. Your aim should be to educate, not to impress. Even the most seasoned expert in the field will not be impressed by an unintelligible, overly detailed presentation.

Say it... Once you have placed the subject of your talk into the proper context and have reviewed the necessary background material, it is time to convey the essence of each of the points in your take-away message in an effective manner. This is where you will spend most time, but it may not be the part that the audience will remember most.

Follow your outline. Present—in the simplest way possible—the arguments that support each point in your outline. A useful rule of thumb is to use a new slide for the presentation of each new idea, or argument. More on this later.

Tell'em what you've said. At the end of your presentation, it is a good idea to recap the take-away message. The usual way to do this is to provide a summary slide, with the take-away message shown in point form. This summary will usually conclude your presentation, except in the case of thesis presentations, where it is typical to provide some suggestions for further work. If appropriate, you can invite the audience to ask questions at this point.



Avoid trying to dazzle your audience with impressive looking equations or complicated lines of reasoning.

4 Preparing Slides

One slide—one simple idea. As already stated, each slide shown in your presentation should have a simple message. It is important not to crowd too many ideas onto a slide as this inhibits understanding. Text is best presented in point form. Try for the maximum impact with the fewest words—like newspaper headlines. If you write complete sentences, you will invariably simply recite them to the audience word for word, tuning your audience out completely. Using point form on your slides, you can elaborate verbally without distracting your audience from your main message.

Avoid overcrowded "eye exam" slides. And show the whole slide at once! Covering up parts of your slide with opaque paper is no help—the audience will just get curious about what's hiding underneath, and lose track of your message.

Try summarizing each slide on a single line, e.g., in a box at the bottom of the slide, or by posing a simple question at the top of each slide. This will allow audience members with wandering attention spans to "recalibrate" themselves with your presentation.

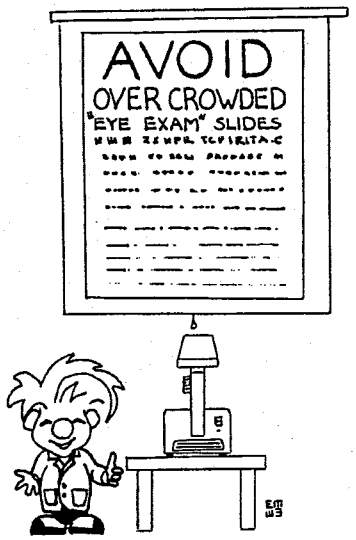
Use lots of pictures, few equations. Pictures are worth thousands of words—the more pictures you have, the better. My colleague Glenn Gulak suggests the following

rule of thumb: never, without good reason, use more than two slides in a row with no pictures.

Don't make your diagrams too complicated. Use simple block diagrams; each simple block can be expanded upon in later slides if necessary.

Graphs are the most useful way to present relationships between variables. Briefly show an equation, if you must, but spend the most time presenting graphs obtained from the equation. Similarly, graph numerical data rather than presenting numbers in tables. *Always* label the axes of a graph, and *always* explain the physical meaning of the variables being plotted, at least the first time that a graph of this particular type is shown. Try to keep the same scale and size on graphs of a similar type; this will allow for easy comparison. Avoid graphs with many different curves. Include enough curves to make your general point—you can always claim that other curves are similar to the ones you show. Use contrasting colours to separate curves, even if it means colouring a computer-generated slide by hand.

The mechanics of slide preparation. Many effective presentations can be made with hand-printed slides. The advantages of hand-printed slides are that they can be prepared fairly quickly, and without specialized equipment (i.e., you can write them on an airplane, or in your hotel room the night before your presentation). You can also easily introduce colour into your presentation. The main disadvantage is that you have to be extremely neat. If you cannot print neatly, then this method is not for you. Another disadvantage of the hand-printing method is that you might give your audience the impression that you did not have time to prepare adequately, i.e., that you wrote them on the airplane, or in your hotel room the night before the presentation.



Most computer-generated slides are prepared by photocopying printer output directly onto transparencies. (The ECE photocopy room maintains a supply of these. Just ask for them at the desk.) Slides can be prepared using your favourite word-processing package—just remember to use a large font (point-size 14 or more). Avoid too many font changes; use simple, easy to read fonts (Helvetica or another sans serif font) for headings and labels. If you use LaTeX, you may want to use the `slides` document class, a version of LaTeX specialized for slide production. Watch for unwanted hyphenation; generally, text on slides should not be hyphenated.

Figures can be hand-printed, or computer generated, whichever looks best (or is most convenient). Many of the computer drawing packages can be used to create both the text and pictures for each slide. Finally, don't forget that you can always "cut-and-paste" the different elements of a slide, each of which can be generated in the most convenient way.

5 Other Useful Tips

Relax! Try not to be nervous or intimidated by your audience. Give the appearance of calm confidence, and focus all your energy and concentration on the message in your presentation. If you are focussed on your talk and not your nervousness, so will your audience be.

Some inexperienced speakers will attempt to memorize their talk, or read it from a prepared text. One word of advice: don't! If you need to refer to a set of notes, put them in point form, not in complete sentences, or you will find yourself reading them out. The best method is to use your viewgraphs or slides as visual cues as to the points you would like to make. If you keep each slide simple—one idea to a slide—nothing will be forgotten.

At the start, determine the best place to stand so that you are not blocking the projection or somebody's view. When placing a slide on the projector, make sure that you look back at the screen to see that all is visible, and adjust the slide if necessary. It is best to point at the screen, if possible, rather than at the projector. The projector moves if you get too friendly with it. If you must point at the projector (if the screen is too far away, for example) be sure to keep the pointer steady. Also, don't fiddle with your pointer, as telescoping it in and out really detracts from what you are saying. Don't fumble with your slides. Throw away "tissue paper" separators *before* your presentation.

Remember to focus on your audience, not on the projector. Aim to speak slowly and with enough volume to reach the person in the audience who is farthest away. Look around, they won't bite, and you can see whether your points are sinking in. Interact with the audience.

Ask them if they are following you, or ask them simple questions to see if they are. Liven them up a bit.

Take control of the questions, during or after the talk. Try to steer the topic back on track, otherwise audience participation can drive things far away from the main points of the talk. Take discussions off-line if they are consuming too much time or will not readily be resolved. Feel free to interrupt debates among audience members—after all, it's *your* talk!

Humour can make a big difference, especially in dry technical talks. Try to lighten it up a bit; especially after some particularly heavy going. Cartoons can be an effective way to draw parallels with points you are trying to make. Even short verbal asides, rhetorical questions, or anecdotes can go a long way to keeping up audience interest.

Try not to be nervous or intimidated by your audience.

Learn by observation. In university, you are in a particularly good position to observe others giving presentations. Take the opportunity to learn from the mistakes that others make, and borrow (steal) techniques that you find effective. Watch carefully for methods used by your lecturers that improve your understanding. Be careful, though, that you don't pay so much attention to the medium that you lose the message.

Further Reading. There are dozens of books in libraries and bookstores that cover effective oral communication. The *IEEE Trans. on Professional Communication* is a good source of articles, especially the March 1980 "Special Issue on Public Speaking for Engineers and Scientists." Another good way to get public speaking experience of all kinds—not just technical—is to join a Toastmaster's Club.

6 Conclusions

Finally, a last piece of advice. Giving a successful talk takes a lot of effort, and more than a bit of experience. Don't get discouraged if your oratory ability is found lacking your first time out. Take seriously suggestions made by your audience, and try to improve for next time. Soon you will be an expert in the preparation and presentation of technical seminars!

Acknowledgments

Gillian Woodruff made a number of excellent suggestions that have been incorporated into this document. Thanks Gillian! I am also grateful for the comments of Glenn Gulak, Mart Molle, Rajesh Pankaj and Pas Pasupathy. Rajesh made some good suggestions for structuring the HTML version.[1] Finally, many thanks to Eric Mah, EE class of 9T3, for his great illustrations.

End Note

These notes are presented here in a rather preliminary form to which I hope to make improvements in future. I would appreciate hearing your comments on aspects of the notes that you liked or didn't like, points that you found useful or useless, and topics you would like to see omitted or included in future revisions. Send email to `frank@comm.utoronto.ca`. – *Frank Kschischang*

[1] URL=`http://www.comm.utoronto.ca/frank/guide/guide0.html`.

Criteria	0	1	2	3
Nonverbal Skills				
Eye Contact	Does not attempt to look at audience at all, reads notes the entire time	Only focuses attention to one particular part of the class, does not scan audience	Occasionally looks at someone or some groups during presentation	Constantly looks at someone or some groups at all times
Facial Expressions	Has either a deadpan expression of shows a conflicting expression during entire presentation	Occasionally displays both a deadpan and conflicting expression during presentation	Occasionally demonstrates either a deadpan OR conflicting expression during presentation	Gives audience clues to what the content of speech is about; Appropriate expression, never notice a deadpan or conflicting expression
Gestures	No gestures are notices			Natural hand gestures are demonstrated
Posture	Sits during presentation or slumps		Occasionally slums during presentation	Stands up straight with both feet on the ground.
Vocal Skills				
Enthusiasm	Shows absolutely no interest in topic presented	Shows some negativity toward topic presented	Occasionally shows positive feelings about topic	Demonstrates a strong positive feeling about topic during entire presentation
Vocalized Pauses (uh, well uh, um)	10 or more are noticed	6-9 are noticed	1-5 are noticed	No vocalized pauses noticed
Content				
Topic Announced	Audience has no idea what the report is on		Vaguely tells audience what report is over	Clearly explains what the report is covering
Time frame	Presentation is less than minimum time	Presentation is more than maximum time		Presentation falls within required time frame
Visual Aid	Poor, distracts audience and is hard to read	Adds nothing to presentation	Thoughts articulated clearly, but not engaging	Visual aid enhances presentation, all thoughts articulated and keeps interest
Completeness of Content	One or more points left out	Majority of points glossed over	Majority of points covered in depth, some points glossed over	Thoroughly explains all points
Professionalism of Presentation	Mumbles, audience has difficulty hearing, confusing	Thoughts don't flow, not clear, does not engage audience	Thoughts articulated clearly, though does not engage audience	Presentation is organized and the interest level of the audience is maintained

POWERPOINT RUBRIC

CRITERIA	1 POINT	2 POINTS	3 POINTS	4 POINTS	TOTAL
Storyboard Planning (Inspiration)	Few slides and no overview of presentation	The slides are not in logical order & have incomplete information	The slides are in sequential order and are informative	The slides are in logical order, with important information, colors, fonts, & graphics indicated.	
Subject Knowledge/Content	Subject knowledge is not evident. Information is confusing, incorrect, and flawed.	Some knowledge is evident, but some information is confusing and/or incorrect.	Knowledge is evident in much of the project. Most information is clear and correct.	Subject knowledge is evident throughout the project. All information is clear and correct.	
Introduction/ Conclusion	There is no definite introduction or conclusion.	There is an introduction but no conclusion or visa versa	There is evidence of an introduction and a conclusion.	The introduction has a sharp focus, and the conclusion is effective.	
Writing Mechanics	Many errors in spelling, grammar, sentence structure destroy content & major revision is needed	Spelling and grammar errors detract but content is understandable	The text is clearly written but a few spelling and/or grammar errors are noticeable	The text is clearly written with little or no errors to detract from content.	
Layout	The layout is unstructured, confusing, and cluttered. Does not use space correctly. The text is very difficult to read	The layout shows some structure but the space is not used well, appearing cluttered or empty. Overall readability is difficult.	The layout uses most space appropriately. Most slides are easy to read.	The layout is pleasing to the eye, appropriate to the message, and uses space well. Fonts and point size are well chosen for easy readability.	
Presentation	Spoken and visual presentation difficult to follow and understand. Little eye contact. Reads material from notes.	Spoken and visual presentation not well integrated. Some organization is evident. Some eye contact but much reading.	Integrates spoken and visual presentation. Organization apparent and appealing. Maintains balanced eye contact between audience and note cards.	Effectively integrates spoken and visual presentation. A high degree of organization, eye appeal, and effective delivery. Excellent eye contact and knowledge o subject. Does not refer to notes very much.	

Adapted from:

A+ Rubric at http://www.uni.edu/profdev/rubrics/pptrubric.html
PowerPoint Rubric at http://www.asij.ac.jp/middle/ac/lass/6no/discrimination/PowerPoint.htm
Multimedia Rubric at http://www.ncsu.edu/midlink/mm2002.rubric.htm

Oral Presentation Advice

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Things to Think About

1. **Oral Communication is different from written communication**

   Listeners have one chance to hear your talk and can't "re-read" when they get confused. In many situations, they have or will hear several talks on the same day. Being clear is particularly important if the audience can't ask questions during the talk. There are two well-know ways to communicate your points effectively. The first is to K.I.S.S. (keep it simple stupid). Focus on getting one to three key points across. Think about how much you remember from a talk last week. Second, repeat key insights: tell them what you're going to tell them (Forecast), tell them, and tell them what you told them (Summary).

2. **Think about your audience**

   Most audiences should be addressed in layers: some are experts in your sub-area, some are experts in the general area, and others know little or nothing. Who is most important to you? Can you still leave others with something? For example, pitch the body to experts, but make the forecast and summary accessible to all.

3. **Think about your rhetorical goals**

   For conference talks, for example, I recommend two rhetorical goals: leave your audience with a clear picture of the gist of your contribution, and make them want to read your paper. Your presentation should not replace your paper, but rather whet the audience appetite for it. Thus, it is commonly useful to allude to information in the paper that can't be covered adequately in the presentation. Below I consider goals for academic interview talks and class presentations.

4. **Practice in public**

   It is hard distilling work down to 20 or 30 minutes.

5. **Prepare**

   See David Patterson's How to Give a Bad Talk

A Generic Conference Talk Outline

This conference talk outline is a starting point, not a rigid template. Most good speakers average two minutes per slide (not counting title and outline slides), and thus use about a dozen slides for a twenty minute presentation.

- **Title/author/affiliation** (1 slide)
- **Forecast** (1 slide)
  Give gist of problem attacked and insight found (What is the one idea you want people to leave with? This is the "abstract" of an oral presentation.)
- **Outline** (1 slide)
  Give talk structure. Some speakers prefer to put this at the bottom of their title slide. (Audiences like predictability.)
- **Background**
  - **Motivation and Problem Statement** (1-2 slides)
    (Why should anyone care? Most researchers overestimate how much the audience knows about the problem they are attacking.)
  - **Related Work** (0-1 slides)
    Cover superficially or omit; refer people to your paper.
  - **Methods** (1 slide)
    Cover quickly in short talks; refer people to your paper.
- **Results** (4-6 slides)
  Present key results and key insights. This is main body of the talk. Its internal structure varies greatly as a function of the researcher's contribution. (Do not superficially cover all results; cover key result well. Do not just present numbers; interpret them to give insights. Do not put up large tables of numbers.)
- **Summary** (1 slide)
- **Future Work** (0-1 slides)
  Optionally give problems this research opens up.
- **Backup Slides** (0-3 slides)
  Optionally have a few slides ready (not counted in your talk total) to answer expected questions. (Likely question areas: ideas glossed over, shortcomings of methods or results, and future work.)

Academic Interview Talks

The rhetorical goal for any interview talk is very different than a conference talk. The goal of a conference talk is to get people interested in your paper and your work. The goal of an interview talk is to get a job, for which interest in your work is one part.

There are two key audiences for an academic interview talk, and you have to reach both. One is the people in your sub-area, who you must impress with the depth of your contribution. The other is the rest of the department, who you must get to understand your problem, why it is important, and a hand-wave at what you did. Both audiences will evaluate how well you speak as an approximation of how well you can teach.

An algorithm:

- Take a 20-minute conference talk.
- Expand the 5 minute introduction to 20 minutes to drive home the problem, why it's important, and the gist of what you've done.
- Do the rest of the conference talk, minus the summary and future work.
- Add 10 minutes of deeper stuff from your thesis (to show your depth). It is okay lose people outside of your sub-area (as long as you get them back in the next bullet).
- Do the summary and future work from the conference talk in a manner accessible to all.
- Add 10 ten minutes to survey all the other stuff you have done (to show your breadth).
- Save 5 minutes for questions (to show that you are organized).

Other Talks

Other talks should be prepared using the same principles of considering audience and rhetorical purpose. A presentation on a project in a graduate class, for example, seeks to reach the professor first and fellow students second. Its purpose is to get a good grade by impressing people that a quality project was done. Thus, methods should be described in must more detail than for a conference talk.

Acknowledgments

Thanks to Jim Goodman, Jim Larus, and David Patterson for their useful comments. The current on-line version of this document appears at URL
"`http://www.cs.wisc.edu/~markhill/conference-talk.html`".