FIX
ENERGY FINANCING MIX

Didactics and how to activate the audience

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 785081. Disclaimer: The content of this material does not reflect the official opinion of the European Union. Responsibility for the information and views expressed lies entirely with the author(s).

Before we get started – what is this EPC Specialist Module (… and what it is not)

This module is …

- A **practical guide with tools** on how to activate and engage an audience
- able to **consider diverse needs of students**
- hands-on and suitable for **capacity-building** initiatives

This module is not …

- an **exhaustive and complete** list of activating methods and tools
- a **scientific study** outlining "the best" method for delivering training material
- **applicable to all countries** without taking local conditions into account

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Learning outcomes

- By the end of this module, a participant should be able to:
  - Use activation methods to engage their audience
  - Understand different types of learning strategies and be able to deal with a diverse student body
  - Use tools to plan, execute, and reflect on a lecture
  - Gather feedback

Why are we here?

From:

To:

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https://eventuosity.com/recommended-workshops-at-exhibitor-2015/
https://www.flickr.com/photos/cgiarclimate/38879813024

Overview of what will be covered

1	Ice breakers
2	Learning theories
3	How to plan a lecture
4	How to activate participants
5	How to receive feedback
6	How to reflect on a lecture

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Lets break the ice

- An ***ice breaker*** can serve as a welcome, an introduction, and also as a conversation warm up

- Why should you use one?
  - Build participant interaction
  - Reinforce the content of the session
  - Bring people together regardless of status, ages, nationalities, etc.

How to break the ice

Learn more about your colleagues (Carousel, Speed-Dating)

- What is your name?
- Who was your favorite teacher?
- Why was this person your favorite teacher?
- What was your most exciting learning experience?

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Different methods to break the ice

- Personal Introduction
- Sorting the Group
- Interviewing your Neighbor
- Flipchart-Parcours

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Personal Introduction

What?

- Participants hand in a short CV before the course
- You present each student in 2-3 sentences

How?

- Ask participants e.g. to give you 3 key facts about their lives that are connected to the course

Preparation

- Think about which kind of facts participants may come up with
- Collect the CVs in time and read them before you present them

Variant: You include your own short CV in the presentation

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Personal Introduction

- Tell participants to hand in a short CV with 3-5 central elements in advance
- Present every student based on their CVs

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Sorting the Group

What?

- Participants line up according to certain characteristics
- Get a better overview of the group‘s composition
- This facilitates separating them into similar groups

How?

- Sorting makes participants communicate with each other
- Example: „Line up from left to right according to your age.“

Variant

- Include yourself in the line-up

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Sorting the Group

- Tell the students to line up from one characteristic to another (e.g. age)
- Think about interesting characteristics of participants
  - Number of Semesters
  - Number of (relevant) courses attended
  - Number of study programs
- Values and opinions may be lined up as well
  - Order them from„very important“ to „not important at all“ or „very satisfied“ to „very dissatisfied“
- Examples:
  - How is your mood? (you can create a scale by drawing a sun on one end and storm clouds on the other end of the black board)
  - How much do you know about the course‘s content?
  - How important are certain topics of the course?

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Source: www.spielereader.org/spielereader.pdf

Interviewing your Neighbor

What?

- Participants ask their neighbor some questions
- Then they present their neighbor to the group
- An uncomplicated method to get to know each other

How?

- Sample Questions:
  - Number of semesters studying?
  - Expectations about the course?
  - (Relevant) Topic that interests you the most?
  - Did you attend other courses devoted to this topic?

Variant

- In larger groups, the interview can take place in groups of 3

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Source:
http://wirtrainieren.de/werkzeugkoffer/kennenlernen/

Interviewing your Neighbor

- Instruct students to interview their neighbor and later present him/her after the interview.
- You can hand out a set of guiding questions to help students with their interview. Whether you do so depends on the competence of your students to hold interviews.

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Flipchart Parcours

What?

- Participants go through a parcours of flipcharts with questions
- Participants get to know each other
- You get information about your participants

How?

- Bring several flipcharts and pens
- Create a route between flipcharts in a sufficiently large room

Variant

- Use this method to verify previous knowledge of participants

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Source: http://www.kas.de/wf/de/71.9271/

Flipchart Parcours

- Build a parcours of flipcharts in an empty teaching room. Write one question on each flipchart.
- Examples:
  - What are your expectations of the course?
  - In which topic are you most interested?
  - What do you not want to hear and experience?
  - What are your conceptions about topic X?
- Before guiding them through, introduce the participants to the parcours rules:
  - Walk your way through the parcours and answer each question.
  - Write each answer directly on the flipchart
  - Write in keywords, not entire sentences
  - When you are finished, take a seat
- Each participant gets a marker and can start walking through the parcours. While writing the answers on the flipcharts, participants can get to know each other a little bit.
- Once all participants are finished, line up the flipcharts in front of the class and discuss the answers. An instructor may ask the participants to explain their answers. In the course of the seminar, instructors can refer to the answers from time to time.

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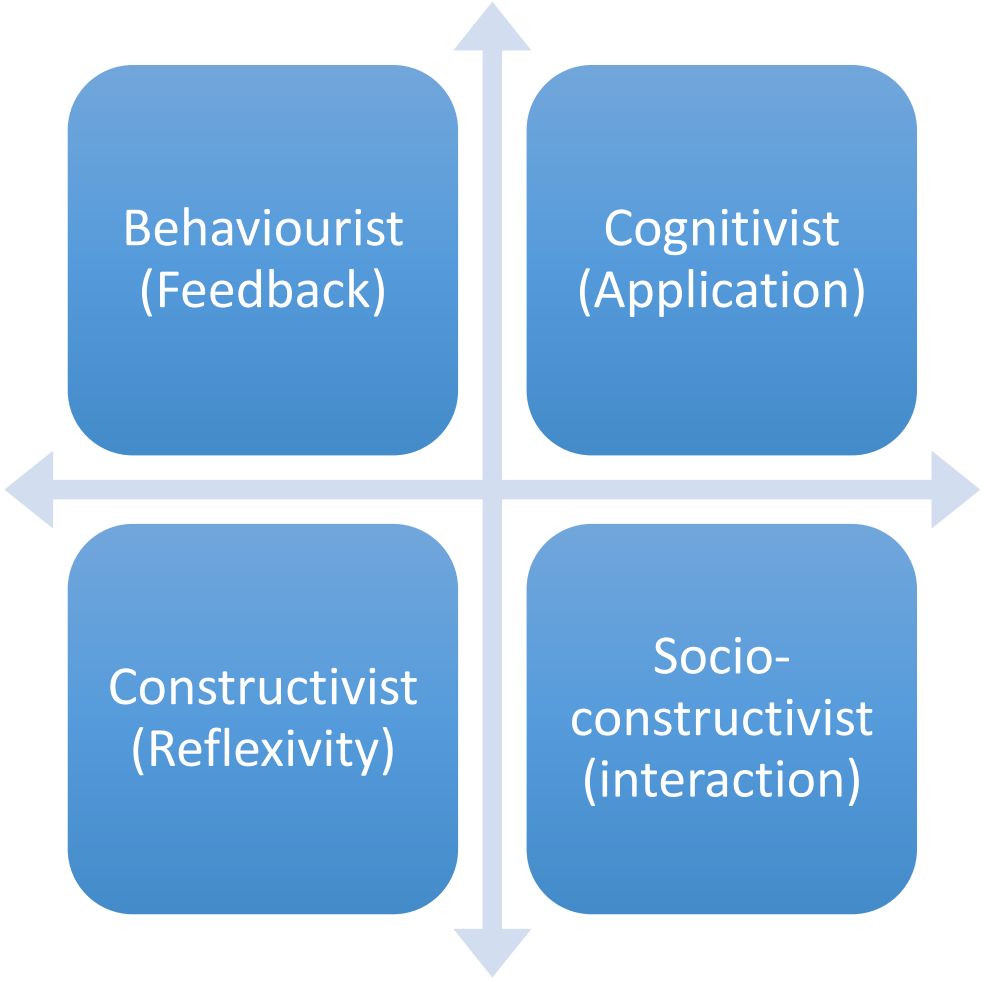
Learning theories

- Nothing is more practical than a good theory!
- Even more practical: four different theories

- So: Take the best out of every theory



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Behavourist – *Repetition Matters*

- Learning is conceptualized as the change in external behaviour achieved through **reinforcement** and **repetition**.
- No attempt to integrate cerebral function into this theory
- The teacher is responsible for stimulus control, learners respond.
- Correct stimulus leads to correct problem solving by the learners.

Practitioner's Tip:

- Get **direct feedback**
- **Repeat** until learners can solve a problem
- Use **positive reinforcement**

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Cognitivist – *Clarity Matters*

- Learning is conceptualized as knowledge acquisition
- Many sub-theories explain information reception, processing, organization and retrieval
- The teacher is responsible for conveying information in a way that learners can process
- Learners follow the teacher‘s instructions

Practitioner‘s Tip:

- Design learning material that is easily understood Consider capacity for information retention
- Consider cognitive development of learners

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Constructivist – *Relevance Matters*

- Learning is conceptualized as the construction of reality on the basis of each one‘s individual experiences
- Learners have to integrate information into their personal experience and construct knowledge
- Teachers are advised to leave learners room for experience

Practitioner‘s Tip:

- Use activation techniques
- Approach teaching in a problem-centered manner
- Consider context and different perspectives

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Socio constructivist – *Interaction Matters*

- In contrast to constructivist theories of learning, socio-constructivist theories focus on interaction instead of observation
- This can be implemented by group discussions

Practitioner's Tip:

- Focus on interaction of students, not only on observation.
- Participants have to be active!

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How to Plan a Lecture – Starting Questions

Ask yourself the following questions:

- How large is the group of participants?
- What is the professional background of the participants?
- What is the existing knowledge and practical experience of the participants?
- Why do the participants visit the lecture?
- How self-motivated will the participants act in the setting?
- Where does the meeting take place?
- What are the spatial conditions?
- How much time do you effectively have for the lecture?
- What is the group's composition? How old are the involved persons? Who leads and has influence? Positive or negative group climate?
- What are external stakeholders? What are the expectations of external stakeholders?

(parts of Heimann et. al., 1979 – Berlin Model: structure analysis)

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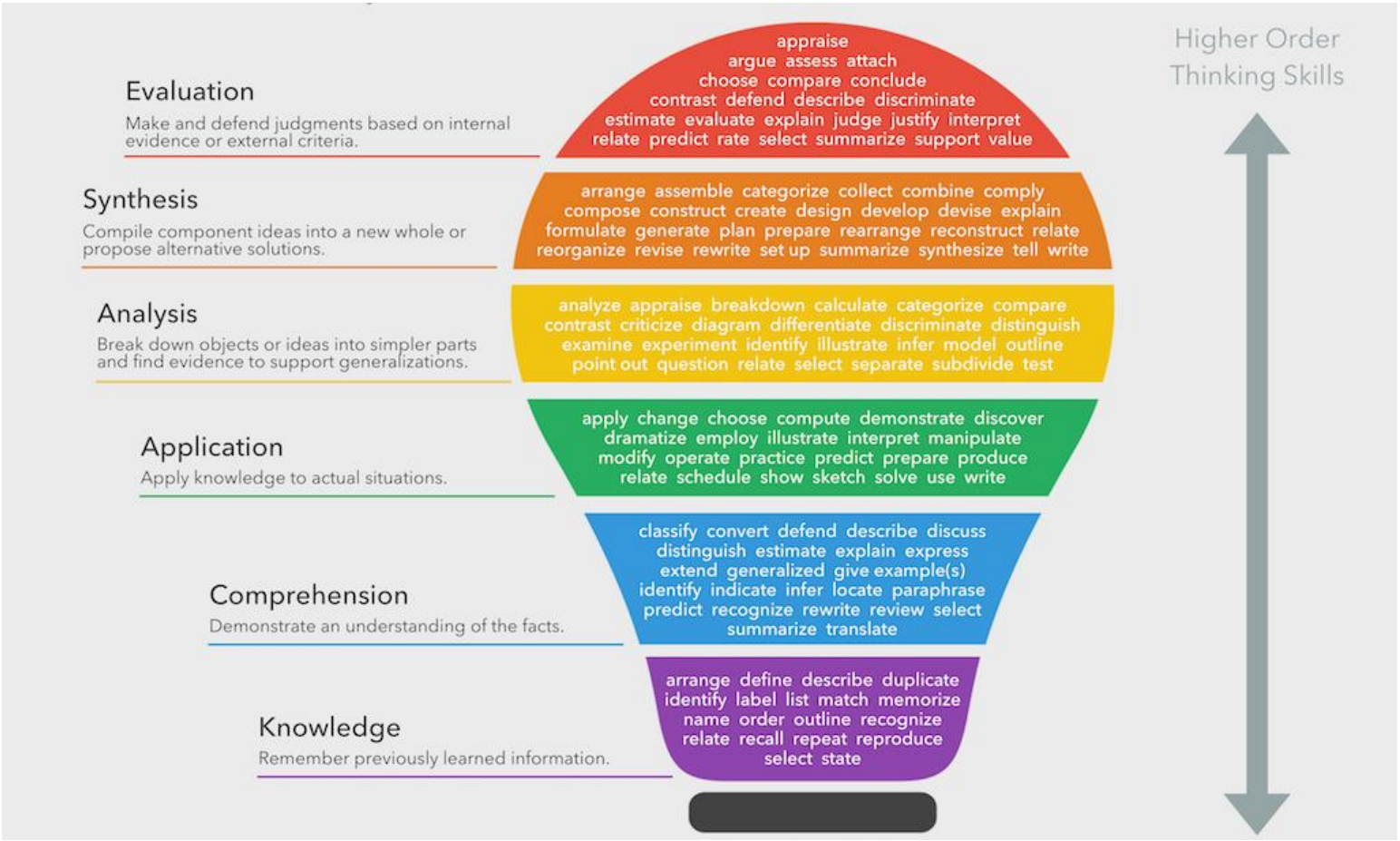
How to plan a lecture – Learning outcomes (Bloom)

At the end of a module a student will be able to…



Bloom, B. S. (1956). "Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain." New York: David McKay Co Inc.

video: https://www.youtube.com/watch?v=ayefSTAnCR8

https://www.teachthought.com/learning/what-is-blooms-taxonomy-a-definition-for-teachers/

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How to Plan a Lecture – Learning Outcomes (Examples)

Bloom's Level	Key Verbs (keywords)	Example Learning Objective
Create	design, formulate, build, invent, create, compose, generate, derive, modify, develop.	*By the end of this lesson, the student will be able to design an original homework problem dealing with the principle of conservation of energy.*
Evaluate	choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate.	By the end of this lesson, the student will be able to determine whether using conservation of energy or conservation of momentum would be more appropriate for solving a dynamics problem.
Analyze	classify, break down, categorize, analyze, diagram, illustrate, criticize, simplify, associate.	*By the end of this lesson, the student will be able to* differentiate between potential and kinetic energy.
Apply	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present.	*By the end of this lesson, the student will be able to* calculate the kinetic energy of a projectile.
Understand	describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss.	*By the end of this lesson, the student will be able to* describe Newton's three laws of motion to in her/his own words
Remember	list, recite, outline, define, name, match, quote, recall, identify, label, recognize.	*By the end of this lesson, the student will be able to* recite Newton's three laws of motion.

Learning objective examples adapted from, Nelson Baker at Georgia Tech: nelson.baker@pe.gatech.edu

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Source: https://tips.uark.edu/using-blooms-taxonomy/

How to Plan a Lecture – Planning Structure

- Every lecture should be planned in a Macro and in a Micro Structure
- ***Macro:*** Time structure of the lecture to achieve learning goals
  - organized in one or two big timeslots?
  - spread over the whole semester
  - [*see slide starting questions*]
- ***Micro*****:** Didactic elements to achieve the learning goal
  - Elaborating following dimensions: Time, Name, Description, Arrangement, Material, Notes
  - [*see the example on the next slide*]

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How to Plan a Lecture – Planning Structure

Time	Element	Description	Arrangement	Material	Notes/Sources
3’	Introduction	Didactics Matter	Lecturer	Slide 2	
15’	Breaking the ice – Speed Dating / Carousel	The following questions have to be discussed in an 3 rounds speed dating/carousel exercise a 3’ (explanation in TLAC article need to be translated) What is your name? Who was your favorite teacher? Why was this person your favorite teacher? What was your most exciting learning experience?	Speed Dating Room Setting	Slide 3-4 and cards/sticky notes	TLAC translated http://www.classtools.net/blog/using-speed-dating/ https://www.uni-due.de/imperia/md/images/zfh/mentoring-tutorien/speed_dating.pdf
10’	How to break the ice	Explain different icebreaking examples (Personal Introduction, Sorting the Group, Interviewing your Neighbor, Flipchart Parcour)	Lecturer	Slide 5	TLAC new chapter 2
5’	Learning theories	Explain different Learning theories and use Material “Learning theories”	Lecturer	Slides 6-11	TLAC new chapter “Learning theories”
15’	Learning outcomes	Explain the importance of thinking about the learning outcome of a lecture and explain the Bloom And show video: https://www.youtube.com/watch?v=ayefSTAnCR8 and/or the SOLO Taxonomy (Biggs) https://www.youtube.com/watch?v=uDXXV-mCLPg	Lecturer & Video	4 Slides	https://www.youtube.com/watch?v=ayefSTAnCR8 http://www.johnbiggs.com.au/academic/solo-taxonomy/
10’	Break	Take a break and drink tea/coffee!		Tea/Coffee & Cookies	

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How to activate participants

Activating Methods – World Cafe

When?

- To combine content discussion and activation of groups (starting a topic or summing up) incl. documentation of discussion
- **Group**: 15-60 Persons
- **Time**: more than 1h
- **Pro**: deep discussion, students learn from each other
- **Con**: time consuming, preparation needed, students need prior knowledge

What?

- Developing ideas in groups
- Mix up the groups and share knowledge in conversation

How?

- Create a hospitable place for discussion in groups
- Provide tables with pen and paper
- 3 twenty-minute rounds of group discussion in groups of four

Variant

- Rounds and group sizes can be modified

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Source: https://www.youtube.com/watch?v=_0d0Gybq-l0

Activating Methods – World Cafe

- Create a setting with tables modeled after a café
  - No more than 5 chairs per table
- Play in 3 rounds of 20 mins discussion
  - At each round, announce one question for the participants to discuss
  - After each round, one person stays at the table as a table host
  - The other group members go to sit at a different table
  - The table host introduces the new group members to what has been discussed in the previous round
- At the end, ask individual participants to share their insights of the discussions in front of the large group

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Source: https://www.youtube.com/watch?v=_0d0Gybq-l0

Activating Methods - Fishbowl

When?

- Use it to activate students by practice debate
- **Group**: 20-40 Persons
- **Time**: at least 30 min
- **Pro**: very focused on discussion and changing discussants
- **Con**: needs discipline within group

What?

- A small group discusses a topic while the rest of the group is watching
- From time to time, the rest of the group get an occasion to participate

How?

- Set up a small circle of 4-5 chairs in the middle
- Create a larger circle around it for the rest of the participants (fishbowl shape)

Variant

- There are different methods of including participants from the outer circle (guest chair, voting out, …)

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Source: https://www.youtube.com/watch?v=xkWl9b0FZSE

Activating Methods - Fishbowl

- There is no distinction between speakers and audience
- Caution: Introverted participants may hesitate to speak up
  - To involve them, gather their opinions by asking them to write them on post-its before the discussion
  - Ask live-voting questions during the discussion

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Source: https://www.youtube.com/watch?v=xkWl9b0FZSE

Activating Methods - Crossword

When?	What?	How?	Variant
• Use it as an individual activation technique • **Group**: flexible/scalable • **Time**: at least 10 min • **Pro**: short and simple to use • **Con**: needs preparation (generate crossword quiz)	• Small quizzes motivate participants to engage with the content and give you some insight about knowledge gaps	• Some questions concerning content • For more complex questions concerning opinion, you can use digital voting systems	• At the beginning: get feedback about the knowledge of students • During the course: evaluate the learning progress of your students • At the end: give students an occasion to self-evaluate

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Sources: http://www.eclipsecrossword.com/

Activating Methods - Crossword

- Prepare a crossword from http://www.eclipsecrossword.com/
- Hand it out to the students as in class exercise or as homework
- Compare the results in class

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Activating Methods - Jigsaw

When?	What?	How?	Variants
• Use it to empower students in a teaching role • **Group**: 10-30 Persons • **Time**: at least 45 min • **Pro**: focused on knowledge transfer and the student as teacher • **Con**: needs discipline within group	• The content is separated into topics • Participants act as learners as well as teachers	• Small groups send one person to learn about one topic with the other groups‘ envoy • The envoy goes back to his group and teaches the topic	• Add a performanc e review • Smaller group sizes necessitate the doubling of envoys or pairs

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Source: https://en.wikipedia.org/wiki/Jigsaw_(teaching_technique)

Activating Methods - Jigsaw

- Read the following instruction for the Jigsaw method (https://en.wikipedia.org/wiki/Jigsaw_(teaching_technique))
- This method is suitable for complex topics
- Its underlying principle is the change between acquiring knowledge about a topic and imparting it to other participants
- Learners are teachers at the same time

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Source: https://en.wikipedia.org/wiki/Jigsaw_(teaching_technique)

Activating Methods – Panel Discussion

When?	What?	How?	Variants
• Use it to activate students by practice content based debate • **Group**: 10-30 Persons • **Time**: at least 30 min • **Pro**: very focused on discussion of a specific group • **Con**: some students are normally just „observers“	• 2-4 participants prepare 2-3 scientific texts and moderate and structure a panel discussion	• Each session, one group of participants moderates a discussion • Participants can ask questions or comment	• The discussion panel can vary in size

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Source: https://www.slideshare.net/maheswarijaikumar/panel-discussion-92749665

Activating Methods – Panel Discussion

- Read the following slides: https://www.slideshare.net/maheswarijaikumar/panel-discussion-92749665
- This method enables students to learn how to
  - Understand and criticize theories
  - Acquire different kinds of knowledge
  - Prepare and participate at a scientific debate with audience
- As an activation method, we are interested in an educational panel discussion
- Not to be confused with a public panel discussion of experts

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Source: https://www.slideshare.net/maheswarijaikumar/panel-discussion-92749665

How to End a Lecture – Summary or Forecast

- End your lecture with a summary, to help participants internalize the content
  - Repeat three key messages of your course
  - Proceed interactively by encouraging participants to revisit the content with you
- Repeat your structure at the end, the three major lessons learned and give an outlook to the next lecture

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How to End a Lecture – Call to Question/Action

- End your lecture with a summarizing question or a research task to engage participants until the next lecture
- This provides participants with the opportunity to reflect on the subject
- Come up with one or more suitable questions or tasks in connection with your lecture

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How to End a Lecture – Quotes, Anecdotes & Humor

- End your lecture with a quote. Make sure it directly refers to your lecture‘s content
- A short story about the lecture‘s content may facilitate memorization
- When you are using humour, make sure your audience is capable of following the implications

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Sources:
https://www.briantracy.com/blog/public-speaking/how-to-end-a-speech-the-right-way/
https://www.quickanddirtytips.com/business-career/public-speaking/5-great-ways-to-end-a-speech

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How to Receive Feedback – Minute Paper

When?	What?	How?
• To receive content based feedback • **Time**: at least 20 min • **Pro**: based on content • **Con**: not based on „mood“	• Make sure participants have read the assigned texts • Get feedback about the participants‘ knowledge	• Pose 2-3 open questions about assigned readings • participants write short answers • Collect the answers during the session

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Source: https://learn.wu.ac.at/tlac/feedback_minute

How to Receive Feedback – Minute Paper

- Specify expectations clearly
  - Deadline
  - Length
  - Whether the papers will be collected
  - Submitted anonymously?
- Advantage: you hear from all students, not just a few
  - In particular: quiet students
- You can ask about the understanding of course content
- For further information:
  - https://www.youtube.com/watch?v=NHC60vXCARY

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How to Receive Feedback – Barometer

When?

- to receive mood based feedback
- **Time**: at least 20 min
- **Pro**: based on mood
- **Con**: content based questions hard to handle

How?

- Create a poster with a scale about the participants mood
- Participants indicate their position with adhesive points
- Ask if the barometer indicates a counterintuitive result

For whom?

- Teachers can assess the participants‘ mood
- Detect group problems
- Ask for participants‘ satisfaction
- Participants can assess their own mood and get a complete picture

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Source: https://learn.wu.ac.at/tlac/feedback_barometer

How to Receive Feedback – Barometer

- Create a poster with a scale about the participants‘ mood in before the lecture
- Participants indicate their position with adhesive points
- Ask students if the barometer results match their expectations and add your own perspective afterwards

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Overview of what will be covered

1	Ice breakers
2	Learning theories
3	How to plan a lecture
4	How to activate participants
5	How to receive feedback
6	How to reflect on a lecture

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How to Reflect on a Lecture

- Include a reflection phase in your lecture planning
- Rethink the starting questions: Were your assumptions right?
- Rethink your lecture planning structure: Are adaptations needed?
  - Timing?
  - Elements in planning structure could be applied as planned? Change, skip, adjust or add elements?
  - Room equipment and social arrangements were sufficient?
  - Materials (Media, Handouts, Slides, …) were helpful?
  - Participants were active? Why (not)?

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Sources: Heimann et. al., 1979 – Berlin Model
Wolfgang Schultz (1997)
https://en.wikipedia.org/wiki/Berlin_Model