Effective Presentations

ELEC 3040/ELEC 3050
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Why is this topic important?

- Employers rank communication skills #2 behind technical expertise as desired traits for new engineers
  - 20-25% of engineers’ time spent writing
  - 70-75% of time communicating
    - Reading, writing, speaking & listening
  - Good communication skills enhance professional advancement opportunities
Elevator Talk

- **Audience**: someone unknown
  - potential client/sponsor/employer
- **Duration**: 2-3 minutes
- **Setting**: informal
- **Focus**: “big picture” (no digressions)
- **Minimize**: tech details, jargon
- **Desired outcome**: gain listeners’ interest
Presentation Types (2)

- **Project Talk**
  - **Audience**: supervisor/colleagues/company officials
  - **Setting**: meeting
  - **Purpose**: share progress/accomplishments/work remaining/expected results
  - **Desired outcome**: listeners understand your project
    - More detail than elevator talk
    - Plan to address possible concerns
    - Avoid defensiveness
Presentation Types (3)

• **Conference Presentation**
  • **Audience**: technical experts (different levels)
  • **Setting**: session of several presentations
  • **Purpose**: share results, solicit feedback, initiate conversations
  • **Desired outcome**: wider audience awareness of work
    • Discuss finer points of data with audience
    • Provide handout
    • Ignore audience coming/going
Project Presentation Types

• **Project Proposal**
  • Problem analysis, requirements, specifications
  • Preliminary design options

• **Design Review**
  • Requirements
  • Proposed design and preliminary test results
  • Project plan

• **Final Review**
  • Requirements
  • Final design and test results
  • Conclusions
Oral Presentations

- Most guidelines for written documents apply
  - Consider who your audience is.
  - What do you want the audience to take from your presentation?
- Plan and practice your presentation & timing
- Use appropriate graphics
- Don’t substitute “glitz” for “substance”
  - especially distracting PowerPoint animations
- Show enthusiasm & professional demeanor
  - engagement, posture, movements, perceived comfort level
- Speak to the audience – make eye contact
  - vocal pitch, tone, volume, “place-holders” (like, um, actually, …)
- Consider, in advance, how you will answer questions
Steps to a successful presentation

1. Divide responsibilities (“team” communication)
2. Determine audience, tone, style, length, format
3. Develop an outline
4. Write a draft
5. Revise and proofread
6. Review (peer and other) & revise again
7. **Rehearse** the presentation
8. Generate the final presentation
Know your audience

- What are they interested in?
- What do THEY want from your talk?
- What do YOU want them to know/learn?
- What do (and don’t) they already know?
- What is their attitude toward me and my subject?
- What are their values?
Consider the three V’s

- **Verbal** (7%) — what speaker says
- **Vocal** (38%) — how it’s said
  - pitch, enthusiasm, inflection/intonation
- **Visual** (55%) — speaker appearance
  - eye contact, facial expressions, gestures, posture

*Opinions often formed in the first 30 seconds!*
Organization is important

- Say what you will tell them
- Tell them
  - Consider limiting number of main points
- Tell them what you told them
  - Summarize main points
Don’t:
- Speak in monotone
- Read your slides
- Look bored with your own presentation
- Use annoying mannerisms
- Use placeholders (ok, you know, like, actually, uh...)

Bueller?
Do:
- Personalize your talk (humor, quotes...)
- Speak loudly, vary your tone and pace
- Stay within your allotted time
- Make eye contact
- Ask questions

- Practice!!!
Use a very large font

40 point  28 point  18 point  12 point

• use a small number of lines per slide
• key words & phrases rather than sentences
• proofread for spelling!
• go easy on the equations
• don’t overdo color
Effective Visuals

Help the audience visualize what you are trying to describe

1. Good visibility
2. Simplicity
3. Manageability
Make figures audience-friendly

Can you comfortably read these diagrams?
Example of a bad plot

temporal flux vs Plinth Setting for different power inputs

A lot of wasted space
Example of an improved, but still poor plot

Temporal Flux Comparison

Temporal Flux (Tachyons/cm³)

Input Power (W)

K1(P1=16)
K2(P2=18)
K3(P3=20)
Example of a better plot

Temporal Flux Comparison

Power Feed (GW) vs. Temporal Flux (tachyons/cm³)

- Plinth = 16
- Plinth = 18
- Plinth = 20
A Wasted Visual

The Temperature Control Project

Introduction

Objectives

Solution

Conclusions

Does this really provide the audience with any “information”?
A Better Visual

The Temperature Control Project

1. **Objective** – maintain temp
2. **Solution** – IC sensor, μcontroller, fan control
3. **Future work** – high fan power
Other tips

• Don’t downplay your own expertise
• Stay within your allotted time…
• But don’t go too fast!
• Go over big ideas twice
• Consider audience attention span…
Sources of audience distraction:

- Insufficient background for audience to understand the talk
- Confusing/disorganized structure
- Visual aides crowded/unreadable
- Complicated, formal, unnatural speech
- Speaker reads the speech
- Monotonous sentences
Pique interest periodically with intermediate conclusions
Commonly-cited presentation “issues”

- Unreadable slides
  - Small text, poor color contrast, etc.
- Too much on a slide
  - Paragraphs, C programs, multiple diagrams
- Textual descriptions in place of diagrams
  - table vs graph, C code instead of flow diagram
- Lack of eye contact, distracting movements
- Low voice volume, monotone, etc.
- Visible tension or lack of confidence
- Apparent insufficient preparation/rehearsal
# Presentation assessment rubric

## ABET EAC Student Outcome 3

*Graduates will demonstrate an ability to communicate effectively with a range of audiences.*

### (ELEC 3040/3050 Oral Presentation)

<table>
<thead>
<tr>
<th>Trait</th>
<th>Student</th>
<th>Partner</th>
<th>Developing</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NONVERBAL SKILLS</strong></td>
<td>Eye contact holds audience attention; seldom or never looks at notes.</td>
<td>Consistent eye contact with audience; occasional return to notes.</td>
<td>Minimal eye contact with audience, reading mostly from notes.</td>
<td>No eye contact with audience; entire report read from notes.</td>
</tr>
<tr>
<td></td>
<td>Movements seem fluid and help the audience visualize.</td>
<td>Movements/gestures enhance articulation.</td>
<td>Very little movement or descriptive gestures.</td>
<td>No movement or descriptive gestures.</td>
</tr>
<tr>
<td></td>
<td>Displays relaxed, self-confident nature, with no mistakes.</td>
<td>Displays little or no tension; quickly recovers from minor mistakes.</td>
<td>Displays mild tension; has trouble recovering from mistakes.</td>
<td>Tension and nervousness obvious; has trouble recovering from mistakes.</td>
</tr>
<tr>
<td><strong>VERBAL SKILLS</strong></td>
<td>Consistently strong, positive feelings about topic.</td>
<td>Occasionally shows positive feelings about topic.</td>
<td>Shows no feelings about topic.</td>
<td>Shows negative interest in topic.</td>
</tr>
<tr>
<td></td>
<td>Strong voice, precise pronunciation of terms; all audience members can hear presentation.</td>
<td>Clear voice, mostly correct pronunciation of word; most audience members can hear presentation.</td>
<td>Quiet voice and/or incorrect pronunciation of terms; audience may have difficulty hearing.</td>
<td>Mumbles, incorrectly pronounces terms; speaks too softly for a majority of audience members to hear.</td>
</tr>
<tr>
<td><strong>LANGUAGE</strong></td>
<td>Strongly enhances presentation effectiveness.</td>
<td>Technically correct; generally supports the presentation.</td>
<td>Mundane or commonplace; partially supports presentation effectiveness.</td>
<td>Unclear, technically weak or incorrect; minimally supports presentation effectiveness.</td>
</tr>
<tr>
<td></td>
<td>Especially appropriate for the audience.</td>
<td>Mostly appropriate for the audience.</td>
<td>Sometimes appropriate for the audience.</td>
<td>Often inappropriate for the audience.</td>
</tr>
<tr>
<td><strong>ORGANIZATION</strong></td>
<td>Organizational pattern is clear, consistently observable, and exhibits strong cohesiveness.</td>
<td>Organizational pattern is clearly and consistently observable; may have some extraneous content.</td>
<td>Organizational pattern is intermittently observable; extraneous content evident.</td>
<td>Organizational pattern is not observable. Poor choices of content.</td>
</tr>
<tr>
<td><strong>VISUALS</strong></td>
<td>Excellent visuals that enhance understanding of presented information.</td>
<td>Appropriate visuals used and explained.</td>
<td>Visuals used, but not well explained; some content difficult to view.</td>
<td>Little or no visuals, too much content on slides, or slides unreadable.</td>
</tr>
<tr>
<td><strong>SUBJECT KNOWLEDGE</strong></td>
<td>Demonstrates full knowledge of all information.</td>
<td>Demonstrates reasonable knowledge of information.</td>
<td>Uncomfortable with some information.</td>
<td>Does not have grasp of most information.</td>
</tr>
<tr>
<td></td>
<td>Answers all questions with clear explanations and elaboration.</td>
<td>At ease; gives expected answers to most questions, without elaboration.</td>
<td>Able to answer only rudimentary questions.</td>
<td>Cannot answer questions about subject.</td>
</tr>
</tbody>
</table>
References

- Practical Engineering Design, Maja Bystrom & Bruce Eisenstein, CRC Press, 2005
- Writing and Speaking in the Technology Professions: A Practical Guide, 2nd Ed., David F. Beer (Editor)
- How to give a successful oral presentation http://www.catalysis.nl/links/presentations/presentation.php