- What we actually assess is the communication about the reflection. Assumption is that writing about it helps in real-thinking/reflection...
- Judging one’s reflection.
- Assessment is about feedback: Judgement is finding an absolute answer. Different levels:
  1) Meta-review level
  2) Peer-review level.
  Be aware: It is judgement.
- A reflection: It does feel artificial how we integrate reflection in “education”
- Open-ended questions are probably more helpful for students.
- Multi modality data might help to extract information; heart rate, video recording etc.
- Experiences made out of that in context of reflective learning
- How can someone else assess whether I reflected?
- Everyone reflects but nobody seems to like reflection assignments.
- Is there a goal involved in reflecting? Often we do not make it explicit. What does this mean for the motivation of students to reflect. Personal growth (what is that, can be anything? Better study methods also very broad)/ Life Long Learning...
- How do we want the engineer to reflect? Or what kind of outcomes do we want to see?
- Let students formulate their goals / even let them make their own rubric.
- 100 DAYS OF REFLECTION

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EXAMPLES SHARED TO PRACTICE REFLECTION

- Having conversations with students (not assessing) How to do that in large group?
  - Example by one of the lecturers: At the end of a college, let students create a ‘what do I remember’ wall filled with everything they remembered about the course. Let individuals write down the things they did not think of to write on the board. That is probably the need to study!
  - Make this kind of reflection part of the things we teach.
  - Do an exercise in the beginning, and remember them along the way to keep doing it themselves might be already enough?
  - Transactivity: Adding on to the already ongoing conversation, transactive conversations are helpful for learning (Students, lecturers, peers)
  - In asking questions as a lecturer: evoke thinking and reflecting
  - Help students to look where they slipped not where they fell
  - Facilitate discussion/dialogues among students and in student-lecturer contacts
  - Ask the question: How do you feel after this lecture? at the end of a lecture. Let them think for a bit and ask a few to share there thoughts.
  - Let students formulate their goals even let them make their own rubric.

3) Peer-review level.
- Let students formulate their goals / even let them make their own rubric.
- Reflect on: topics, content, methods, approaches.
- Build it up -> Make this kind of reflection part of the curriculum.

In curriculum, think of what would you like your students to learn/model our students to embrace this ‘culture’.
- A Simple question of the end the lecture, could already kick start this.
- Integrate it on a meta level as well. Level of personal interest and skills instead of subject of course or skill. Evaluate the characteristics instead of the content.

Pitfalls:
- Lecturers: If there are lectures not taking it seriously, student will run with it. Rather some courses that really do it and are committed: instead of everyone does it, but not internally motivated. Role-model behavior plays an important role in this.
- Students: snake biting: it’s own tail => students who are not good in reflecting often do not feel motivated to learn more about reflectivity and about learning (about themselves).

Opening up a topic/discussion/other perspectives is the goal. The way lectures do this should fit them well. Not one size fits all.

In curriculum, think of what would you like your students to reflect on: topics, content, methods, approaches. Build it up => strategic assignments to serve the curriculum. Let’s be very conscious about which assignments we give.

**WAYS TO GO FORWARD**

Should we standardize reflection in education?

Yes. Because we do it way to less. More important, we should learn/model our students to embrace this ‘culture’.
- A Simple question of the end the lecture, could already kick start this.
- Integrate it on a meta level as well. Level of personal interest and skills instead of subject of course or skill. Evaluate the characteristics instead of the content.

Reflection is an ambiguous and profoundly complex human activity, in making it teachable and measurable flaws are detected.
- Reflective zombies: How to distinguish reflective zombies from students who authentically reflect?
- The instrumental approach limits the rich concept. Problems relate to: 1- paradigm (we are looking at reflection in the wrong way), 2- methods (we are using the wrong tools), and 3- systems (can we even know what we want to know?).
- Suggestions for implementation
  - Acknowledge the diversity of reflection and let go of the ‘checklist approach’.
  - Embrace the personal nature of reflection by stimulating awareness of one’s personal reflection styles as part of the reflective process.
  - Shift the focus of research to the practice of reflection. We believe that a strong vision on reflection can lead to a balanced curriculum, setting students up for a lifelong learning as a reflective practitioner.

**REFERENCES SHARED IN THE JOURNAL CLUB**

Tension Field: Reflection and Assessment

- What is the difference between self-regulation and reflection?
- Does it mean that reflection is a part of the self-regulation process?
- Reflection is one part of the monitoring process of the self regulated learning process. While reflection does is channeling the action. The change in action happens because you see what is happening.
- We ask students to do something extra with it (writing it down, discuss etc), we ask them to take an extra step while we assume (know?) they will do it their own way anyway.

Self Regulated Learning Models

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Annex: Assessing Reflection in Education

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