

TEACHING TO STUDY VS JUST TEACHING THE MATERIAL

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Abstract. With the ever changing world, many state-of-the-art skills taught at a university become obsolete fast. To succeed, students need to continue learning all their lives. Because of this, the emphasis of college education is shifting more and more from teaching the material to teaching how to study. However, many teaching techniques are still optimized for teaching the material: colleges try their best to make their faculty better and better teachers, to use clearer textbooks – everything to make teaching easier and more efficient. As a result, students get accustomed to almost perfect teaching. However, when a few years after graduation, they will need to learn the new ideas, these ideas will not come in the form of a clear textbook taught by experienced faculty – these ideas will come as raw imperfect texts taught by inventors with not much teaching experience. We therefore need to better prepare out students for imperfect learning. One way to achieve this is to have more classes taught by doctoral students, students who are enthusiastic but still imperfect teachers. As a result, not only will students be exposed to imperfect teaching, but doctoral student will gain more teaching experience and thus, upon their own graduation, become better-teaching as faculty.

Keywords: imperfect teaching, lifelong learning, teaching by doctoral students

Main emphasis of many pedagogical studies is on more efficient teaching. A large amount of pedagogical research is aimed at designing more and more efficient teaching techniques: how to make sure that the students learn the required material as fast as possible, so that the resulting student's skills are as solid as possible.

From this viewpoint, the best way to teach students is:

- to use the best most skilled instructors,
- to use the best most easy-to-understand textbooks and educational materials,
- to adjust the teaching style to individual students, and
- to encourage students to develop long-term study groups that will help them move efficiently

from class to class.

Both research and practice show that all these ideas indeed work wonderfully:

- the students indeed study better,
- they learn faster, and
- their skills are retained longer.

But is this what we need? But is all this want we need? All the above ideas would make sense if the main objective of education was to learn certain facts, ideas, and skills. This may have been true in the past, but nowadays, with the rapid progress of knowledge, whatever skills we learn at school or at the university becomes obsolete really fast. To be successful, a graduate needs to constantly learn new ideas, new skills, new developments. This need is well recognized in many professions, where one is required to constantly upgrade his/her skills. In many countries, medical doctors, teachers, and people of many other professions are legally required to go through a certain amount of yearly training.

Because of this, many years from now, the currently acquired knowledge will become a small part of what is needed in the corresponding profession.

- Short-term, graduates who learn the most will be the best prepared for their jobs.
- However, long-term, the amount of information and skills acquired at the university is not that important, what is much more important is the ability to study, the ability to constantly acquire new information.

This should be one of the main objectives of education:

- not so much to learn the new material,
- but rather to teach the students how to learn more efficiently and autonomously.

From this viewpoint, there is an advantage of having imperfect teachers. From this viewpoint, techniques leading to most efficient teaching the material may be somewhat counter-productive. After graduation, a person will have to learn:

- not from the well-edited textbook material,
- but rather from a raw not-perfectly-written texts describing new ideas and new developments.

A graduate will learn:

- not from the well-prepared teachers,
- but rather from the authors of new ideas, authors who may not be good teachers, but who are the only ones who can explain these ideas.

We therefore need to make sure that students can learn:

- not just from the best teachers,
- but also from teachers who are not yet that perfect.

For that purpose, the students need to be exposed to different styles of teaching.

Imperfect teaching happens. From this viewpoint, good news that is that at present, students are indeed often exposed to imperfect teaching. This is not because someone on purpose subjects them to imperfect teaching. This imperfection is a side effect of the current academic emphasis on research and on grants. When universities hire professors, research ability is one of the main criteria. Of course, teaching ability is also important, but research is clearly much more important:

- a great researcher with so-so teaching abilities will most likely be hired, while
- a great teacher with so-so research abilities – and thus, few publications and no grants – will most probably not be hired.

So what should we do? Schools realize that teaching is sometimes imperfect. They spend a lot of efforts improving the quality of teaching, making their faculty better teachers.

- On the one hand, this is good.
- But on the other hand, as we have mentioned earlier, this decreases the amount of imperfect teachers and thus, decreases the students' exposure to and experience of imperfect teaching – and experience that it definitely needed for students to succeed.

So what shall we do? Hire bad teachers? Teach faculty how to teach badly? This does not make sense.

A somewhat similar situation: exposing kids to dirt. A similar situation is well-known in rearing kids.

- On the one hand, we all want to protect our kids from diseases. We do not want them to put dirt in their mouths, we do not want the kids to pet stray cats and dogs which they may carry (and probably do carry) possibly contagious diseases.
- On the other hand, if we protect kids too much, if we surround them by a sterile bubble, then, once they get out into the real world and get exposed to bacteria, with no acquired immunity, they will get sick right away.

So what is a solution? Shall we cover our kids in mud and bacteria? Of course, not. A reasonable solution is:

- not so much to artificially provide them contact with bacteria

- but rather not to prevent them too much from an inevitable natural contact.
Let us see if we can use similar ideas to better expose students to imperfect teachers.

Possible solution. In the above description, we skipped one more reason why teaching is sometimes imperfect: because teaching is often done not by faculty, but by doctoral students. Even when the class is scheduled to be taught by a faculty member, this faculty member often goes to conferences, and asks his/her students to teach instead of him/her.

The usual attitude is that while this teaching experience helps doctoral students – especially those who themselves become faculty – to gain teaching experience and thus, become better teachers, this is not a very good experience for the students they teach. Because of this attitude, university try to minimize this practice as much as possible. The result is that most classes (at least in good schools) are taught by experienced faculty – with the side effect that:

- not only are the student not well prepared for future-life imperfect learning,
- but also doctoral students, with limited teaching experience, are not well prepared for their future teaching-included careers.

This prompts us to come up with a natural solution to all above problems: *have more classes taught by doctoral students*. In our opinion, this is a win-win situation:

- First, doctoral students will become better prepared for teaching and thus, will be more effective teachers.
- Two, students will be more exposed to imperfect teaching (enthusiastic but still imperfect) and thus, will be better prepared for lifelong learning.

Discussion. Yes, the students will not learn as fast and as efficiently as they do now. However, this slight slow-down is inevitable if we want these students to become better prepared for future learning.

- This proposal may increase the time to graduation, e.g., from 4 to 4.5 years for undergraduate students.
- However, this a small price to pay for getting a cohort of students will prepared for the most important part of their education – for lifelong learning.

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