

Speaking Skill Handouts

From Su's Linear Algebra Class

To get started, the first day of class I have students stand at the front of the room to introduce themselves to class. There are lots of nervous giggles! I use the handout *First Thoughts on Speaking* some time during the 1st week. Then I give a demo presentation of a homework problem.

Some time during the 2nd week we watch the Toastmaster's video "Be Prepared to Speak". It's very corny and not specific to mathematics but still gives a great overview of the preparation process, organization, and delivery. I use *Preparing for a Mathematics Talk* handout as a follow up to our discussion. Students are required to meet with me prior to their first formal talk. We use that handout to outline our discussion.

Before the first formal talks, I distribute *Instructor Assessment of Student Presentations* form so students will know how their talks will be graded. To use these forms, I jot down comments during or immediately following each talk and then circle the corresponding number of points for each category.

After each formal talk students evaluate their peers, through comments not grades, using the *Peer Evaluation of Speaking* form. The speaker also uses this form for self-evaluation. I read and review the peer evaluation forms before finalizing my grade on the talk. (Sometimes students didn't find it as unclear as I thought it was, for example.) I return the peer evaluation forms along with the grade sheet to the speaker.

Students are required to meet with me before their 2nd and 3rd formal talks. They bring the evaluation forms with them so we can gauge our conversation based on how previous talks went.

First Thoughts on Speaking

Suppose that you were asked to present the solution to a homework problem from our book (say 1.1 #1). What would you do to get ready?

- 1.
- 2.
- 3.
- 4.

What would you discuss during the presentation?

- 1.
- 2.
- 3.
- 4.

How does a spoken presentation differ from a written presentation?

- 1.
- 2.
- 3.
- 4.

What do you do differently in preparing a speaking presentation?

- 1.
- 2.
- 3.
- 4.

Preparing for a Mathematics Talk

A good talk, like a good paper, takes careful preparation. The following steps are meant as a guide. Adjust them to fit your style.

Prepare, Prepare, Prepare!

Understand what you are going to be speaking about.

- Know the “how”s and the “why”s.
- Check that you’re correct.

Choose what you will (and won’t) say and what you will (and won’t) write based on

- How much time you have.
- Which ideas are interesting and/or important.
- What ideas the audience will or won’t have trouble understanding.

Write the Body of your talk.

- Organize the body into a series of 3–5 parts or steps.
- Explain where you’re going. Summarize your work along the way and use transitions between one step and the next.
- If showing steps of complicated calculation, be sure to give clear and detailed steps. Explain the notation you use, as you first use it.
- Choose appropriate visual aids and plan them. (Don’t spend time preparing final versions until you’ve talked through the talk at least once.)
- Include alternative explanations, such as analogies or pictures, of challenging concepts but don’t dwell on the easy concepts.
- Keep your focus.

Develop an Introduction

- Say hello.
- State your topic. Set it in context. Explain why it’s interesting or important.
- Outline your talk. Keep it brief.

Develop a Conclusion

- Signal your conclusion.
- Review the key ideas. Keep it brief.
- End with something to think about.

Practice, Practice, Practice!

Talk through your talk.

- Say and write what you plan on saying and writing. Adjust your talk as you rehearse. Be sure that your talk fits and fills time allotted.
- Do not try to memorize your talk; focus on ideas, not words. [During your talk you are permitted to use no notes. No reading overheads either!]
- Be sure that you can work through all calculations correctly without using notes.
- Work on your delivery, especially any areas you have had trouble with before. Have someone listen to you or record your talk so you can listen to it.

Prepare visual aids and notes.

- Visual aids must be readable. For overheads, leave 2 inches top and bottom blank, use type size 24 or larger, no more than 7 to 10 lines. For the board, plan where to move to next board, use columns about 3 feet wide.
- Choose visual aids format to match your goals. For example, lengthy calculations that you expect your audience to follow should be done at the board, while reference facts should be on an overhead.
- Develop final versions of your visual aids and notes and practice using them.

Delivery

- Be **confident**, enthusiastic, and relaxed. (It does come with practice and experience!) Use gestures, body position, and body movement to convey enthusiasm, but don't overdo it.
- Pay attention to your **audience**. Look at them, not the board. See if they understand. Use good eye contact.
- **Pace** your delivery to allow your audience to process what you are saying; it helps to pause at key points. But keep the talk lively; don't over-explain easy ideas and don't consult written notes often. Use a "heightened conversational style"¹
- **Speak** clearly. Say enough; don't just write. Vary your volume and tone of voice.
- **Write** clearly. Write enough; don't just speak. Be sure the audience can see what you're writing; don't block the view.
- Use **visual aids** appropriately. Know how the equipment works. Don't stand where you block the view. No more than one overhead per minute on average.
- **Avoid distractions** in speech, writing, or physically.

¹ The term comes from the Toastmasters International video "Be Prepared to Speak: The Step-by-Step Video Guide to Public Speaking". (San Francisco: Kantola Productions, 1985)

Instructor Assessment of Student Presentations

Speaker: _____ Total points (of 100): _____

Topic: _____ Date: _____

Understanding/Explanation

The speaker seemed to understand

The use of vocabulary and notation was

The explanations of "why" were

The level of the talk was

The pace of the talk was

Understood most and explained some well, with some serious problems.....	30
Understood most and explained most well, with one serious problem or a few small problems.....	40
Intermediate grade.....	45
Understood all and explained all clearly.....	50

Organization

The introduction was

The organization of the body / transitions were

The conclusion was

The length of the talk was

Partial or awkward organization throughout.....	15
Intermediate grade.....	20
Solid introduction, conclusion, transitions, and length.....	25

Delivery

The amount and clarity of speaking was

The amount and clarity of writing / visual aids was

The speaker's attention to the audience / eye contact was

The speaker's gestures, body language / attitude

Serious problem with speaking, writing, attention, or distractions.....	15
Intermediate grade.....	20
Well presented, made reasonable contact with audience.....	25

Peer Evaluation of Speaking

Speaker: _____ By: _____

Topic: _____ Date: _____

Please offer constructive suggestions in each of the following areas.

Understanding/Explanation

Speaker's understanding of the content:

Speaker's explanation of the concepts and steps:

My understanding of the concepts and steps:

Organization

Speaker's introduction, transitions, and conclusion:

Speaker's choice of content, length of talk:

Delivery

Speaker's speaking, gestures, and attitude:

Speaker's writing/visual aids/use of board:

Speaker's connection to audience, eye contact: