

Connecting with students

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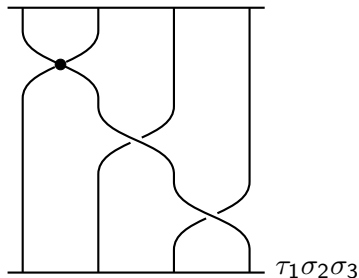
ETH
Department of Mathematics

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The key objective: connect two planes

Instructor

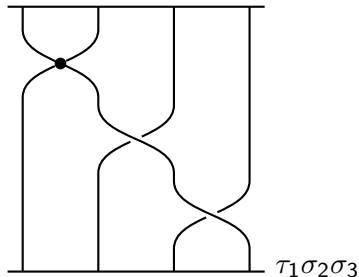
Students



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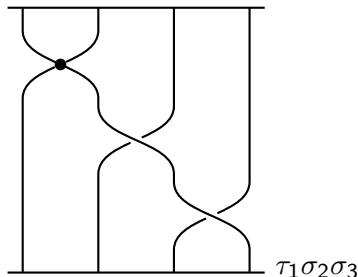


Apparent distance: physical, age, cultural ...

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Connecting means try to fill this gap and create a relation of mutual trust.

Level 1 - human connection

For practical reasons, courses are (often) held in large auditoria, with a huge number of students in front of a single instructor.



Figure: Physical distance (still life).

Yet, every student always perceives him/her self as an **individual** and as such would like to be recognised and treated. To that aim, one must shift the interaction dynamics from a $1 \rightarrow k$ to a $1 \leftrightarrow 1$ scheme.

How to?

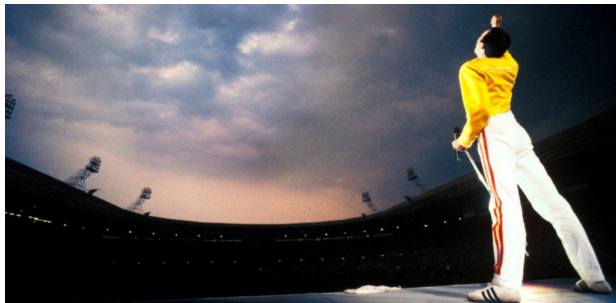
How to offer a tailor-made teaching experience?

Some concrete suggestions:

- learn your students' name (best sounding word principle)
- the number 0 homework assignment (not just a name but a person!)
- let your students be protagonists of the course with you (questions, remarks, diversions ...).

Level 2 - emotional connection

When I was working at Stanford University a senior colleague (later awarded a Fields medal) once told me *'here students want to be entertained'*.



Not sure that is exactly the case (here or elsewhere), but associating **positive feelings** to a course/an instructor/a subject makes the learning process much lighter.

How to?

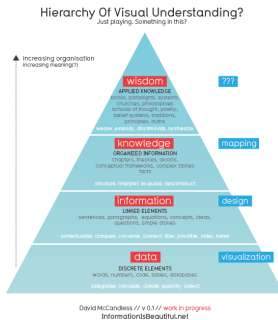
How to offer an experience?

Some concrete suggestions:

- design your lectures 'out of the box' and perform as if on a stage
- let your students be part of the show at multiple levels (the referendum example)
- stimulate your students' imagination and create memorable moments (the 'three things' game)

Principle 3 - scientific connection

Based on my own experience as a student, it is sometimes hard to perceive/transfer the joy of reaching the border of human knowledge.



Every time we enter in class we should make it clear why we love what we do. Idea: more focus on the **process** of discovery (=creation) rather than the result itself (=digestion).

How to?

How to reach this goal?

Some concrete suggestions:

- emphasis on questions rather than on answers (open versus closed model of knowledge)
- abolish the popular 'do as you were taught' scheme (especially in Math)
- as in our professional life, not a course but a community (we are all part of the same workshop).

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- **human** ($1 \leftrightarrow 1$ instead of $1 \rightarrow k$)
- **emotional** (experience instead of lesson)
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Each step is a prerequisite for the following ones and the three combine together to the scope of filling the gap between the two parties we started from.

Conclusions

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Thanks a lot for your **attention** and for your valuable **feedback**!