

How are we to restore *creativity* through education?

We developed the Collaborology course as a *prototype* answer; which was, just as all other *system prototypes*, conceived as a collection of challenge–solution pairs called *design patterns*; which I'll here represent by a single one:

Education *must be by pull, not by push*.

Which offers a whole spectrum of advantages in addition to the one at hand; such as empowering people to (learn according to their needs or interests, and) re-educate themselves at any point in their life and career; and keep up with the fast-changing world.

You'll easily understand the *creativity* part if you just recall what we talked about at the beginning of this chapter:

The *creative mind* creates its own meaning, by connecting dots.

The *conditioned mind* relies on what's been given by authorities.

Michael Wesch (cultural anthropologist, media ecologist and education innovator and reformer, who was in 2008 honored as the U.S. Professor of the Year) made a case for education by *pull* in his TEDx talk *From Knowledgeable to Knowledge-Able*—by showing a photo of an empty university auditorium and commenting:

“This is what my classroom looks like. I want you to think about what's the message of the walls. It's not about what I'm saying up in the front. The walls are saying something too. What are they saying? John Dewey used to say that students learn what they do. So what are they learning sitting here? The message of just sitting there is that the information is up at the front of the room, with the authority, that they should follow along. The message of this room is that you should bow to the authority and follow, follow, follow.”

Teaching by *push* might have been the *only* option, Wesch explained, when information was scarce; when people had to come to a lecture hall and receive it from an expert. But today information is *everywhere*; it's literally in the air around us, and we can access it through a mobile device. The task of an educator is no longer to make students knowledgeable but *knowledge-able*; which means—capable of turning the vast amounts of information we have access to into *knowledge*. Wesch concluded by a call to action:

“If we should move our students from being knowledgeable to knowledge-able, we'll have to recognize that knowledge-ability is a practice; it's not a list of things that you can just tell somebody.”

So that's one of the core advantages that our collaborology course prototype endeavors to provide—the *praxis* of knowledge-ability; of researching and comprehending a new and complex domain of interest by connecting the dots.

But if each student is to be able to choose *his own* learning trajectory through the subject matter—a number of questions remain to be answered:

- In what way should the “curriculum” i.e. the educational resources be organized and presented (if not as a linear sequence of lectures)?
- How will the student create a personal learning trajectory (through a subject he doesn't know; whose parts depend on one another)?
- How will the exam be organized (if everyone's learning trajectory is different)?

Our technical solution (which was then called “polyscopic topic map”) is called *domain map*. We presented it at the 5th IEEE International Conference on Advanced Learning Technologies in Kaohsiung, Taiwan, in 2005;

where it was selected for a special issue journal publication. Here is the gist of it:

We provided each student with a ‘map’.

Which served as orientation; and for accessing the learning resources; *and* as depository for the learning resources the student would *con-tribute* to the course (the course was conceived as a design lab; where the students and instructors co-create the learning resources for the next-generation students; where the grade was based 50% on what one learned and 50% on what one contributed or taught others).

At the exam each student showed his “learning itinerary” drawn on his map; and the questions were asked accordingly.

Being *polyscopic*, i.e. structured as a *holarchy*, this *domain map* provided a hierarchy of views including the *mountain top* view—which the student could use at the beginning of the semester to choose a direction and plan his itinerary.

By examining the *domain map*, the students were able to identify the areas where information is lacking; and configure their group projects accordingly; and *practice making things whole*.