

Training practices to enhance learner participation and engagement

ELIXIR-GOBLET Train-the-Trainer - Session 3

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1

DIVERSITY



3

FOSTER
TRUST AND
COLLABORATION



2

ACT ETHICALLY
AND WITH
INTEGRITY



4

RESPECT
AND SHOW
COURTESY TO
EACH OTHER



Welcome to the Session 3 of Train-the-Trainer (Organised by ELIXIR Norway)



We follow ELIXIR
code of conduct



Use the chat function
for questions



Mute yourself while
not speaking



Use the 'hand up'
function if you want
to contribute directly

Disclosure

I am not a pedagogist, I am a scientist/physicist and, like you, I am a trainer on my path to improve my skills.

Recap from Session 2

Write in the shared notes your reflection:

 2-3 minutes

- **one thing that you understood and feel you can put into practice**
- **one thing you are not sure of and would need more clarification in.**



Write in the shared notes for the session 3

Learning outcomes

By the end of this session, you will be able to:

- Describe what makes training effective.
- Describe what makes a trainer effective.
- Identify strategies that facilitate active, interactive, and collaborative learning.
- List factors of motivation and demotivation.
- Evaluate what instructors can do to motivate and avoid demotivating learners.

Key:



Shared notes



Break time



Group Activity
(Breakout room)

Evidence-based learning principles

- P1: Students' **differences** influence their world view, their learning, and their performance.
- P2: **Prior knowledge** can help or hinder learning.
- P3: The **organization of knowledge** influences how students learn and apply what they know.
- P4: **Motivation** determines, directs, and sustains what students do to learn.
- P5: To develop **mastery**, students must:
- acquire **component skills**
 - practice **integrating** them
 - know when to **apply** what they've learned
- P6: **Goal-directed practice** with **targeted feedback** enhances the quality of learning.
- P7: The **classroom environment** we create profoundly affects learning, positively or negatively.
- P8: To become self-directed learners, students must learn to **monitor and adjust** their approaches.

Today's plan:

1. Effective training and trainers
2. Active learning
3. Classroom practices: discussion
4. Motivation
5. Demotivation

Effective instruction:

1. aligns with learning outcomes
2. actively engages learners
3. is designed well

Effective instruction:

1. set clear learning outcomes
2. identify appropriate learning experiences
3. are accessible, engaging, empathetic, and inspiring



Challenge 3.1 (8 min + 4 to discuss)

What makes training effective and a trainer good?

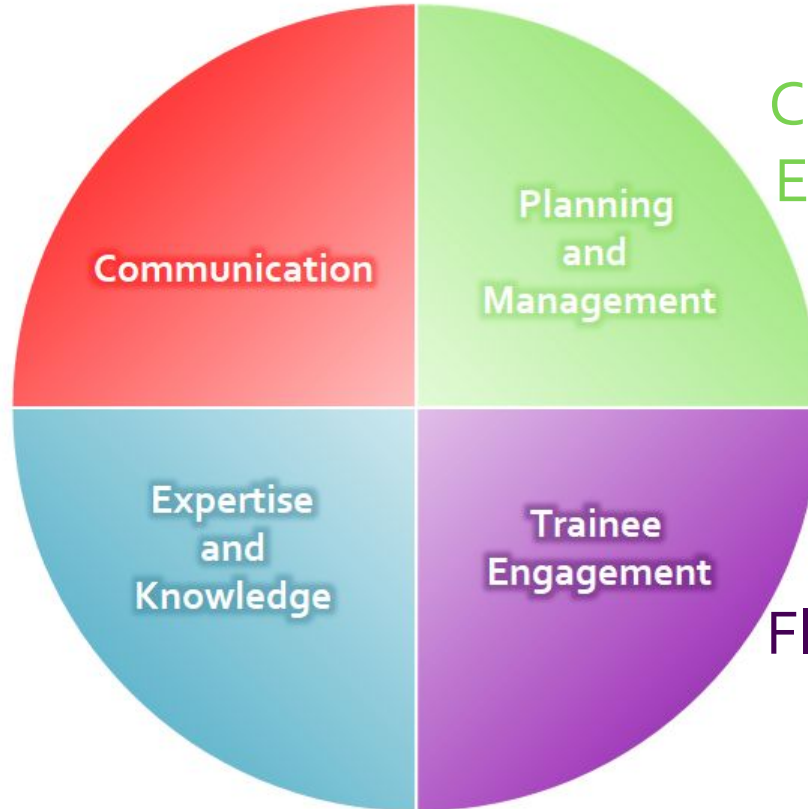
Recall concrete examples of your past training experience (as a trainer or a learner). Share these with your group.

Write 3 keywords that describe effective training.

Write 3 keywords that describe a good trainer.

GOBLET skills matrix for trainers

Verbal
Written
Presentation



Session planning
Curriculum planning
Event management

Domain
User application
Training methods

Flexibility in delivery
Empathy
Understanding

Communication

1. Verbal
2. Written
3. Presentation

Planning and management

1. Sessions
2. Curriculum
3. Events

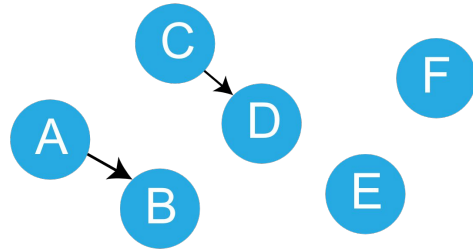
Trainee engagement

1. Flexibility
2. Empathy
3. Understanding

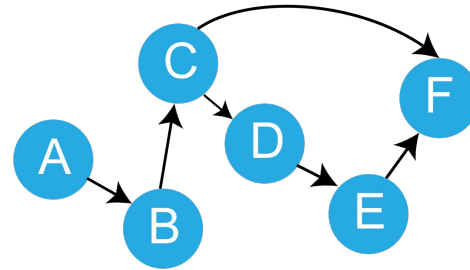
Expertise and knowledge

1. Domain knowledge
2. User application awareness
3. Training methods

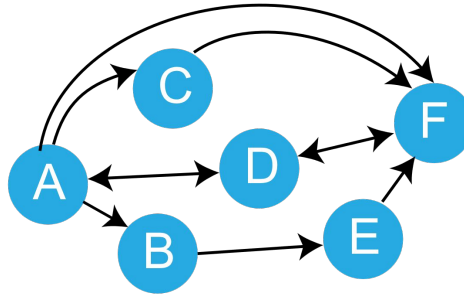
Expert teachers



Novice

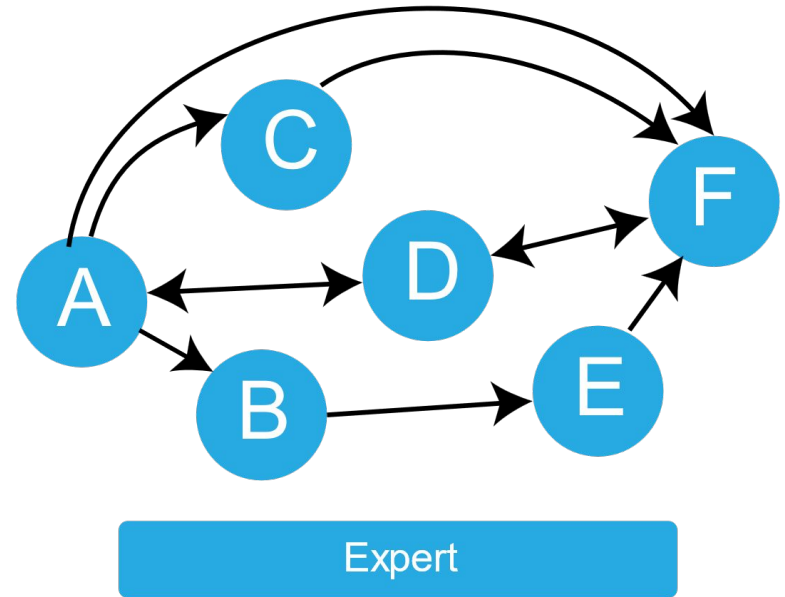
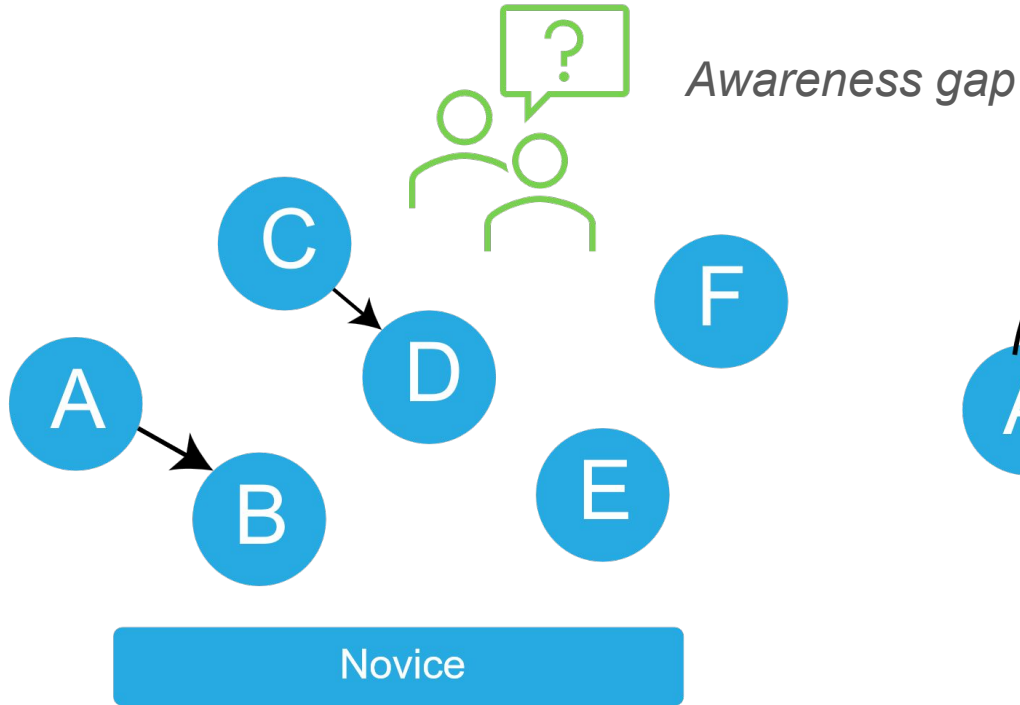


Competent Practitioner



Expert

Mind the gap





Challenge 3.3 (5 min + 3 to discuss)
Reflect on your skills as a trainer

Self-evaluation:

Which skill area(s) do you feel you do well?

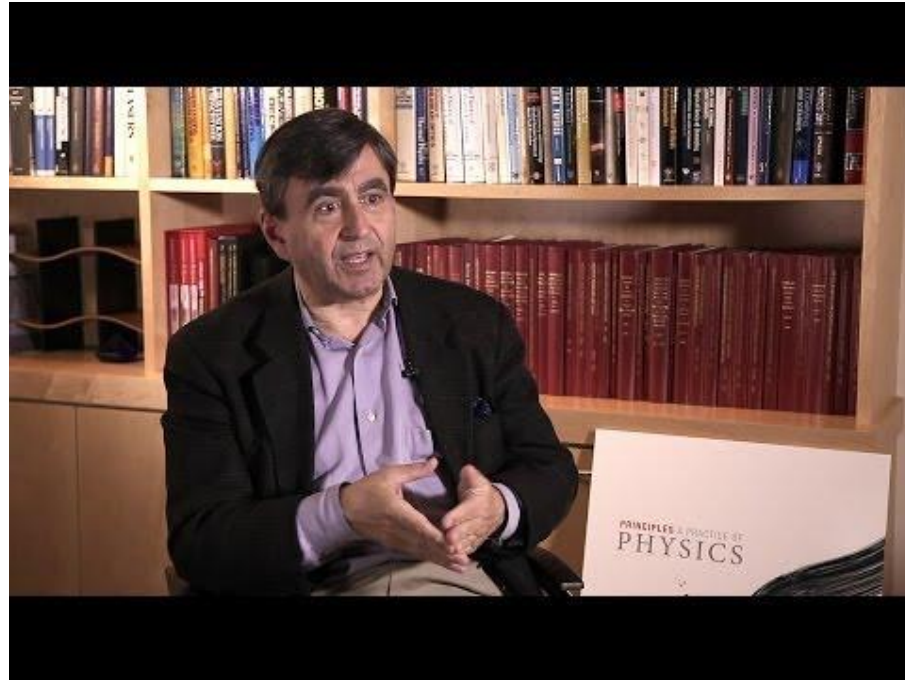
Which area(s) do you need to improve?

Write about your strengths and weaknesses in
each section (communication, planning,
expertise, engagement) of the GOBLET matrix.

BREAK (10 min)



From traditional lecturing to active learning



A paradigm change – Professor Eric Mazur, Physics, Harvard University



Challenge 3.2 (3 min + 2 to discuss)
Reflect on Mazur's interview

What impact did Mazur's interview have on you?

Active, interactive, and collaborative learning

Active learners:

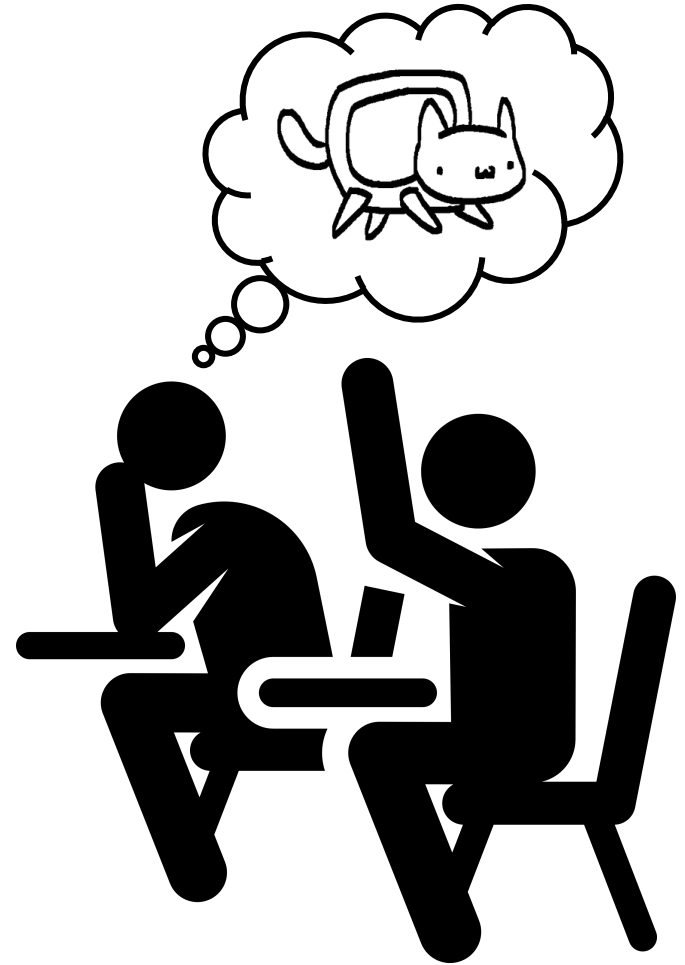
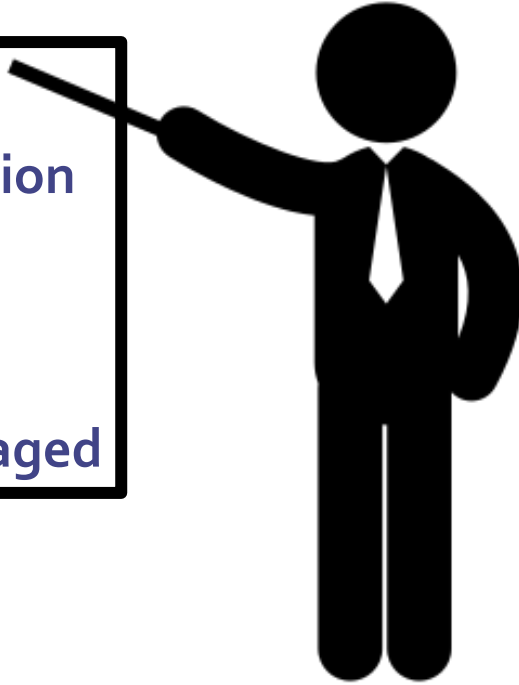
learn better

retain information longer

can apply knowledge

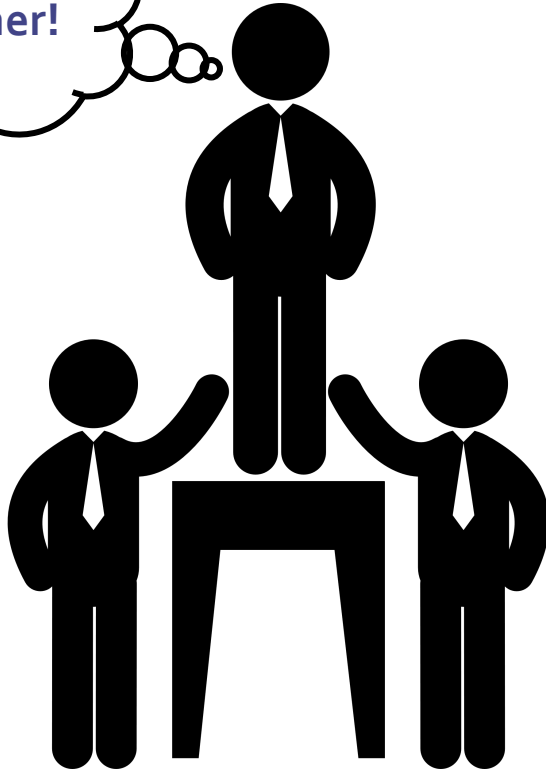
The traditional lecture

teacher-centric
teaching by transmission
few interactions
few questions
same few learners engaged



The active lecture

Oh trainer,
my trainer!



learner-centric
teaching by questioning
collaborative
interactive and engaging
discussion-based

Choosing appropriate teaching practices

teaching goals

Bloom's level

learning outcomes

Highest Bloom's level supported by LEs

Create	Peer instruction, group discussion, group work, problem-solving
Evaluate	
Analyze	exercise, practical, flipped classroom
Apply	
Understand	lecture, webinar
Remember	

Learning experience	Highest Bloom's levels supported	Example TG(s) <i>This LE will allow me to...</i>	Example LO(s) <i>Learners will be able to...</i>
Lecture, webinar	Remember, Comprehend	Inspire learners, ignite learners' enthusiasm, clarify/explain a concept, provide an overview, give context, summarise content	<ul style="list-style-type: none"> • <i>list</i> the key points of the lecture/webinar • <i>summarise</i> take home message(s)
Exercise, practical	Apply, Analyse	Help learners digest course materials, solve typical problems, apply knowledge, show how to do things with appropriate guidance, give an idea of how a tool works	<ul style="list-style-type: none"> • <i>follow</i> a set of instructions or protocol • <i>calculate</i> a set of results or outcomes from a given protocol
Flipped class	Apply, Analyse	Teach learners how to formulate questions, help learners to memorise new information & concepts, or analyse & understand course materials	<ul style="list-style-type: none"> • <i>summarise</i> the content material • <i>ask</i> appropriate questions
Peer instruction	Synthesise, Evaluate	Prepare learners to defend an argument, give learners opportunities to explain things, thereby helping to develop critical thinking & awareness	<ul style="list-style-type: none"> • <i>explain</i> how they solved an exercise • <i>evaluate</i> others' choices/decisions • <i>diagnose</i> errors in the exercise-solving task
Group discussion	Synthesise, Evaluate	Give learners opportunities to practice questioning, develop new ideas & critical thinking	<ul style="list-style-type: none"> • <i>communicate</i> their own ideas • <i>defend</i> their own opinions
Group work	Synthesise, Evaluate	Promote collaborative work & peer instruction, provide opportunities for giving/receiving feedback, & digesting course materials	<ul style="list-style-type: none"> • <i>provide feedback</i> on their peers' work • <i>share</i> ideas • <i>explain the advantages of team-work</i>
Problem-solving	Synthesise, Evaluate	Promote learner abilities to identify & evaluate solutions, develop new ideas, make decisions, evaluate decision effectiveness, troubleshoot	<ul style="list-style-type: none"> • <i>diagnose</i> faulty reasoning or an underperforming result • <i>correct</i> errors

Peer instruction



Introduce the topic.

Multiple-choice probe for misconceptions.

Vote on the answer.

If everyone has it right, move on.

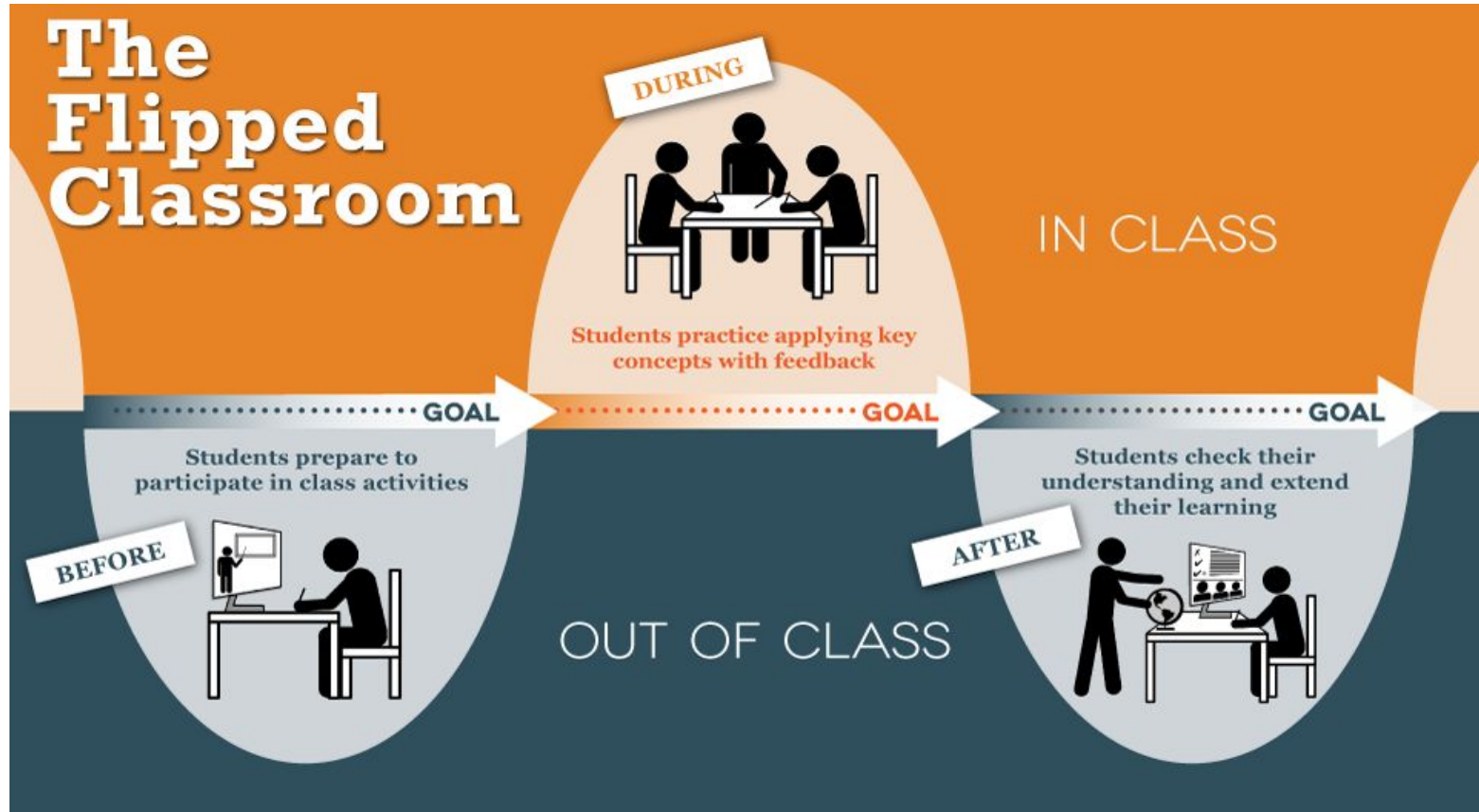
If everyone has it wrong, address the error.

If mixed, let them argue in small groups.

Vote again..

<https://www.youtube.com/watch?t=1&v=2LbuoxAy56o>

Flipped classroom



More active learning

Q&A

Think, pair, share

Shared notes

Pair programming

Brainstorming

Hands-on

Learners make predictions



Challenge 3.4 (4 min + 10 to discuss)

Evaluate strategies for active learning

Classify the list of active learning strategies into **practiced (P)**, **known (K)**, and **unknown (U)**.



Challenge 3.5 (5 min + 5 to discuss)

Teaching practices and Bloom's levels

In groups, identify the highest Bloom's level supported by each technique.

Recap: learning experiences

goals + complexity + LOs -> LEs

check alignment

learn by doing

support interactivity, engagement, collaboration

frequent feedback

Discussion: practical tips

Practices and behaviors supporting interaction:

- start with introductions/icebreakers
- sitting in a circular setting
- name tags
- collaborative learning techniques (think, pair share)
- group dynamics
- call out as a group

Practices and behaviors supporting a positive and engaging environment:

- learn names (and use them)
- frequent short breaks or meditation
- showing vulnerability to connect with others
- mixing groups
- giving people roles/way to participate
- making failure ok
- making it fun

Practices and behaviors supporting active and collaborative learning:

- let learners recap the material
- reversing the roles – one becomes the teacher/listener then reverse

Practices and behaviors supporting stimulating lessons:

- challenges or games
- teach together
- multimodal – have a change of voice - discussion

Motivation

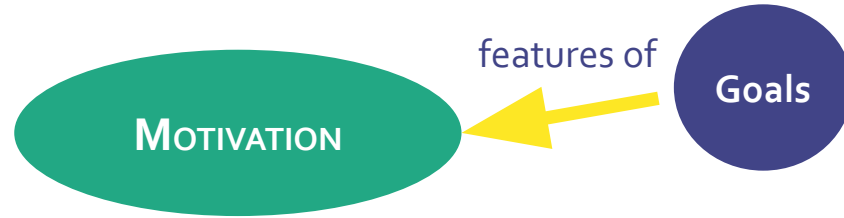


Challenge 3.6 (3 min + 5 to discuss)

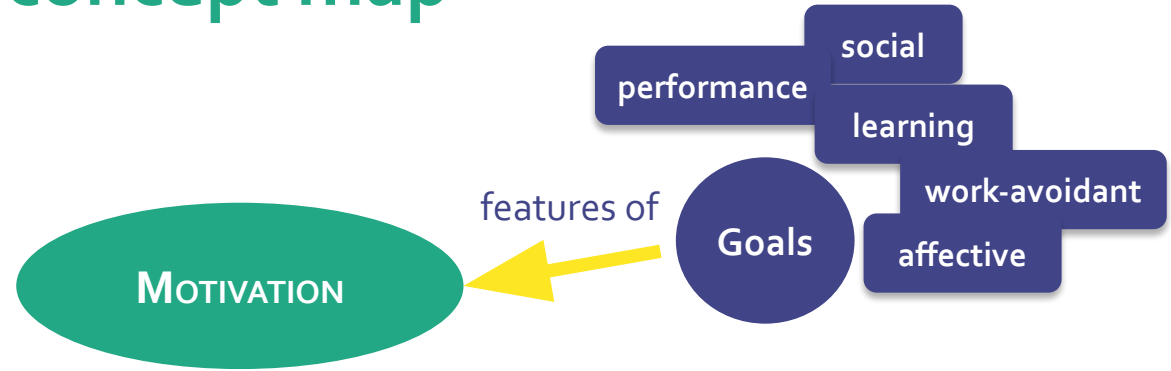
Recall a motivating learning experience

Write about a motivating experience in your life
(as a learner) and how it impacted you.

Motivation concept map



Motivation concept map



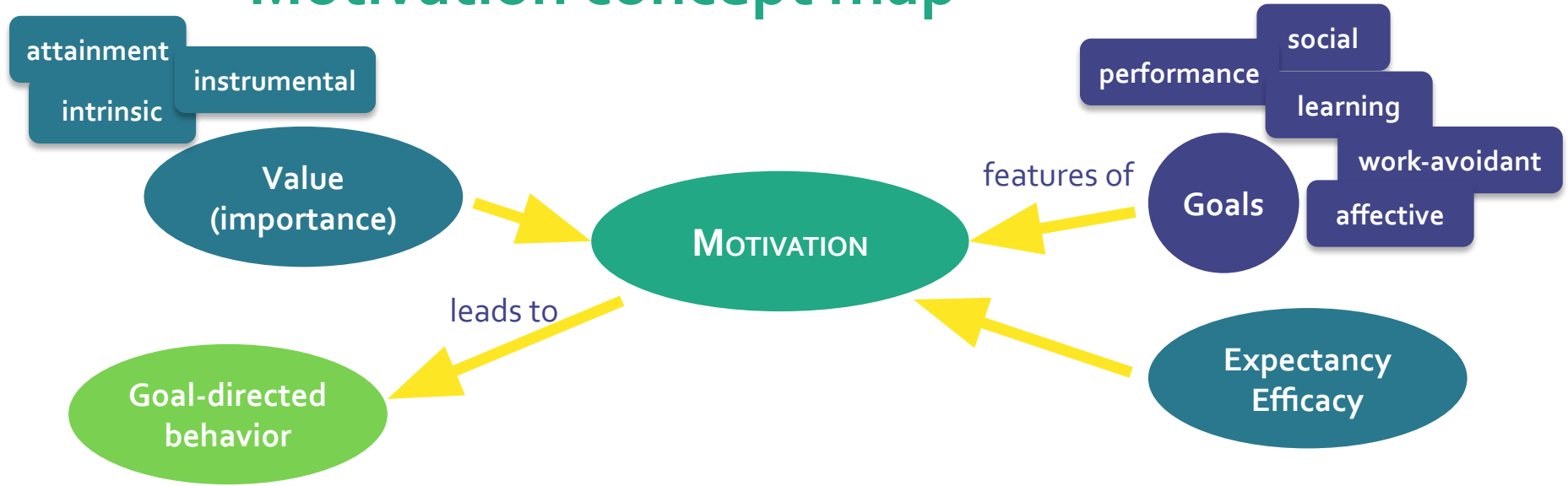
Motivation concept map



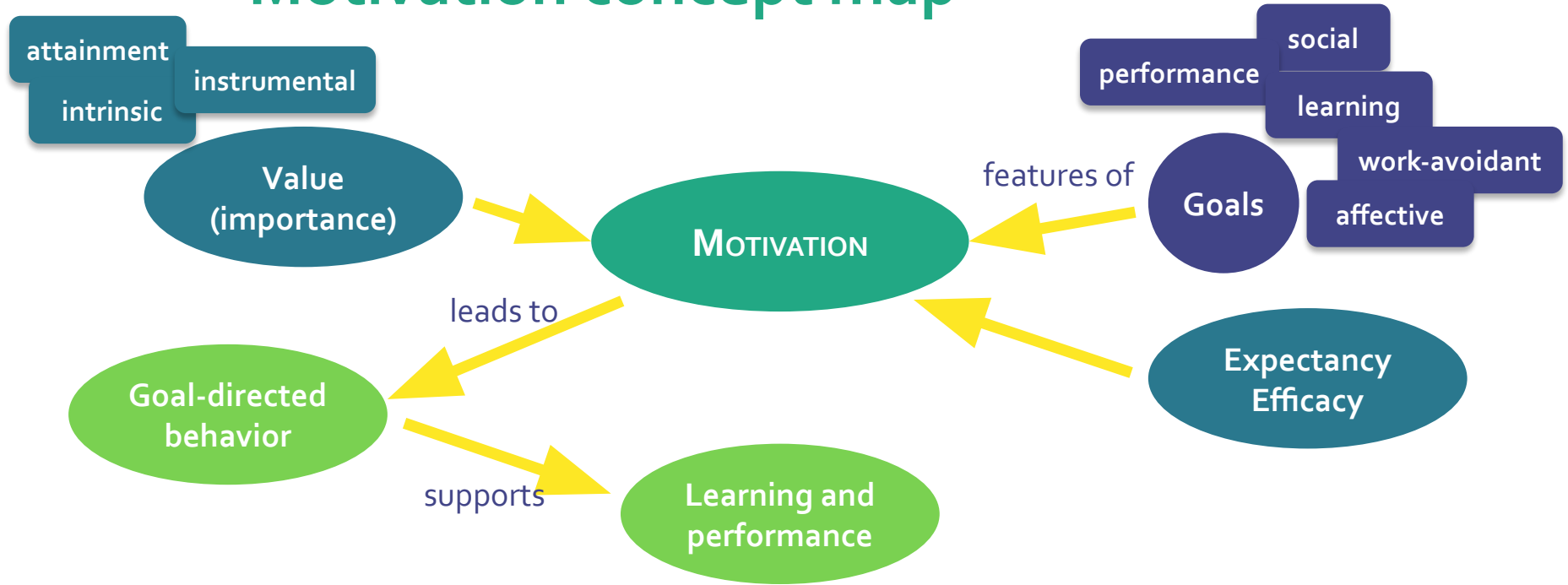
Motivation concept map



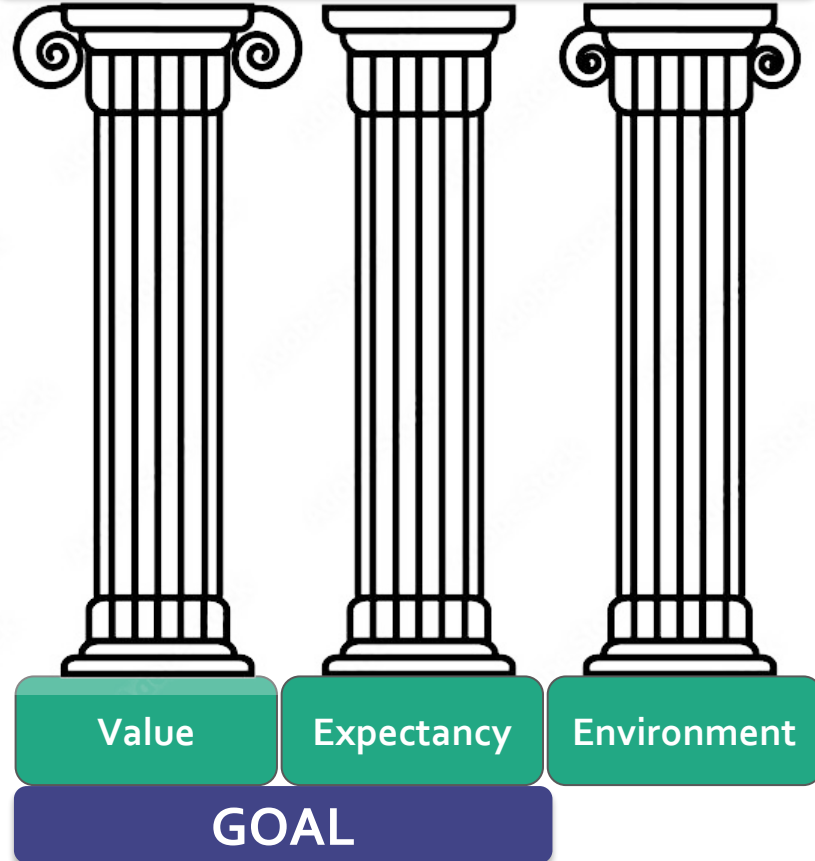
Motivation concept map



Motivation concept map



MOTIVATION



The learning environment

P1: Students' differences influence their world view, their learning, and their performance.

P7: The classroom environment we create profoundly affects learning, positively or negatively.

Considerations:

discrimination and inclusivity

stereotypes

class dynamics

accessibility

mindset

<https://carpentries.github.io/instructor-training/09-eia.html>

Interactive effects on motivation

Environment is NOT SUPPORTIVE		Environment is SUPPORTIVE	
DON'T SEE Value		DON'T SEE Value	SEE Value
Student's efficacy is ... HIGH	LOW Rejecting	Hopeless	Fragile
	Evading	Defiant	Motivated

Demotivation



Challenge 3.7 (3 min + 5 to discuss)

Recall a demotivating learning experience

Write about a demotivating experience in your life (as a learner) and how it impacted you.

Things to avoid as an instructor

- putting students down
- criticizing users' technology or applications
- pretending to be knowledgeable
- delivering long, unidirectional lectures
- engaging only 1 or 2 learners
- using diminishing language (just, simply, obviously)
- hindering autonomy
- feigning surprise at ignorance
- early criticisms have a domino effect

Strategies to improve motivation and avoid demotivation

Increasing learners' motivation

Establish value

connect material to interests

provide real-world tasks

show relevance to professional lives

identify and reward what you value

share your passion and enthusiasm

Increasing learners' motivation

Build positive expectancies

ensure alignment of all strategies

identify appropriate challenges

provide opportunities for early success

articulate expectations

provide rubrics and feedback

be fair

Increasing learners' motivation

Create a supportive environment

address discrimination (Code of Conduct)

avoid stereotypes

remove accessibility limitations

promote growth mindsets

provide learners with choices

give opportunities to reflect

Challenge 3.8 (12 min + 8 to discuss)

Strategies to improve motivation

Read the strategies to increase learner motivation and avoid demotivation.

Pick 1 strategy for each group; write about a concrete example of how it could be implemented in the classroom.

See you at Session 4!

Kindly fill out minute cards (before you go)

Homework

Warm-up for the next session

Read [Random Thoughts](#)

(a reflection on the book How Learning Works).

**Write a question you have
in the shared notes.**

References

Anderson LW, Krathwohl DR. A taxonomy for learning, teaching, and assessing: a revision of Bloom's taxonomy of educational objectives.

(Here, they use the terms global, educational, and instructional objectives, but they match up with the current descriptions of teaching goals, KSAs, and learning outcomes).

Watson E, Busch B. A parent's guide to the science of learning: 77 studies that every parent needs to know.

Thank you!



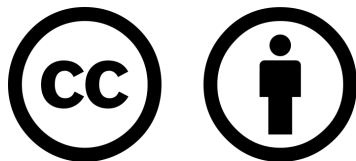
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