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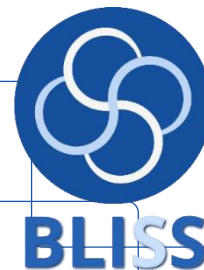
# LTT C1 Blended learning module 2: Introduction to Cognitive science perspectives on teaching and learning, and blended course design

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Erasmus +: BLISS

Blended Learning Implementation for reSilient, acceSsible and efficient higher education

Project 2021-1-SE01-KA220-HED-000023166



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# Agenda

## First part

- Introduction to the cognitive perspective of teaching and learning

## Second part

- Workshop on the cognitive perspective

There will be at least one break

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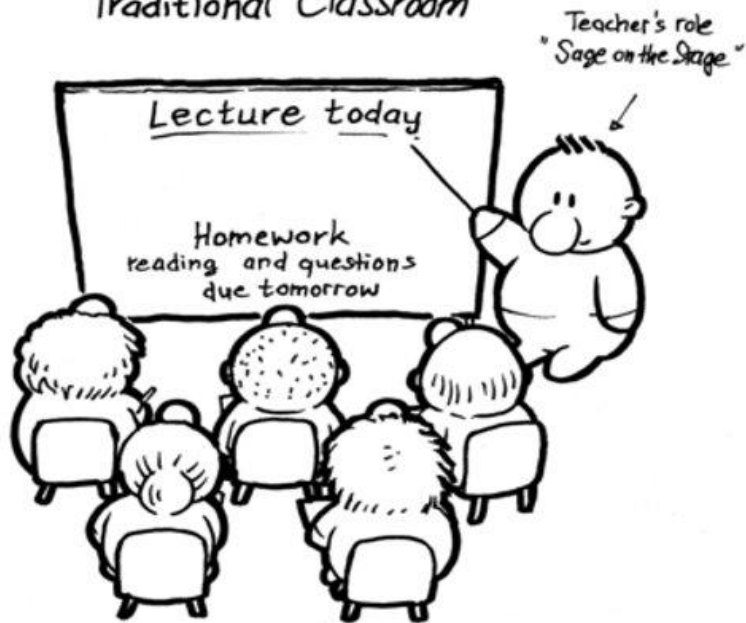


# Three perspectives of teaching and learning

- The **individual student** perspective
  - The **teacher** perspective
  - The **group** perspective (or the community perspective)
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# Role of the teacher

## Traditional Classroom



Sage on the Stage

## Flipped Classroom



Guide on the Side

# How we view the student?



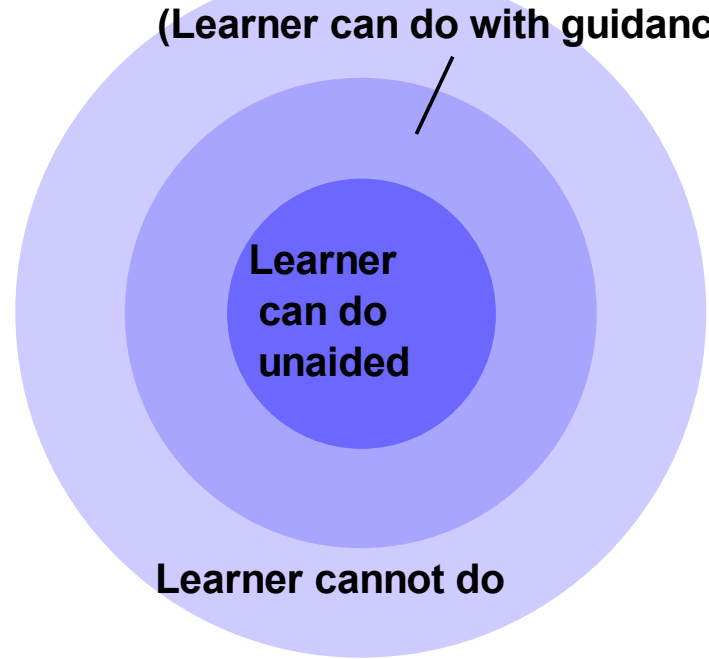


# Scaffolding and Zone of Proximal development

ILOs



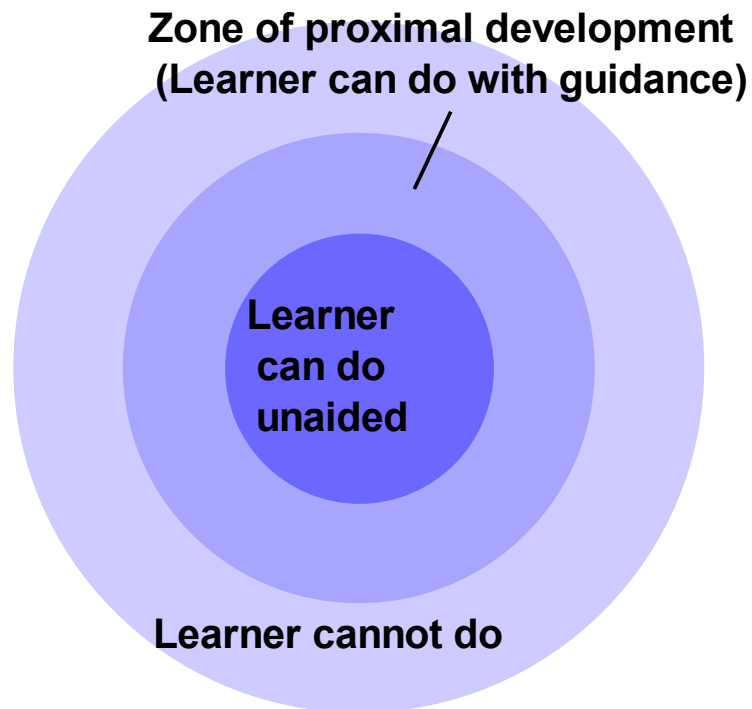
Zone of proximal development  
(Learner can do with guidance)



Learner  
can do  
unaided

Learner cannot do

# Scaffolding and Zone of Proximal development





# Cognitive perspective on teaching and learning

What are the most effective strategies for learning?

Two of them:

- Retrieval practice
  - Spaced practice (similar to distributed practice)
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# Retrieval practice



Basic principle – easy to store/encode information, more difficult to retrieve it.



Strategy – study so you retrieve information

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# Retrieval practice

- Advice to students:
    - Study so that you retrieve what you have learned
    - Create questions while reading a text and study from the questions
    - Sit down and write everything you know on a subject
  
  - Advice to teacher
    - Create quizzes for studying (i.e. not for you to assess)
    - Continuous examination could also help
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# Overconfidence in learning

*"when people judge that they will remember more information on a future test than they actually do" (Miller and Geraci, 2014)*

Students who do retrieval practice seems to be less overconfident, sometimes even underconfident

Student who only study (and re-studies) are often more overconfident than student who do retrieval practice

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# Spaced practice



Basic principle – Study over a long period of time to build knowledge lasting longer



Strategy – Plan your studies in a longer period of time



# Spaced practice

- The opposite of so called cramming
  - Advice to students:
    - Start in time
    - Study a little bit every day
    - Combine with retrieval practice
  - Advice to teachers:
    - Activate student early on in a course
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# Workshop case: Cognitive perspective on educational unit

- What do you see as implication for design of your educational unit, based on the perspectives brought up, e.g. retrieval and spaced practice
  - Also consider what you already do that is in line with these perspectives
- What would be the barriers and drivers to implement elements based on the cognitive perspective in your courses?
  - Which digital tools would be able to help you?

## "Think – Pair – Share"

- Think on your own for 5 minutes
- Pair up, university-wise, and describe your ideas to each other. (ca 5-10 min)
- Prepare a short presentation of your ideas for the full class (ca 5 min)
- Present your case for about 3-5 min.



# Workshop case: Digital assessment

Based on Antonio's and Fredrik's lecture, consider for the educational unit:

- How is the examination done today?
- How could the examination be done differently considering:
  - Digitalizing it and also improving it?

## "Think – Pair – Share"

- Think on your own for 5 minutes
  - Pair up university-wise and describe your case to each other. (ca 5-10 min)
  - Choose one of the cases and prepare a short presentation for the full class (ca 5 min)
  - Present your case for about 3-5 min.
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