

THE TEACHING PROCESS

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A TEACHING QUOTE

Every student interested in an academic career spends an average of more than six years in graduate school, learning how to conduct research. However, as soon as one gets hired, his/her first, immediate test is to find oneself in a classroom, typically in front of 50 to 100 students. (S)he has to teach all these students who have a wide variety of backgrounds, interests, and motivation.

The "formal" teaching training usually consists of a couple of seminars and/or a couple of pamphlets. This means that that doing a good job teaching is pretty much left to the individual.

Teaching can be (emotionally) rewarding if one does a good job; but, if one does not, it can be a very unpleasant experience, which can have repercussions in one's other activities.

As Professor Nof told me in my first week at Purdue, "to be a good teacher, you will need to become not only a good teacher, but also a good doctor, a good lawyer, and a good parent."

Purdue IE Professor Jason Papastavrou, 1998

INSTRUCTOR: FRIEND OR FOE

Like a parent,

a good instructor consistently provides to the student(s)...

SUPPORT: material content, motivation, advice,...

BOUNDARIES: schedule, grading, academic honesty,...

LEARNING versus TEACHING

Students learn (and maybe also teach)

Instructors teach (and maybe also learn)

PURDUE

The old Purdue:

teaching, research, service

The new Purdue:

learning, discovery, engagement

STUDENT LEARNING STYLES DIFFER

THREE THEOREMS

Let

x denote the time spent by the instructor on the course.

y denote the units of student learning.

1. Monotonicity

$$\frac{dy}{dx} > 0$$

2. The Finite-Learning Theorem

$$\lim_{x \rightarrow \infty} y(x) < \infty.$$

3. The Substitution Theorem

Instructor hours, enthusiasm, and planning are substitutable.

TEACHING EFFICIENCY

- Good teaching feels better than bad teaching.
- More time spent preparing improves teaching.
- An hour spent on teaching is an hour not spent on research.
(at least for elementary courses)
- Teaching efficiency happens with practice.

Remember:

THE INSTRUCTOR
CANNOT LEARN
FOR THE STUDENT.

CLASS ORGANIZATION

The semester's schedule. (how detailed?)

Grading.

Attendance policy.

Testing policy.

Missed homework, quiz, exam.

Office Hours.

Email to the class.

Course web site.

Student evaluations.

IN CLASS

Presentation method.

Presentation timing.

Crowd control.

CHEATING

How to prevent.

What to do when it happens.