

*The training is delivered under the Education and Youth Programme and the Cohesion Policy Funds Implementation Plan: “Links between education, society and the labour market”, action “**Quality of higher education and internationalisation**”.*

Implementing Challenge-Based Learning in Courses 28.-29.10.2025



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Programme Wednesday October 29th



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09:00-09:15 Energizer exercise

09:15-09:30 Check-in and clarify the programme of the day

09:30-10:45 Workshops reflecting on unaddressed learning needs: a) assessment; b) mindset; c) teaching as coaching

10:45-11:00 Coffee break

11:00-12:00 Chiara/Akos/Gert parallel workshops on full course, pilot step (experimentation hackathon), and stakeholders and university management (institutional development)

12:00-12:30 Check-out for everyone what they got out of this workshop

Assessment of a technological course

Interdisciplinary teamwork		Beginning		Emerging		Proficient		Advanced
<u>Individual behaviour</u>		Able to:	Is not able yet/require	Able to:	Is not able yet/require	Able to:	Is not able yet/require	Able to:
3	Collaborate with people from other disciplines in a way that benefits both individual and team development.		Demonstrates an understanding of disciplinary knowledge and skills relevant for the group project.	Demonstrates an understanding of disciplinary knowledge and skills relevant for the group project.	Propose ideas that influence teamwork throughout the design process.	Applies disciplinary knowledge and skills to propose ideas that influence the group project throughout the design process.	Actively exchange with team members, crossing the disciplinary limits to enhance team progress.	Actively exchange with team members, surpassing the disciplinary boundaries and enhancing the functionality or quality of the final solution or product.
	Collaborate with people from other disciplines, based on identified roles within the team.		List tasks for each team member to carry out within the project.	Contributes with the proper competence to the team project.	Is aware how the competences of each team member complement each other. Highlight where team members can exchange knowledge and skills to improve the proposed solution.	Identifies how competences of each team member complement each other to contribute to the team project. List tasks for each team member to carry out within the project	Execute the tasks in the team project and revisits them in line with team progress.	Executing the tasks in the team project and revisiting them in line with team progress.

Assessment of a technological course

Interdisciplinary teamwork		Beginning		Emerging		Proficient		Advanced
<u>Portfolio</u>		Includes:	Not yet includes:	Includes:	Not yet includes:	Includes:	Not yet includes:	Includes:
4	Demonstrate the ability to approach the project with a holistic perspective by clearly denoting the interrelations between individual contributions and their boundaries.		Portfolio lists the disciplinary competences of each team member relevant for the group project.	Portfolio contains a list of specific tasks for each team member. Portfolio demonstrates how team members work collaboratively throughout the project.	Portfolio describes how each team member's knowledge and skills are integrated to enhance the functionality or quality of the final product.	Portfolio shows how all team members work collaboratively throughout the project. Portfolio reflects on team work (task division, exchange of knowledge and skills) and pinpoints areas of improvement.	Portfolio does not yet show extensive interaction between the disciplines.	Portfolio describes the extensive interaction and interdependencies between the disciplines. Portfolio describes obstacles in collaboration and how they were overcome.

Assessment of a technological course

Interdisciplinary teamwork		Beginning		Emerging		Proficient		Advanced
<u>Demonstrator</u>		Includes:	Not yet includes:	Includes:	Not yet includes:	Includes:	Not yet includes:	Includes:
5	Translate the individual components into an integrated demonstrator.		Demonstrator is based on disciplinary knowledge of each team member.	Demonstrator is the result of the disciplinary knowledge of each team member. There has been some interaction between the disciplines.	Demonstrator integrates each team member's knowledge and skills to enhance the functionality or quality of the final product.	Demonstrator is the result of the collaborative effort of all team members throughout the project. Demonstrator is multidisciplinary: perspectives of different disciplines are included. Demonstrator is the sum of the individual parts.	Demonstrator is not yet fully interdisciplinary: perspectives are not yet entirely integrated through interaction. There are no interdependencies between the disciplines.	Demonstrator is interdisciplinary: different (disciplinary) perspectives are integrated through exchange and interaction. The demonstrator goes beyond a simple sum of its (disciplinary) parts.

Course Grading

Assignment 1ZM160	Deliverable	Grade Weight	Deadline
Group assignment in the assigned case	Project report/teamwork	100%	October 24 th 17:00 hours

To **pass** this course, students are required to score on **average 5.5** or higher for the assignments, and **no assignment less than 5.0**.

All assignments can be retaken.

Grade revision can be asked within a week from the communication in canvas.

Those of you who are interested in diving further into the arguments treated in the course can read the recommended reading materials.

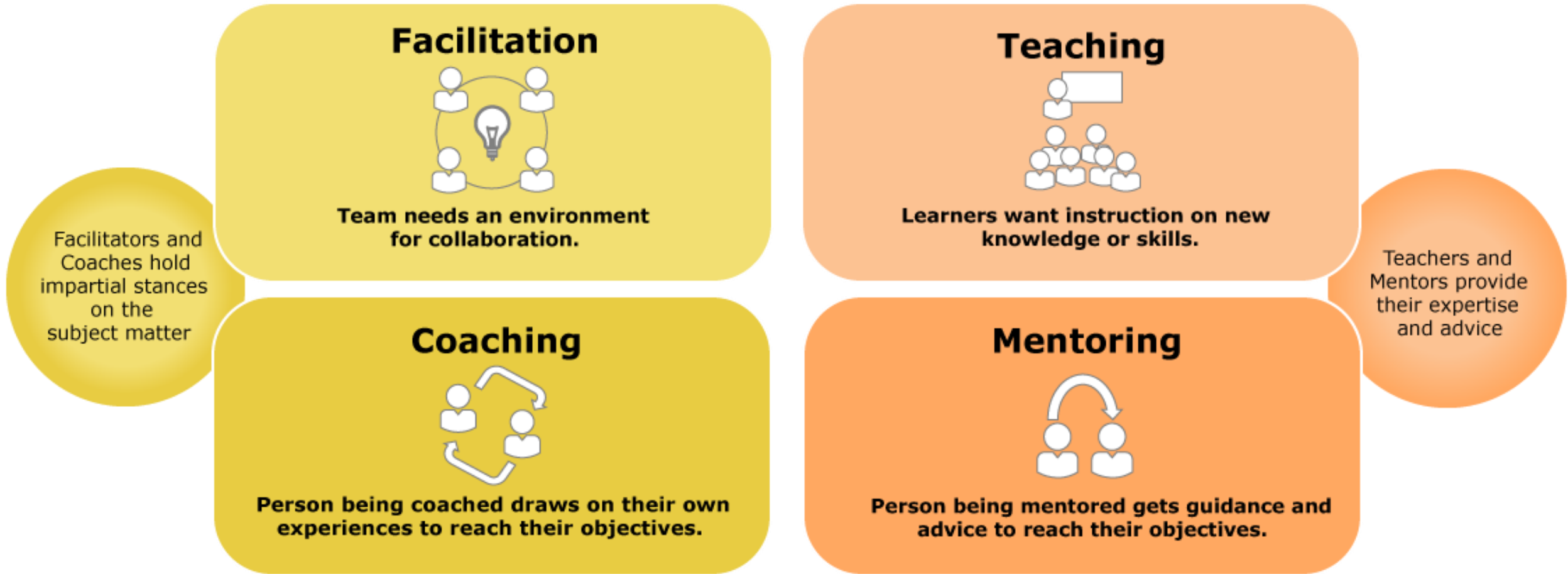
Assessment of Innovation and Entrepreneurship Course

Criterion	Description	Weight
Technology Analysis	The technology is described appropriately considering its innovation components. A wider perspective of the technology and its strengths/weaknesses are described.	10%
USP of selected technology	A comparison with competitive technologies is offered. Concepts are described in correct business-related terms.	15%
Entry barriers	The report provides an analysis of the entry barriers in the market.	15%
Future technology developments	The future technology potential is appropriately described. The business roles that the technology may generate are provided.	15%
Early adopters of the technology	The impact of the technology is assessed and explained. The concept of crossing the chasm is applied in the strategy.	15%
Conclusion	The results of analyzing the technology impact are significant. The results have high added value through original contribution.	20%
Contribution to team-work	How did each team member contributed to the team effort. Tasks, responsibilities and achievement.	10%
TOTAL		100%

innovation Space

Training 2: Coaching in CBL

Coaching and other roles in higher education and at TU/e



Why is coaching is so important in CBL?

- “Coaching as learning” is a key component of Challenge-Based Learning.
- Given the level open-endedness and complexity of challenges, teachers are suggested to find a balance between openness and scaffolding. It appears that this balance is better found when teachers act as coaches, as co-learners and co-creators (van den Beemt et al, 2022).

Coaching in Challenge Based Learning

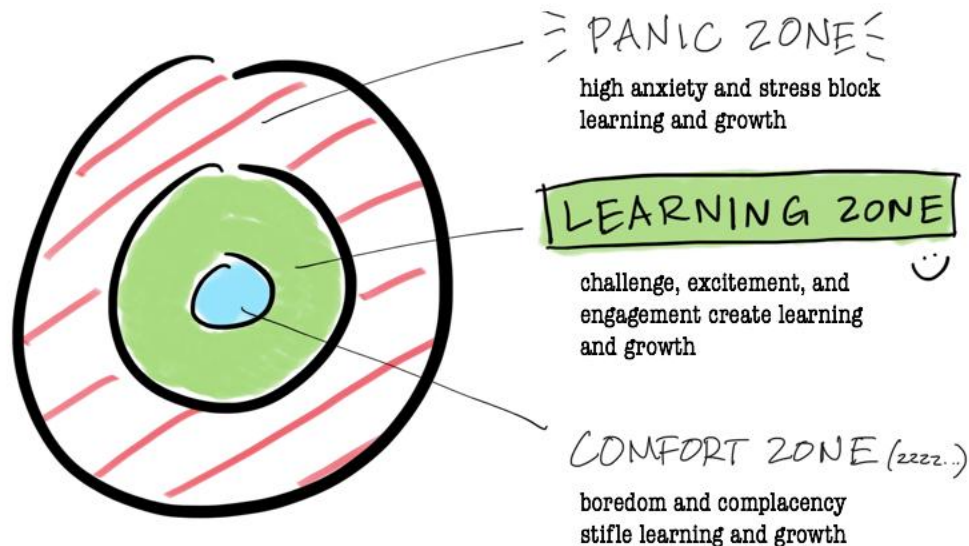
	Problem-based Learning	Project-based Learning	Design-based Learning	Challenge-based Learning
<p>Active learning pedagogies: Link students' academic knowledge with professional practice (problems, tasks, challenges) Student learning is contextual, self-directed and collaborative (Sukacké et al., 2022)</p>				
focus	knowledge acquisition	knowledge application; develop solution	knowledge application; develop solution	knowledge acquisition application and professional skills
type of problem	ill-defined; often fictional	ill-defined	ill-defined	real life challenge (complex) open ended
type of outcome	presentation of knowledge acquisition	product, presentation	product/solution presentation	responsible solution; make a change to community/world
learning activities	disciplinary teamwork during few days	inter/disciplinary teamwork	inter/disciplinary teamwork	interdisciplinary teamwork for weeks/ months
role of teacher	facilitator, tutor, process oriented	facilitator, tutor, product oriented	coach product and process oriented	coach / co-learner

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The psychology of learning

The learning zones



- Psychoeducation: coaches make teams aware that growth happens in the stretch zone.
- The goal is to make the orange zone bigger and the red and green zone zone smaller.
- It is okay to have a panic and comfort zone. Being aware of them and reflect on them is the point of learning.
- Coaching question: what would you be willing to bring over the edge, into the stretch zone? What would that entail?

Exercise:

In pairs, discuss the **Learning Zones framework**: what is in your comfort zone? What sends you in your panic zone? What small experiment could you engage with to expand your growth zone?

Growth vs Fixed mindset



- When people experience the panic zone or the comfort zone, they tend to be in a fixed mindset.
- The stretch zone corresponds to the growth mindset.
- We can't always be in a growth mindset.
- It is important to be aware that we all have both mindset and different situations/contexts trigger the switch from one to another.
- Individuals within a team benefit from knowing what triggers a fixed mindset in themselves and their teammates, to stimulate and be supportive of the switch towards the growth mindset.

Exercise:

In pairs, discuss the **Growth vs Fix Mindset framework**: what beliefs do you have about yourself that are “fixed”? When and from whom did you learn that you were bad/good at.....? Have you ever tried challenging these beliefs? If so, when? What happened? When was the last time you learn from a failure? What was the lesson? On what topics/aspects does feedback feel like a personal attack to you? Tell me about a time you received feedback that helped you grow and develop yourself? What was about that feedback that made a difference?

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Coaching in Teams

The Team Canvas

Most important things to talk about in the team to make sure your work as a group is productive, happy and stress-free

Team Name:

Date:

People & Roles

What are our names and the roles we have in the team?

Goals and Coaching question

What we want to achieve as a group? What are our key goals that are feasible, measurable and time-bounded? How can the coach help us achieve our goal(s)? Formulate your coaching question.

Values

What do we stand for? What are guiding principles? What are our common values that we want to be at the core of our team?

Rules & Action Points

What are the rules we want to introduce after doing this session? How do we communicate and keep everyone up to date? How do we make decisions? How do we execute and evaluate what we do?

Purpose

Why are we doing what we are doing in the first place?

Personal Goals

What are our personal goals that we want to achieve?

Needs & Expectations

What does each one of us need to be successful? What are our personal needs towards the team to be at our best?

Strengths & Assets

What are the skills we have in the team that will help us achieve our goals? What are interpersonal/soft skills that we have? What are we good at, individually and as a team?

Weaknesses & Development Areas

What are the weaknesses we have, individually and as a team? What our teammates should know about us? What are some obstacles we see ahead us that we are likely to face?

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Break

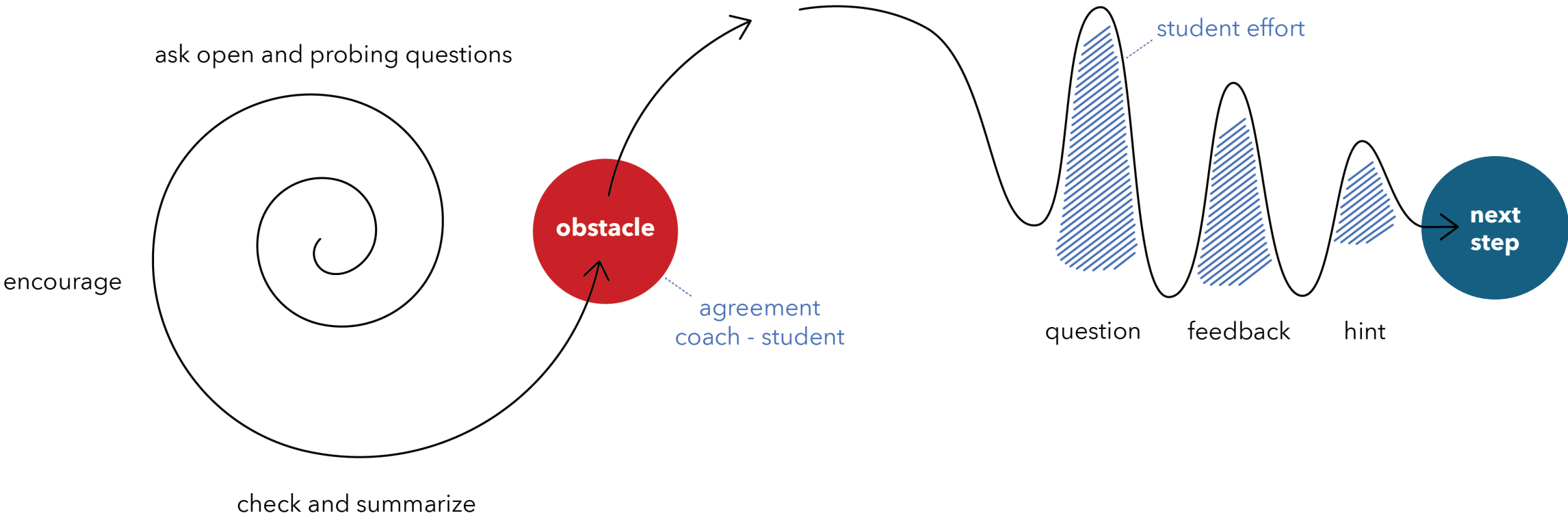
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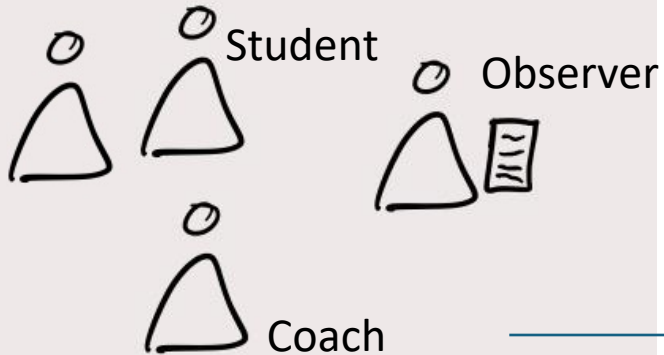
Coaching for learning

PHASE 1 FINDING THE OBSTACLE

PHASE 2 FINDING THE NEXT STEP



Coaching for learning - exercise

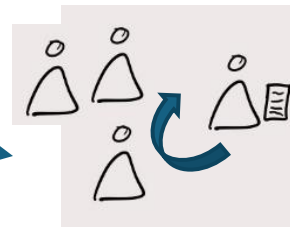


1. Coach chooses **case** to work with
Students can ask questions about case/ their behavior
2. Coach chooses **goal** of conversation (what is the desired outcome)

3. Coach follows **checklist** & observer makes **notes** of conversation – based on checklist – does the coach take all steps?

Conversation over? (4 min)

4. Pfff & feedback by observer: + / - / tip (3 min)
5. Coach retries tip (1 min)
6. Observer compliments coach (1 min)



Reflection questions 1-2-All

- Which elements of the coaching for learning approach require the most delicate balancing act to avoid over-assistance or frustrating the student?
- How do you deal with a student's resistance to guidance that is hindering their progress?
- When providing feedback, what strategies do you use to ensure that your comments are constructive and promote growth rather than discouragement?
- When a student isn't making much progress, how do you figure out if it's because they don't get it, aren't motivated, or have other things going on? What do you do next to help them?

What are your next steps?



What next?

1. Book: Coaching for Learning – Lia Voerman & Frans Faber. In Dutch: *Didactisch coachen*
2. [CBL training offer within the TU/e](#)
3. CBL Teacher Toolkit (under development)
 - [What and Why CBL](#)
 - [CBL Building kit:](#)
4. [Tutor training](#)
5. Training [Supervising](#)

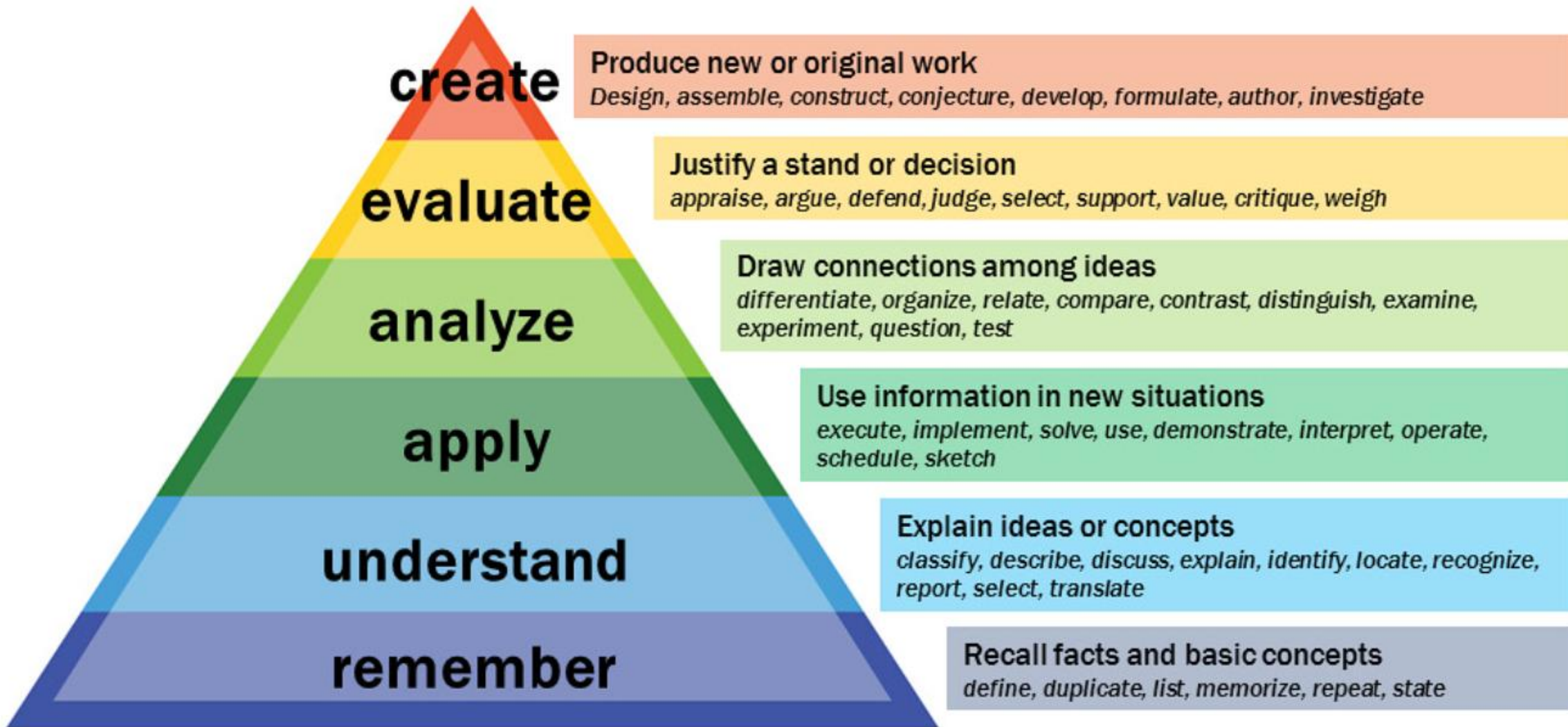
Extra from Marijke van Deelen: The teacher as coach: An innovative, longitudinal training for (bio)medical educators

- <https://repository.ubn.ru.nl/bitstream/handle/2066/290750/290750.pdf?sequence=1&isAllowed=y>

Check-out

(1 word check-out)

Bloom's Taxonomy



Let's keep in touch!



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