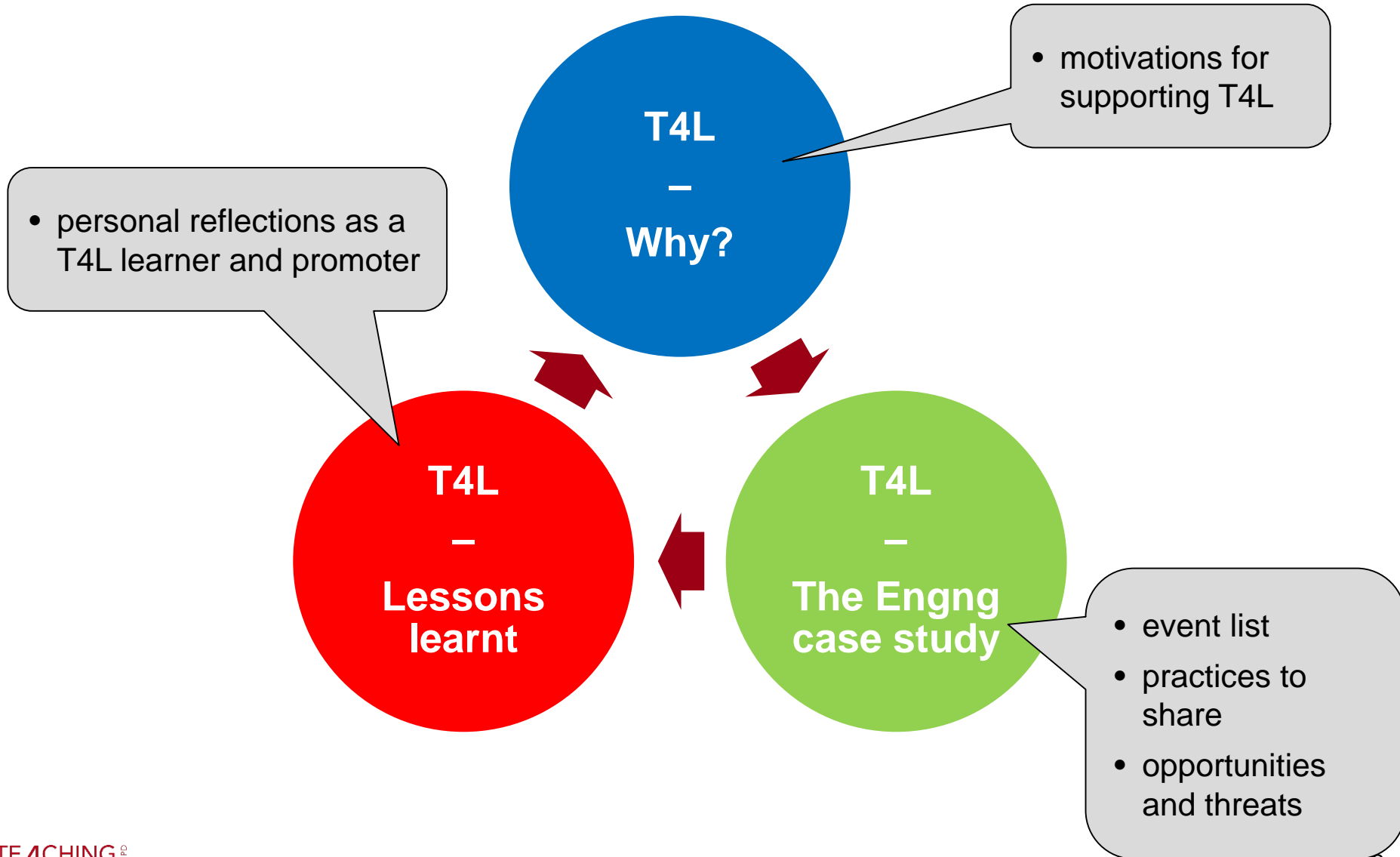




One year (and a half) of T4L @ Engineering

Motivations, reflections and lessons learnt

Massimiliano Barolo
School of Engineering



- « (...) higher education still operates on a model of academic disciplines, lecture-driven teaching and ubiquitous testing that was put in place in the 19th century. »
- « Society, economy, technology and careers have all changed dramatically.
But though academics pride themselves on their intellectual creativity, universities have changed less than business, the military or the practice of religion (...) »
- « (...) the core model for undergraduate education is pretty much the same. »

Dr. Craig Calhoun

President of the Berggruen Institute and former director of the London School of Economics
The New York Times, 23/08/2017

- What does "the society" expect from **us** as academicians?



- What do you believe the **distinguished feature** of a University professor is?

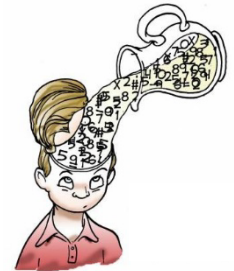
- We are expected to be **professional** educators

Are we indeed?



- The *mantra* of **continual improvement**
 - Nobody questions its existence in **research**
 - Does it apply to **education** as well?
 - How many of us believe on the effectiveness of the ANVUR_AVA process to monitor and improve our educational offer?
- Do we really need that somebody **forces us** to improve the way we teach?
 - Is that a matter of academic **regulation**?
 - of budget ("punti organico")?
 - or is it rather an **ethical** issue?

- Teaching does not mean **delivering contents**
 - that is a 19th-century approach to academic education



- Our objective is a bit more ambitious:
making the students learn
 - if they don't learn, that is **our** problem too

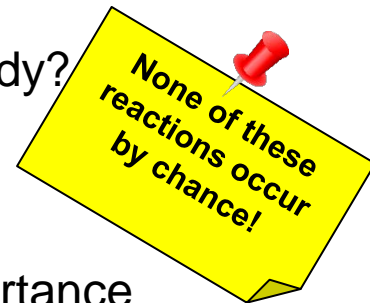


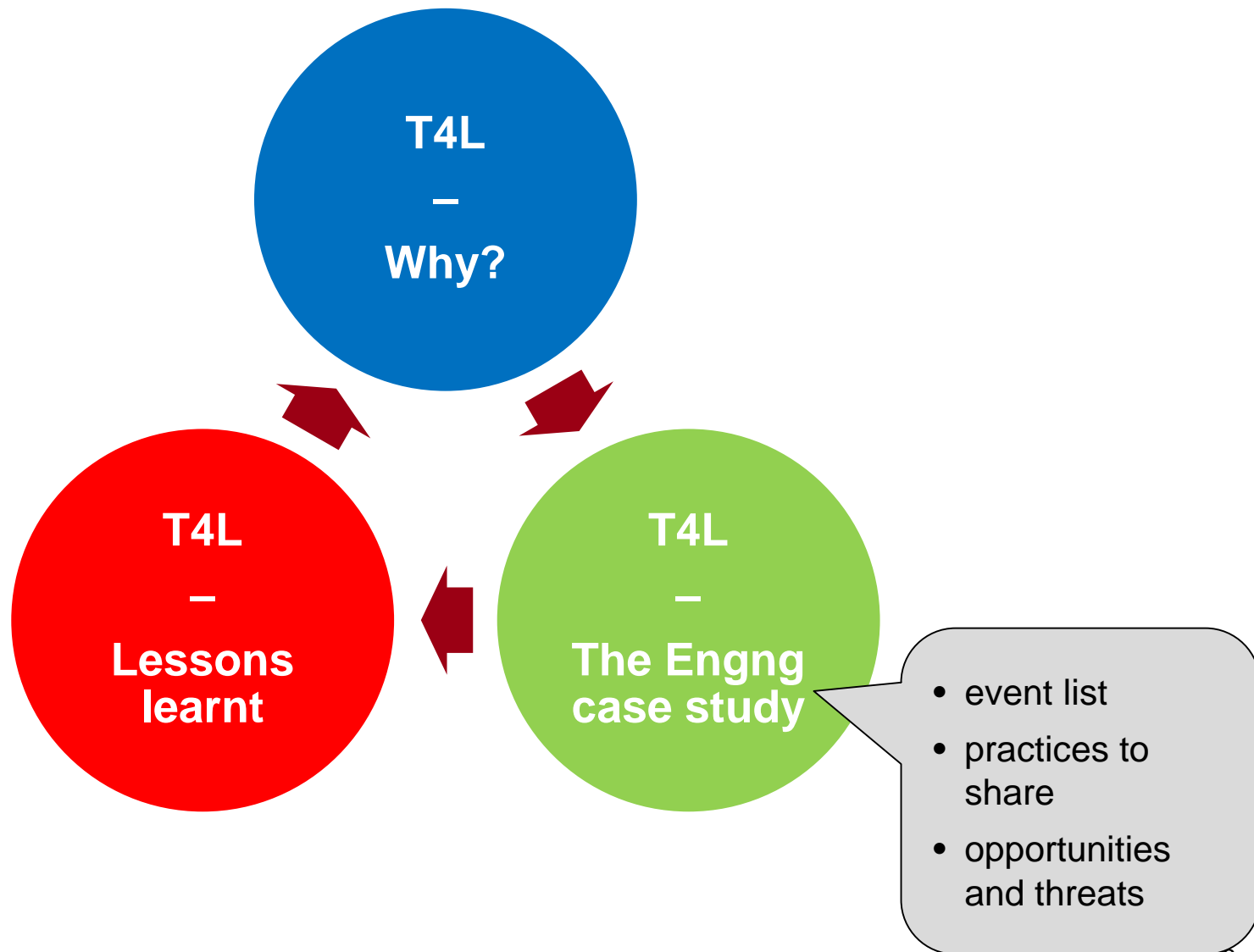
- **Activating the learning process is our business**
 - a good student has probably had at least one good teacher
 - How about a bad student? Are his/her failures due to him/her **only**? No teacher responsibility?
 - "The culture of alibi"
 - <https://www.youtube.com/watch?v=vk5Jg-mAeVY>

- Learning should be activated **during each class**
 - we should not delegate the student to learn by him/herself **at home only**

How would we like students to react when they attend a class of ours?

- Take notes?
- Ask questions?
- Discuss with the instructor?
- Interact with their peers?
- Get motivation to study?
- Get fascinated by a particular topic?
- Understand the importance of a concept for their future profession?
-





- **Residential Workshop**

- November 18-19-20, 2016 (Monteortone, PD)
- with a pre-meeting on Oct.18

- **Half-day Workshops**

- Feb. 10, 2017: *Following up* (Monica Fedeli e Daniela Frison)
- Mar. 24, 2017: "Evaluation among peers: designing peer review processes" (David Nicol)
- May 4, 2017: "Creating interactive learning communities in formal instruction" (Laura Bierema)
- June 16, 2017: *Sharing the practices and wrapping-up* (Monica Fedeli e Daniela Frison)

- **Peer observation of teaching**

- May-June, 2016: process design and testing by "pioneers"
- November, 2017: launch to the Engineering Faculty community
 - observations in the 1st and 2nd semester

- **Short hands-on workshops**

- February, 2018: "Delivering quizzes with Moodle" (IT Center, UniPD)
- March, 2018: "Making videos with Kaltura" (IT Center, UniPD)

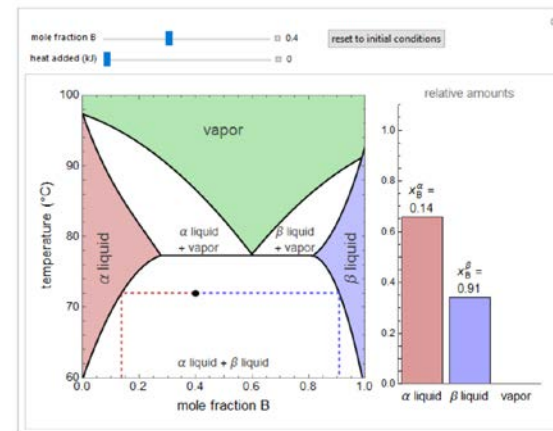
di Padova
il mattino
L'INIZIATIVA DI INGEGNERIA
**Ritiro nel monastero
per trenta professori**



- Start of the new mood from **the very first class**
 - instructor introduces him/herself
 - *Who am I? What has my career been so far? What is my expertise? Any hobbies?*
 - listen to the students
 - What are their expectations from the course?
- **Think-pair-share**
 - make the students work in the classroom on "small" tasks
 - in crowded classrooms: use *Letsfeedback* or *Kahoot* to share the answers
 - assign short time (eg., 4–7 minutes), so as to keep them very active
 - variants
 - pair-think-share
 - mini flipped class: let them discuss in advance in groups a concept that will be taught immediately after



- «Write down the two most important concepts you have learnt so far»
 - then collect, mix, re-distribute, share
- Peer review
 - «Grade your peer's homework» (e.g., one week available; use Moodle's "Workshop")
 - if the grade is too different from the instructor's one, the student is invited to motivate
 - «Review your peers' exercise» (also in crowded classrooms)
 - numbered blank sheets are handed over during a class; each student must remember his/her number
 - students are asked to solve an exercise (~20 minutes)
 - solutions are collected and re-distributed at the end of the class
 - each student reviews the solution of a peer and hands over his/her review during the following class
 - the review is returned to the original student
- «Find the error»
- Use of animated resources to capture attention



- **Integration of the concepts learned in several courses**

- assign tough projects, to be carried out in teams

- across an entire course, or during a single entire day (Overnight project)



- **Seek feedback on individual learning**

- ask questions to promote reflection; questions; questions...

- engage debate on the students' answers

- assign (and grade) homeworks

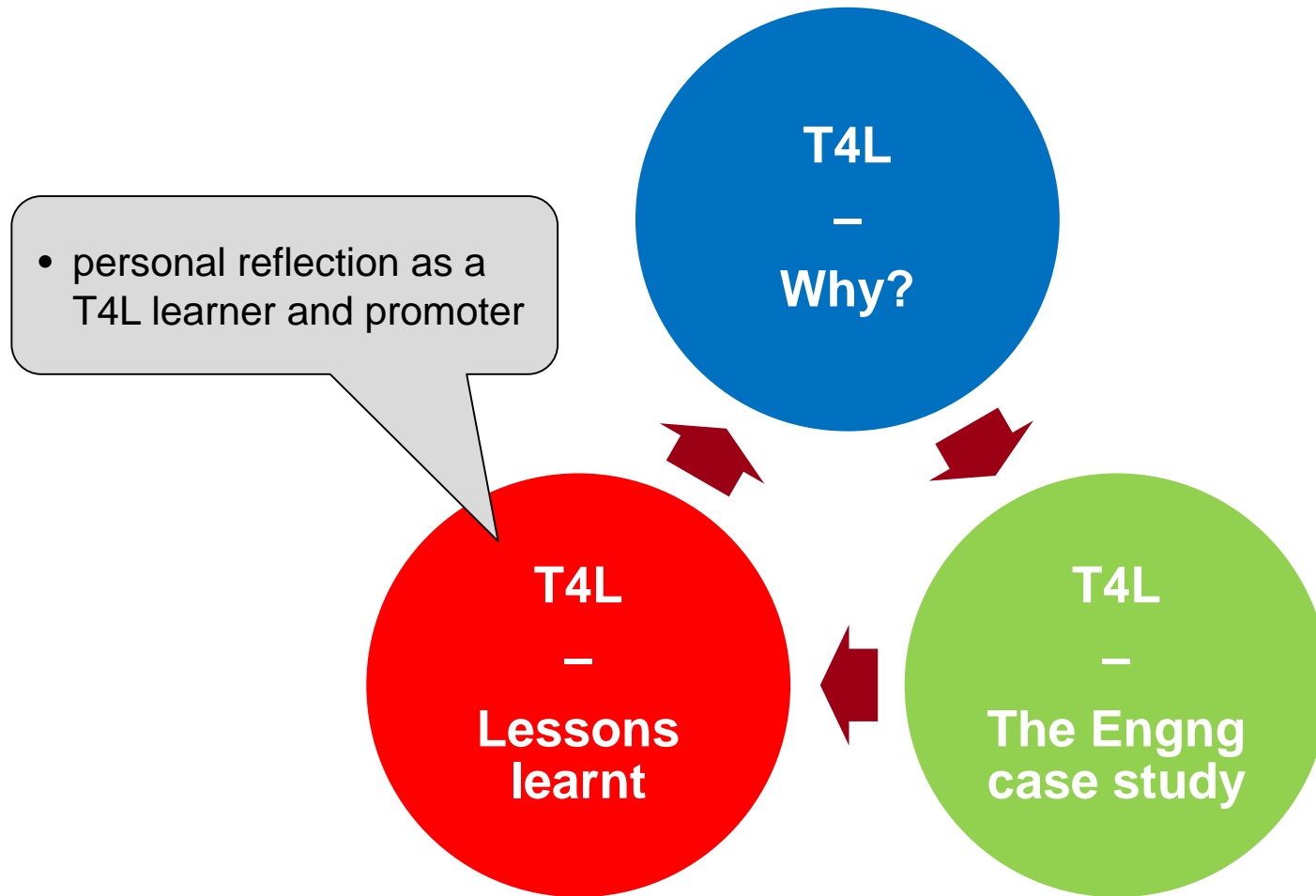
- assign (and grade) weekly "quizzes" on Moodle

- **Do not necessarily look for revolutions**

- **incremental** changes are enough

- «Improves lecture organization»
- «Forces students and instructor to get involved»
- «Liberates more "communication energy" between instructor and students»
- «Increases the level of learning»
- «Reduces the workload for the student»
- «Is rewarding for the instructor»

- «Some students do not accept to be active»
- «Some students want to be free of being passive»
- «Roles of instructor and students are mixed up»
- «Syllabus needs to be cut»
- «Average level of the group decreases»
- «Instructor runs after students' approval»
- «No way to test the true effectiveness»



- **Community** is the added value
 - T4L can spread only if faculty development is a **shared** path
 - individual experiences that are not shared **at a community level** are likely not to impact on the education **system**
- Always **report T4L experiences** at the Consiglio di Corso di Studio meetings
 - and at the Consiglio di Dipartimento
- **Share** the need of continual improvement
 - and share good/bad experiences