

Teaching

(in an Academic Environment)

Marek J. Druzdzel

with minor additions from Peter Brusilovsky

School of Information Sciences
and Intelligent Systems Program

University of Pittsburgh

marek@sis.pitt.edu

<http://www.pitt.edu/~druzdzel>

Overview

- Why do we want to teach well?
A statement of teaching philosophy
Teaching effectiveness
How to do teaching well?
Teaching resources/technology
Concluding remarks

- Why do we want to teach well?
- A statement of teaching philosophy
- Teaching effectiveness
- How to do teaching well?
- Teaching resources/technology
- Concluding remarks

- Why do we want to teach well?
A statement of teaching philosophy
Teaching effectiveness
How to do teaching well?
Teaching resources/technology
Concluding remarks

Why do we want to teach well?

“I know it seems crazy when everyone else in the world wants to be a film director, but for me, teaching is one of the few heroic jobs left. All the biggest miracles take place in classrooms. Nothing happens without teachers.”

**Stephen Frears
(British film director)**



Why do we want to teach well?

- **The most important factor affecting student learning is the quality of teaching.**
- **Your students are learning from you more than you would like.**
- **You will feel proud to follow your students' achievements.**

The importance of motivation

- **There should be something that motivates you, something more than a salary or a perspective of tenure.**
- **What, to you, are the rewards of teaching?**
- **What ideals keep you motivated and inspire your students?**
- **How do you want to make a difference in the lives of your students?**

Your statement of teaching philosophy

- **a.k.a. “Reflective statement on teaching goals and approach”**
- **Documents your approach to teaching.**
- **Required in most teaching evaluations and in many job applications.**
- **Answers the question “Why do I teach?”**
- **Write one ASAP!**

Your teaching philosophy: Contents

- What is “good teaching?”
- What motivates me to teach?
- What do I expect the outcome of my teaching to be?
- How do I know that I have taught successfully?
- What themes pervade my teaching, what habits, attitudes, or methods make my teaching effective?
- What is my interaction with students?
- How do my students best learn?
- Why is my teaching approach significant?
- What values do I want to impart on my students?
- What is it that I believe?
- **What kind of person/teacher am I?**

**Your teaching philosophy:
“Who am I as a teacher?”**

***“I don't believe I can really do without teaching.” –
Richard P. Feynman***

***“If we expect students to be winners and expect them to
do well, they will rise to the occasion.” – Jaime Escalante***

***“We can talk all we want about awards and salary raises,
but the real reward of teaching is teaching. The
personal satisfaction you get when you do it effectively
is just phenomenal.” – David W. Pratt***

How do we assess effectiveness of teaching?

- **Inputs**, that is, what teachers *do*, how well they do the work of teaching.
- **Outputs**, that is, what teachers *accomplish*, typically how well their students learn.

Effectiveness of teaching: Inputs

1. Preparation and content

Identifying objectives and deciding course content

Designing learning activities

Classroom policies and procedures

A syllabus' s silent message

Communicating structure

2. Engaging students/Stimulating student thought and interest

Your questions: Do they make your students think?

Discussions, group work, collaborative learning

Teaching to stimulate and motivate

Effectiveness of teaching: Inputs

3. Making the subject matter comprehensible for the students (Explaining clearly)

How to know when you are not clear and they don't understand

Making the content relevant

Examples: The case in point that makes it clear

4. Knowledge and love of content

Is "more" "better" when it comes to content?

How do you convey knowledge? Is knowing the material enough to teach effectively?

5. Developing as a teacher

Professional growth (e.g., seminars or courses focusing on teaching, use of teaching resources)

Effectiveness of teaching: Outputs

(Assessing student learning and your teaching)

Assessing student learning: exams, written work, projects, presentations, and performances

Effective grading

Assessing your teaching:

Communication and feedback: from your students and your colleagues

Sherman, T. M., et al. (1986). "The Quest for Excellence in University Teaching". *Journal of Higher Education* 48(1): 66-84.

Principles of instruction (Yelon, 1996)

- **Meaningfulness/Prerequisites (*Context*)**
- **Open Communication (*Relationships*)**
- **Organized, Essential Ideas (*Main Points*)**
- **Learning Aids (*Technology*)**
- **Active Practice (*Applying Information*)**
- **Safe Spaces/Encouraging Places (*Feeling*)**
- **Consistency (*Dependability*)**

Do you consider these Principles when designing a course? When Teaching it?

What is knowledge?

- **To know is to apply whenever appropriate.**
- **Teach understanding and usefulness of the material.**
- **Start designing your course from the goal: What do you want your students to know?**

Where to start (becoming a good teacher)?

If you were to walk into a classroom, what might you see or hear there (from the students as well as the teacher) that would cause you to think that you were in the presence of an expert?

What would make you think: *“Oh, this is good; if I had a child this age, this is the class I would hope for.”*

Consider your long life as a student. Recall an occasion (or a pattern of occasions) that you still remember. The memory can be either positive or negative.

What makes this so memorable?

Where to start (becoming a good teacher)?

“People will forget what you said. People will forget what you did. But they will never forget how you made them feel”

**Maya Angelou
(American writer and poet)**

How do we do it well?

Most of student learning happens at home, so your classroom meetings are mean to:

- **Structure the material**
- **Show relevance to the student needs**
- **Motivate the students, make them enthusiastic about the material**
- **You cannot make the students enthusiastic about the material if you are not enthusiastic yourself!**
- **Create and maintain enthusiasm!**

Irritating teacher behavior

- **Shows up late for class**
- **Doesn't show up for office hours**
- **Doesn't get to know students**
- **Makes students feel stupid**
- **Talks to the board**
- **Doesn't follow the syllabus**

University of Tennessee, Knoxville FYS 1999

Irritating teacher behavior

The Seven Categories of Intolerable Teaching (Student ?) Behavior

- **Condescending Negativism**
- **Poor Planning**
- **Immorality**
- **Un-communicated Course Details**
- **Unfair Grading**
- **Poor Hygiene**
- **Uncooperative Cynicism**

(Braxton & Bayer, 1999)

Teaching and research?

- **Two opposite claims on your time**
 - **It is easy for a beginning teacher to spend too much time on preparing lectures: Plan and limit the time.**
- **The two can support each other (see Feynman)**
 - **How?**
- **A stream of your research could be devoted to teaching and learning**
 - **Use ideas of you main research for improving education**
 - **Another stream of research motivated by practice**
 - **Respectable, well-supported by NSF**

How to start as a PhD student?

- **Observe good teacher as a student, make notes on the process**
- **Be more active as a TA – attend classes, discuss the process with your instructor, suggest new ideas**
- **Start teaching part of the lectures or whole lectures in a class**
- **Teach a class**
 - **Usually after your coursework/exams are done**
 - **Plan in advance**
 - **Ask in advance**
 - **Important for your CV and job search**

How technology can help?

- **Rich communication using Blackboard**
- **Course materials on the web.**
 - **Additional readings**
 - **Examples, problems, exercises**
- **Videotaping your lectures and making the available on the web (distance learning).**
 - **Recording your lectures in mp3 format and making them available on the web (Dr. Hirtle).**
 - **Annotating your slides with voice (Dr. Spring).**
 - **Using PANOPTO system at SIS.**
- **Develop advanced content or tools for your classes**
 - **Practice systems for Java, SQL, Python (Dr. B.)**
 - **Peer content creation with SALT (Dr. Z.)**
 - **Digital library (Dr. He)**

Resources for teaching

- **University of Pittsburgh's CIDDE (Center for Instructional Design and Distance Education)**
 - **Rich library of examples of teaching materials**
 - **Experts that you can meet with and that you can invite to your classes**
 - **Opportunity to videotape your lectures**
 - **Lunch-time talks and workshops**
 - **A course for TA and TF (now mandatory)**
- **Your colleagues: You can invite them to sit your classes and give you feedback.**
- **Literature on teaching**

Concluding Remarks

- **You cannot teach everything in a department – then choose what you teach carefully.**
- **The best idea is to teach what you know best.**
- **Try to integrate your teaching and your research – you will do both better.**
- **Obtaining research funding will help you in teaching – you can hire your students as research assistants. This includes undergraduate students.**