Welcome to Day 3!

Train the Trainer:
Training practices to enhance learner participation and engagement

SciLifeLab Training Hub - Spring 2024

Course Leader - Jill Jaworski

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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.

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:

Effective training and trainers

Active learning

Classroom practices: discussion

Motivation

Demotivation

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Effective instruction:

aligns with learning outcomes

actively engages learners

is designed well

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Effective instructors:

set clear learning outcomes

identify appropriate learning experiences

are accessible, engaging, empathetic, and inspiring

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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.

Jot down 3 keywords that describe effective training.

Jot down 3 keywords that describe a good trainer.

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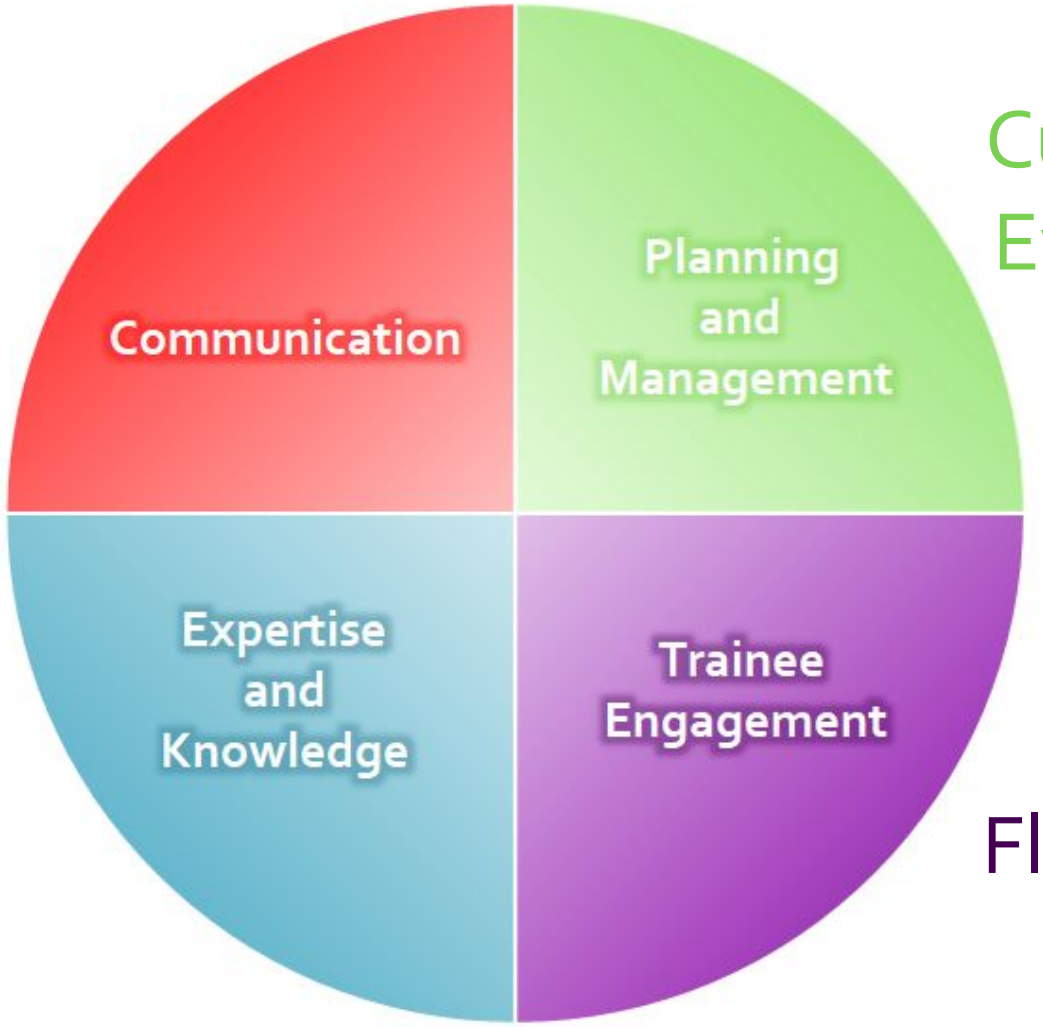
GOBLET skills matrix for trainers

Verbal
Written
Presentation



Session planning
Curriculum planning
Event management

Domain
User application
Training methods

Flexibility in delivery
Empathy
Understanding

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Communication

verbal

written

presentation

Planning and management

sessions

curriculum

events

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Trainee engagement

flexibility

empathy

understanding

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Expertise and knowledge

Domain knowledge

User application awareness

Training methods

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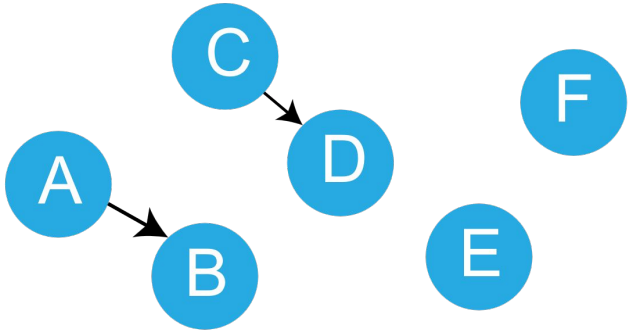
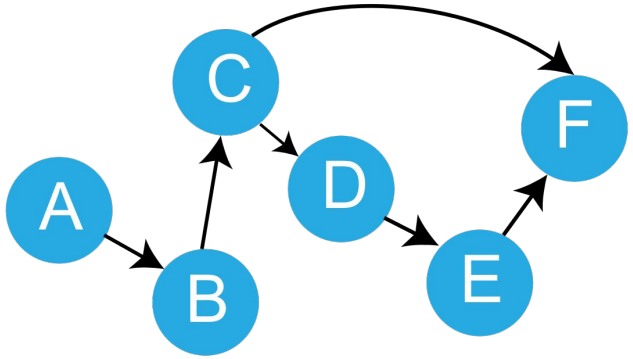
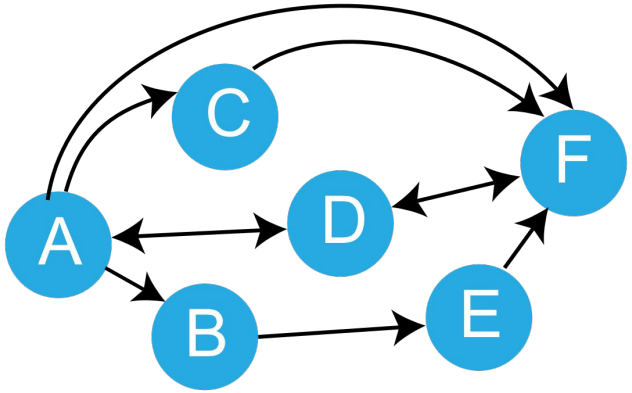
Expert teachers



Novice



Competent Practitioner



Expert

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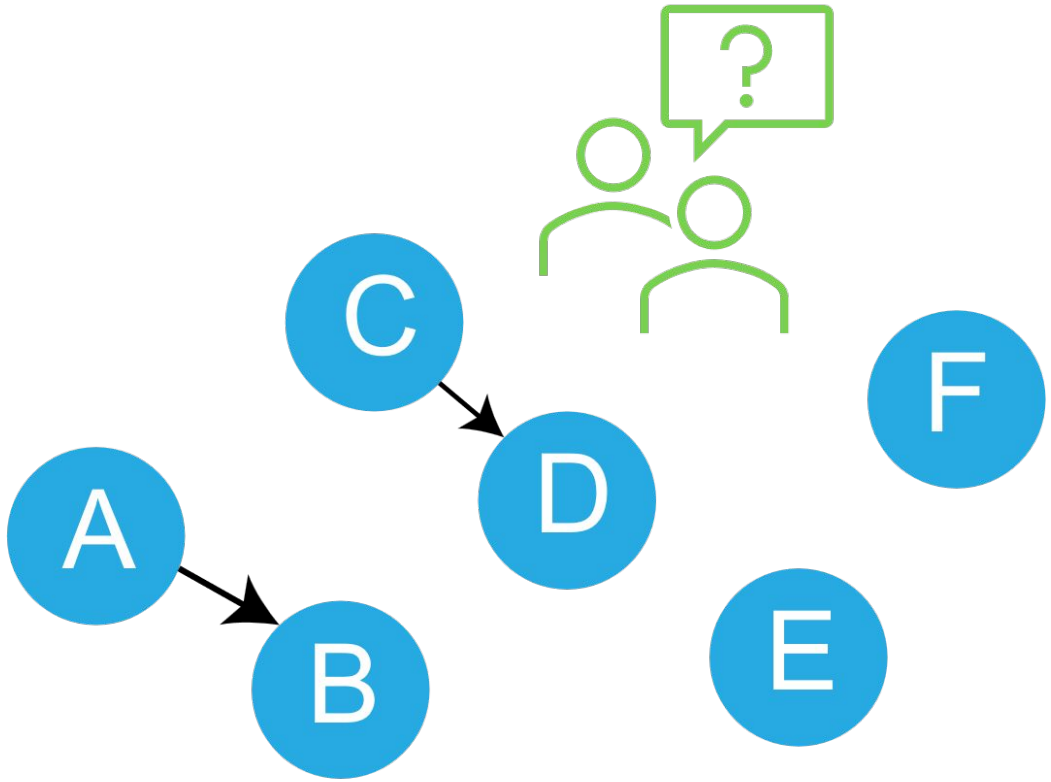
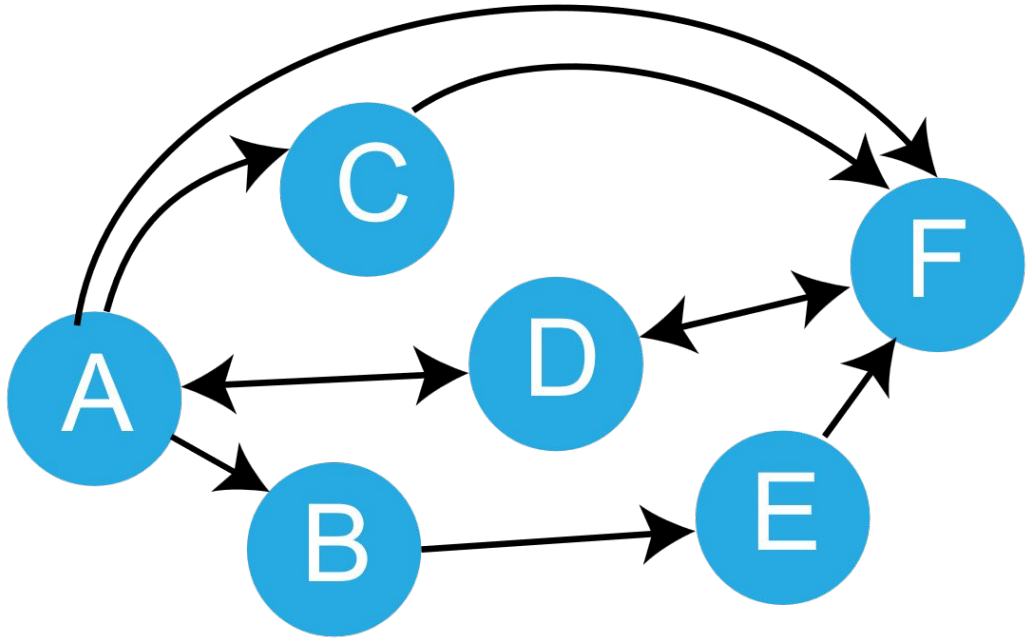
Mind the gap… the awareness gap



Novice



Expert

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Challenge 3.3 (5 min + 3 to discuss)

Reflect on your skills as a trainer

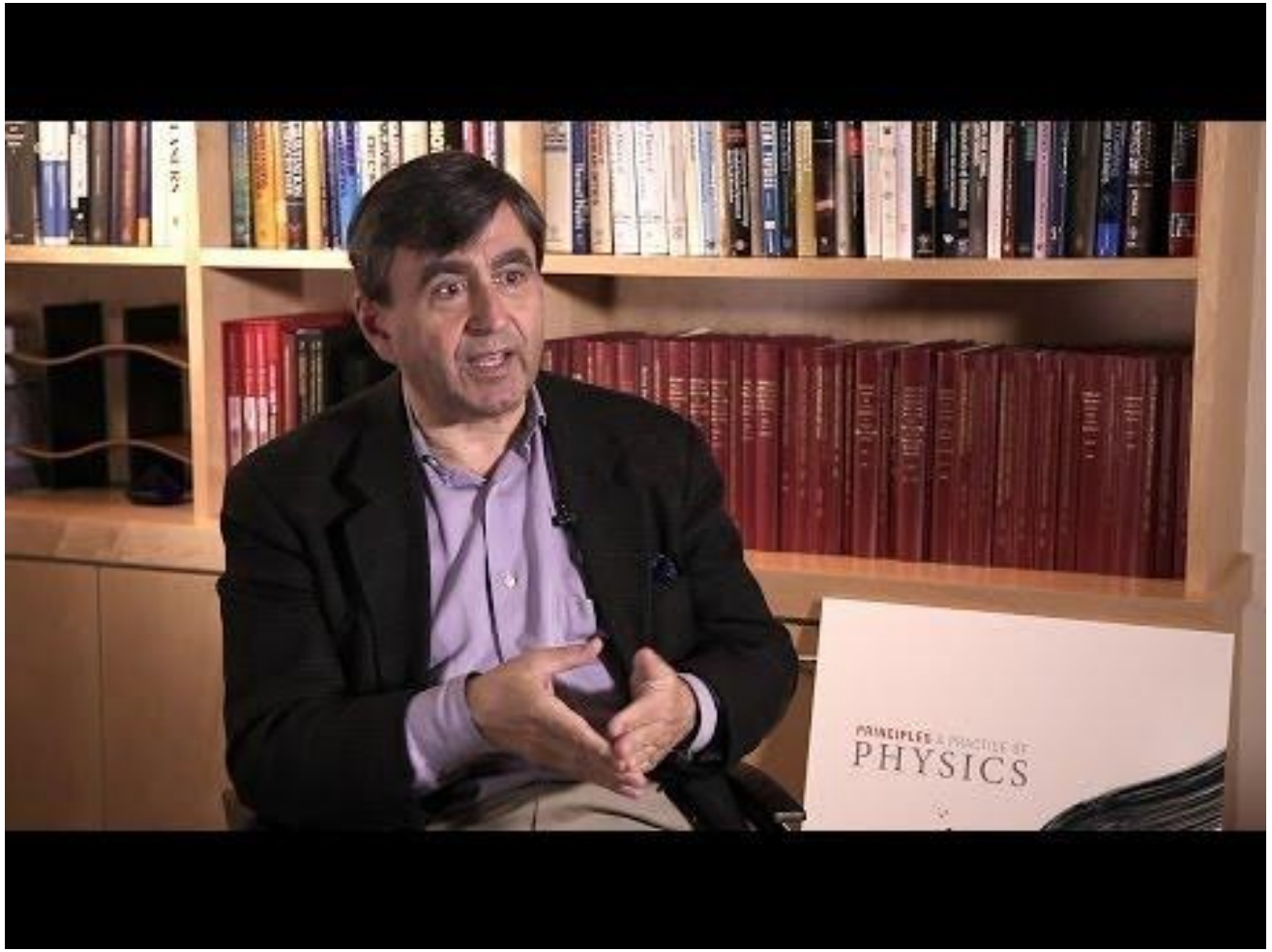
Self-evaluation:

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.

From traditional lecturing to active learning



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

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Challenge 3.2 (3 min + 2 to discuss)

Reflect on Mazur's interview

What impact did Mazur's interview have on you?

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Active, interactive, and collaborative learning

Active learners:

learn better

retain information longer

can apply knowledge

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The traditional lecture

teacher-centric

teaching by transmission

few interactions

few questions

same few learners engaged

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The active lecture

learner-centric

teaching by questioning

collaborative

interactive and engaging

discussion-based

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Choosing appropriate teaching practices

teaching goals

Bloom’s level

learning outcomes

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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	

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Learning experience	Highest Bloom's levels supported	Example TG(s) *This LE will allow me to…*	Example LO(s) *Learners will be able to…*
Lecture, webinar	Remember, Comprehend	Inspire learners, ignite learners' enthusiasm, clarify/explain a concept, provide an overview, give context, summarise content	• *list* the key points of the lecture/webinar • *summarise* 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	• *follow* a set of instructions or protocol • *calculate* 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	• *summarise* the content material • *ask* 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	• *explain* how they solved an exercise • *evaluate* others' choices/decisions • *diagnose* errors in the exercise-solving task
Group discussion	Synthesise, Evaluate	Give learners opportunities to practice questioning, develop new ideas & critical thinking	• *communicate* their own ideas • *defend* their own opinions
Group work	Synthesise, Evaluate	Promote collaborative work & peer instruction, provide opportunities for giving/receiving feedback, & digesting course materials	• *provide feedback* on their peers' work • *share* ideas • *explain the advantages of team-work*
Problem-solving	Synthesise, Evaluate	Promote learner abilities to identify & evaluate solutions, develop new ideas, make decisions, evaluate decision effectiveness, troubleshoot	• *diagnose* faulty reasoning or an underperforming result • *correct* errors

Course design – Considerations for trainers, Via A., Palagi PM, Lindvall JM, Tractenberg RE, Attwood TK, The GOBLET Foundation (2020)

BREAK (10 min)

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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..

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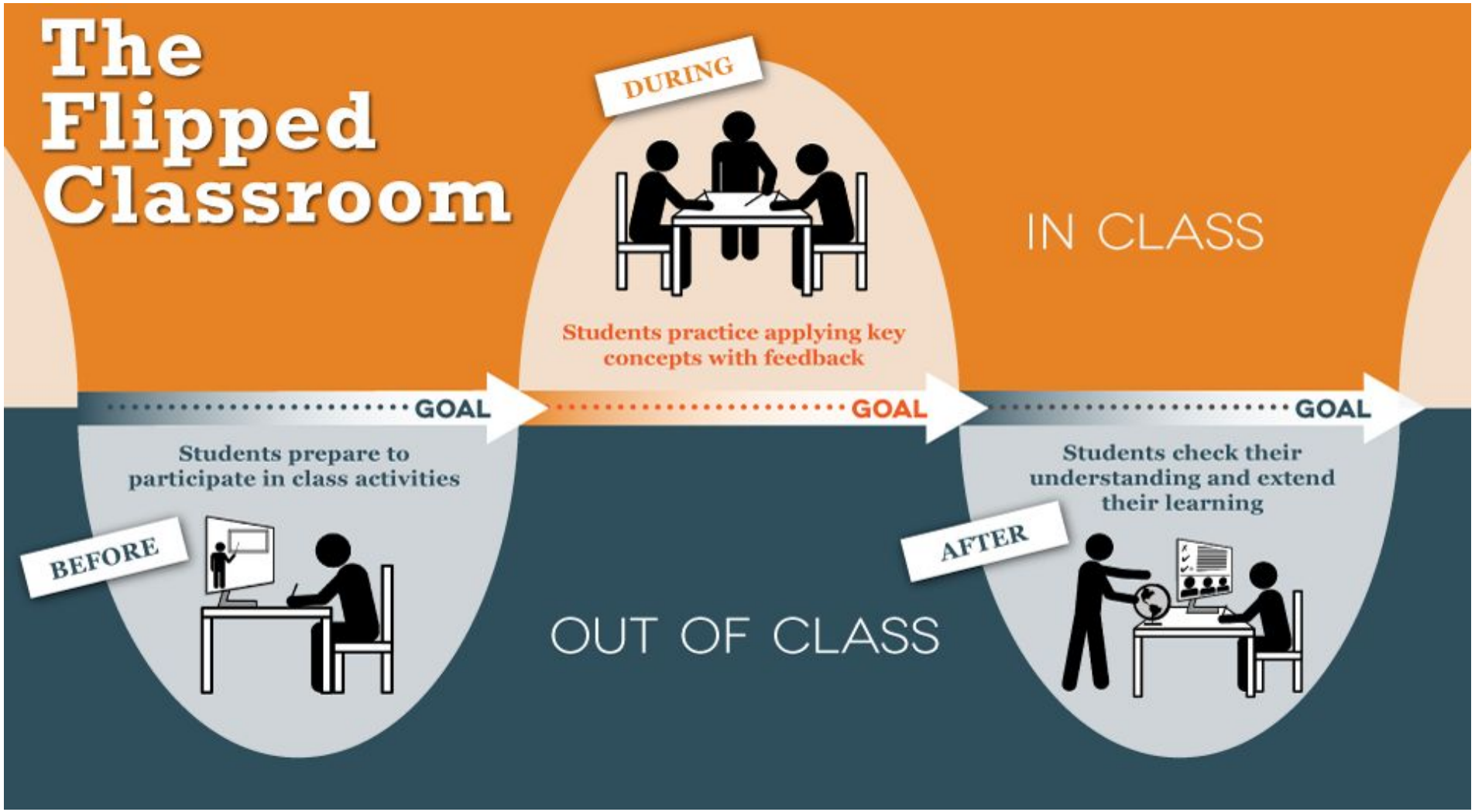
https://www.youtube.com/watch?t=1&v=2LbuoxAy560

Flipped classroom



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More active learning

Q&A

Think, pair, share

Shared notes

Pair programming

Brainstorming

Hands-on

Learners make predictions

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Challenge 3.4 (4 min + 10 to discuss)

Evaluate strategies for active learning

Q&A
Think, pair, share
Shared notes
Pair programming
Brainstorming
Hands-on
Learners make predictions

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

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More active learning

Q&A

Think, pair, share

Shared notes

Pair programming

Brainstorming

Hands-on

Learners make predictions

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Challenge 3.5 (5 min + 5 to discuss)

Teaching practices and Bloom's levels

Q&A

Think, pair, share

Shared notes

Pair programming

Brainstorming

Hands-on

Learners make predictions

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

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Discussion: practical tips

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Practices and behaviors supporting interaction

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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

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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

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Practices and behaviors supporting active and collaborative learning

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

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Practices and behaviors supporting stimulating lessons

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Practices and behaviors supporting stimulating lessons

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

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BREAK (5 min)

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Motivation

Challenge 3.6 (3 min + 5 to discuss)

Recall a motivating learning experience

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

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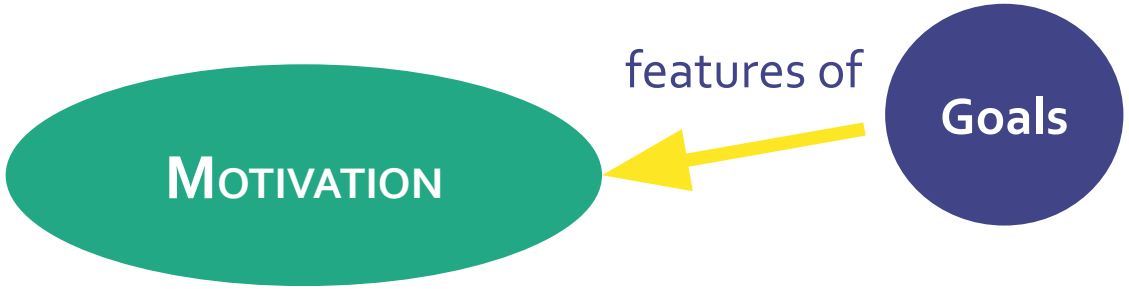
Motivation concept map



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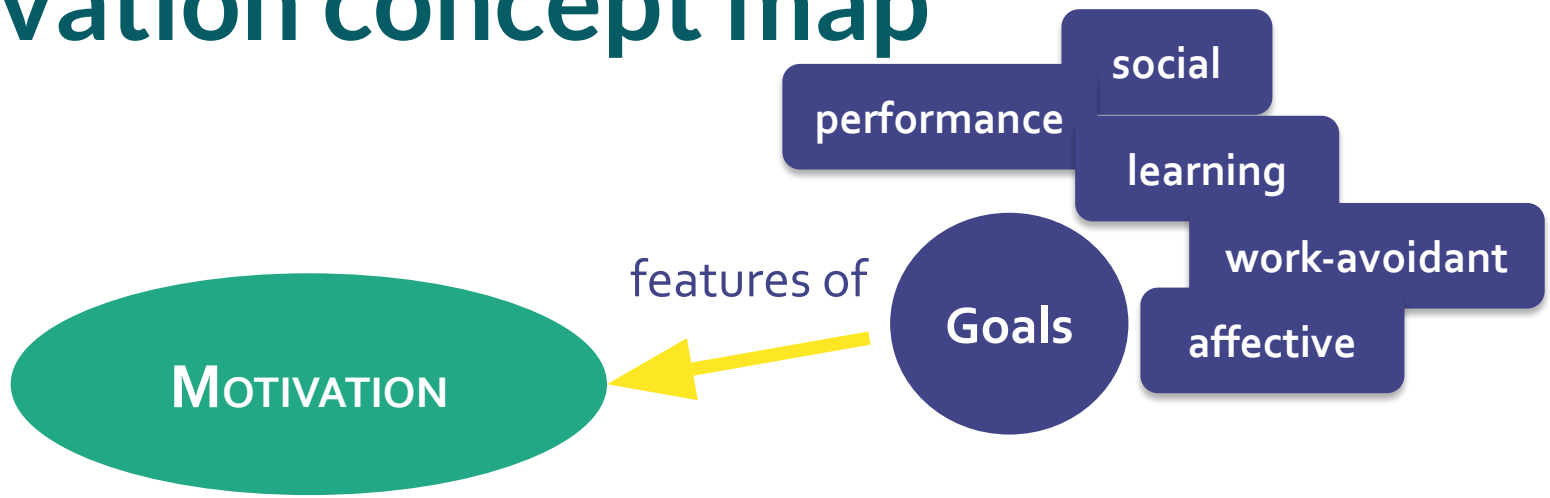
Motivation concept map



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Motivation concept map

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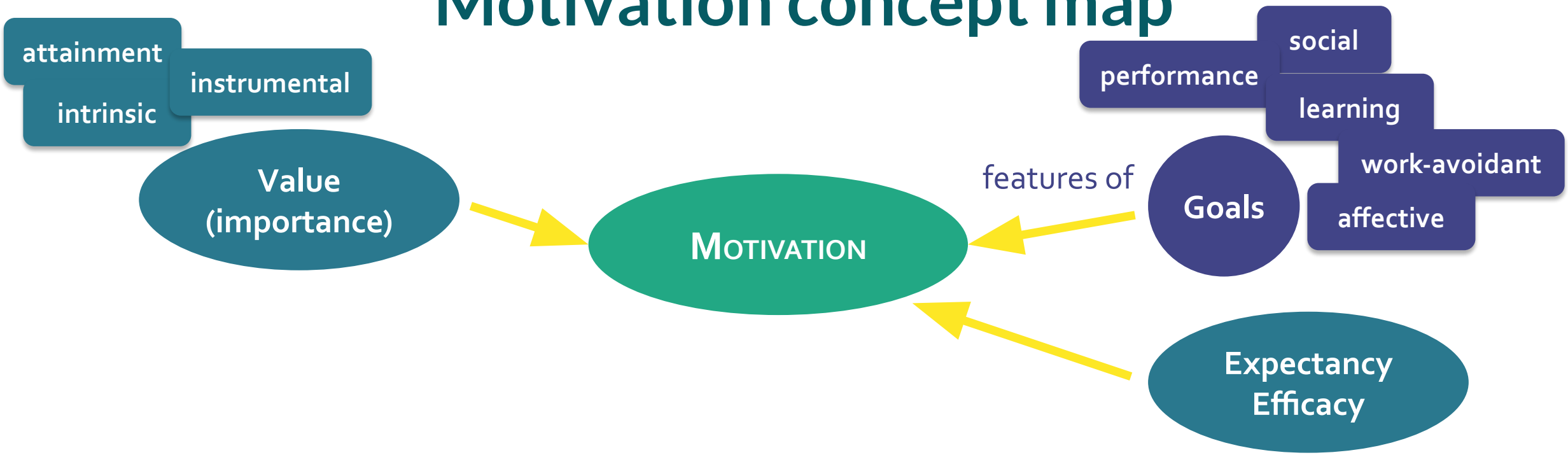
Motivation concept map



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Motivation concept map

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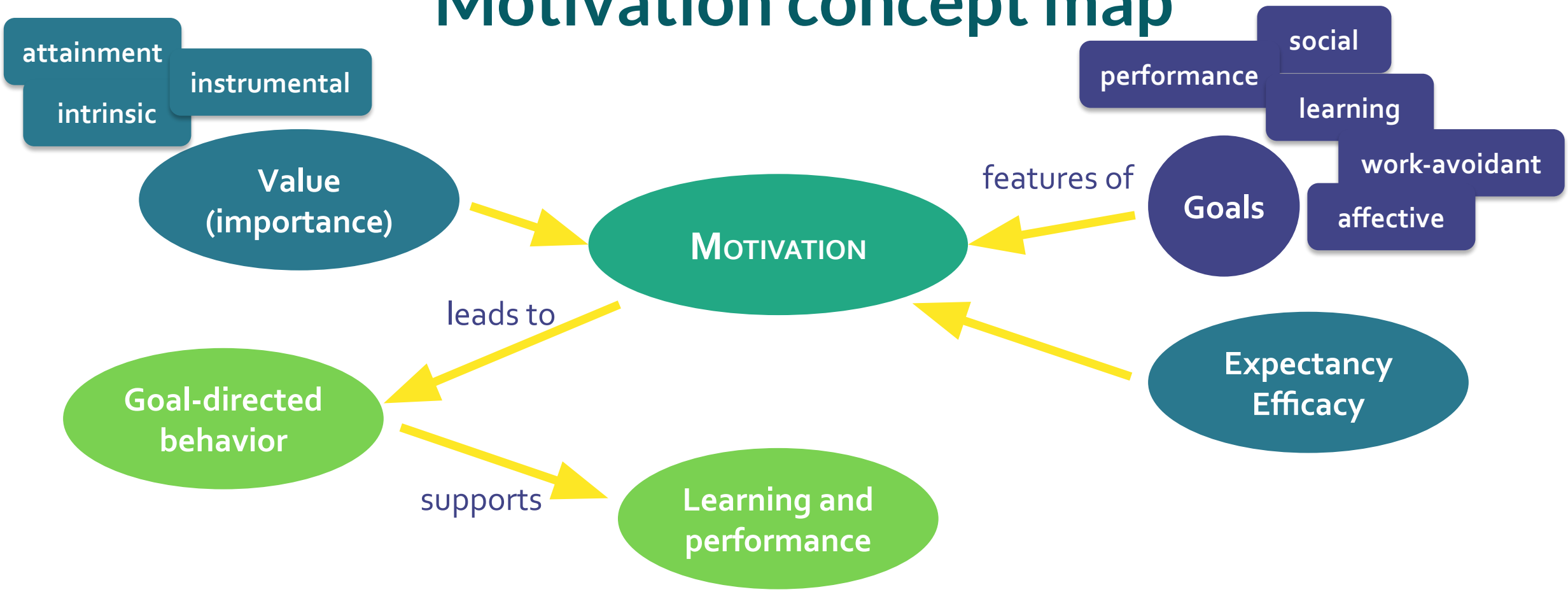
Motivation concept map



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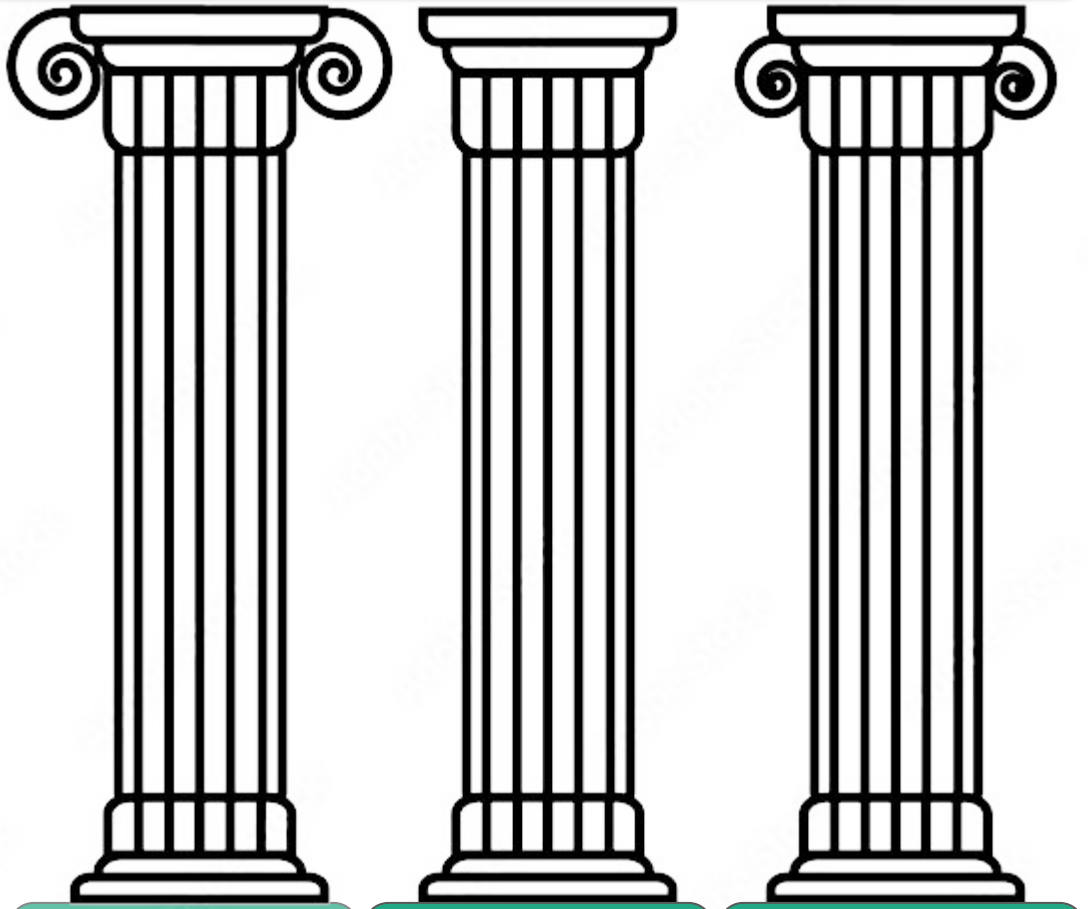
MOTIVATION



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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

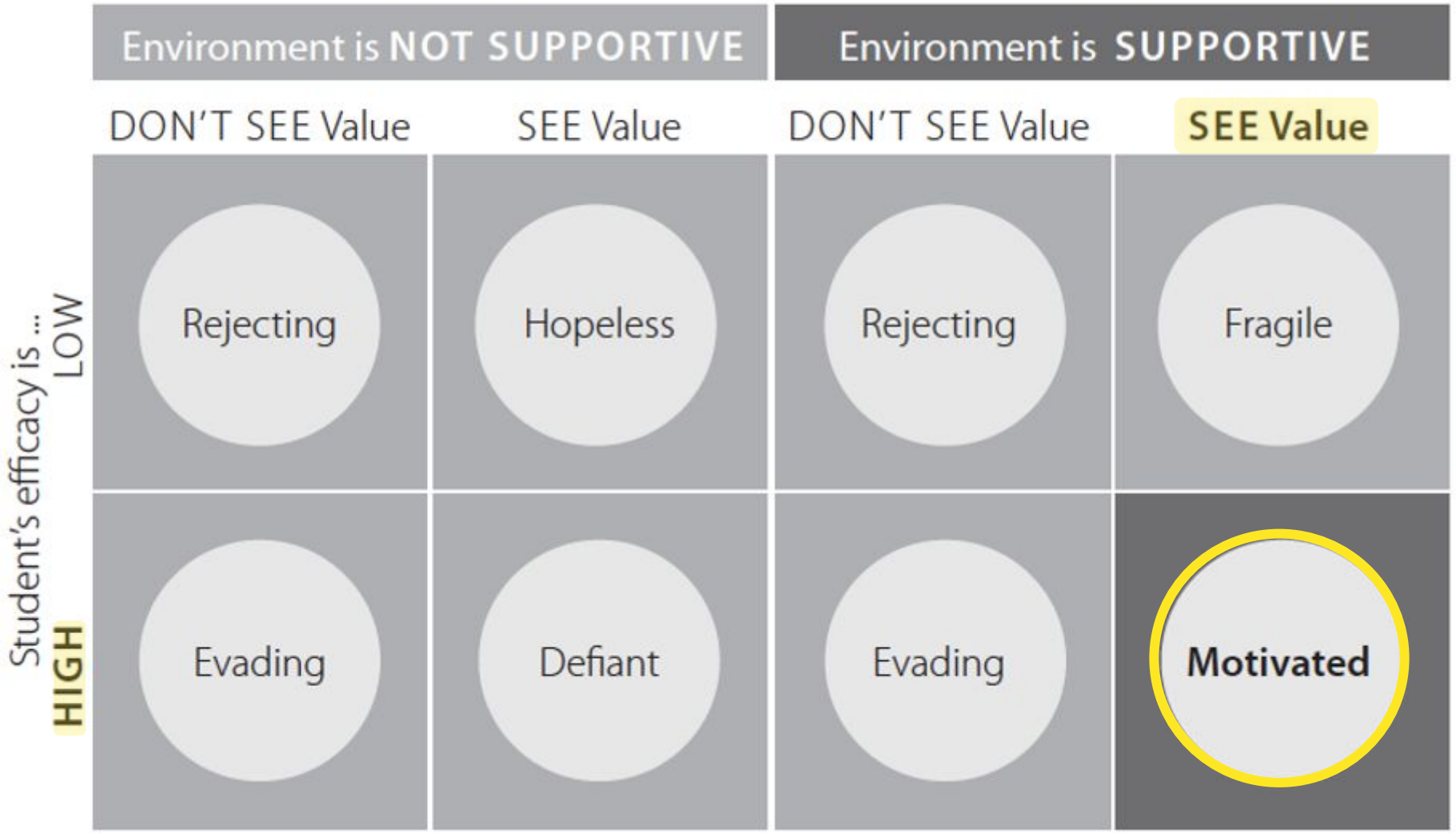
stereotypes

class dynamics

accessibility

mindset

Interactive effects on motivation



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BREAK (5 min)

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Demotivation

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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.

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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

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Strategies to improve motivation and avoid demotivation

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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

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Challenge 3.8 (12 min + 8 to discuss)

Strategies to improve motivation

1. address discrimination (Code of Conduct)
2. avoid stereotypes
3. remove accessibility limitations
4. promote growth mindsets
5. provide learners with choices
6. give opportunities to reflect
7. Or choose your own strategy!

Pick 1 strategy for each group;

discuss a concrete example of how it could be implemented in the classroom.

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See you on Thursday, May 2!

Before you go: Please fill out today's feedback form (in the chat)

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Homework

Warm-up for tomorrow's session

Read Random Thoughts
(a reflection on the book How Learning Works).

Jot down a question you have.

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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.

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Thank you! :)

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