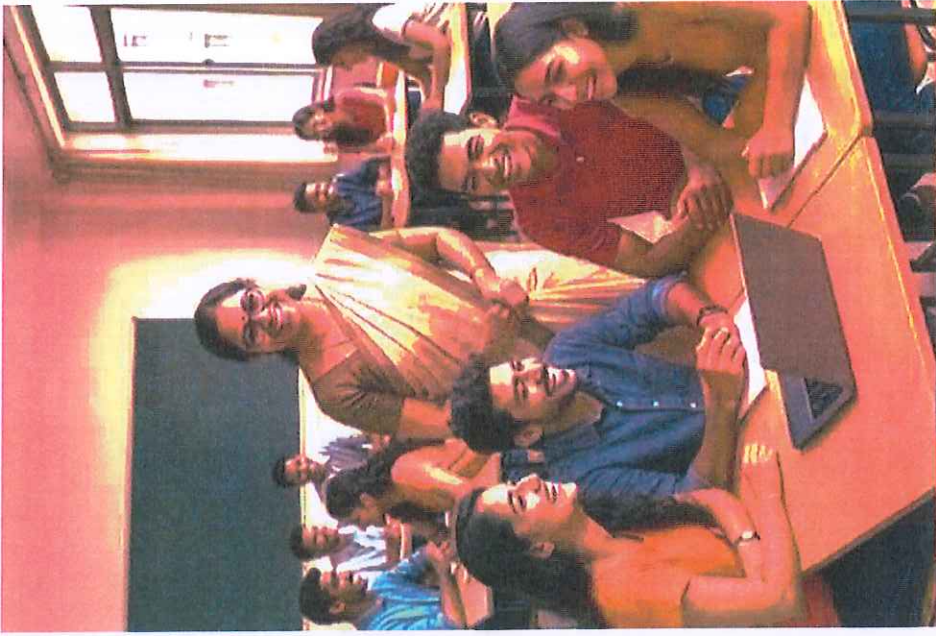


# MINDFRAME



Unit 2\_3

**„How we think about the impact of what we do is more important than what we do.“**

**John Hattie (10 Mindframes, Visible Learning)**

## **Today's goals**

- **Validate** the role and impact of a teacher
- **Construct** problem-based learning tasks

**At the end of this lesson you can...**

**validate the role and impact of a teacher.**

**construct problem-based learning tasks.**

## **Steps of today's lesson**

- **Role and Impact of a teacher**
- **10 Mindframes**
- **Problem-based Learning**
- **Evaluation**

# Role and Impact of a Teacher

**According to Hattie, the following factors are decisive:**

- the teacher-learner relationship
- the clarity of instruction/task from the teacher
- classroom management
- a well-paced lesson
- plenty of feedback

**According to Hattie, the following factors are decisive:**

- **the teacher-learner relationship**
- the clarity of instruction/task from the teacher
- classroom management
- a well-paced lesson
- plenty of feedback

**According to Hattie, the following factors are decisive:**

**The teacher-learner relationship**



# Task 1

**Task:** You have ten different statements or quotes. Put them in order from 1 to 10. **1 is the most important** to you and goes at the top, and so on. Stick the pieces of paper onto the flipchart sheet. Then display these sheets on the whiteboard.

**Interaction pattern:** Group work

**Location:** Classroom

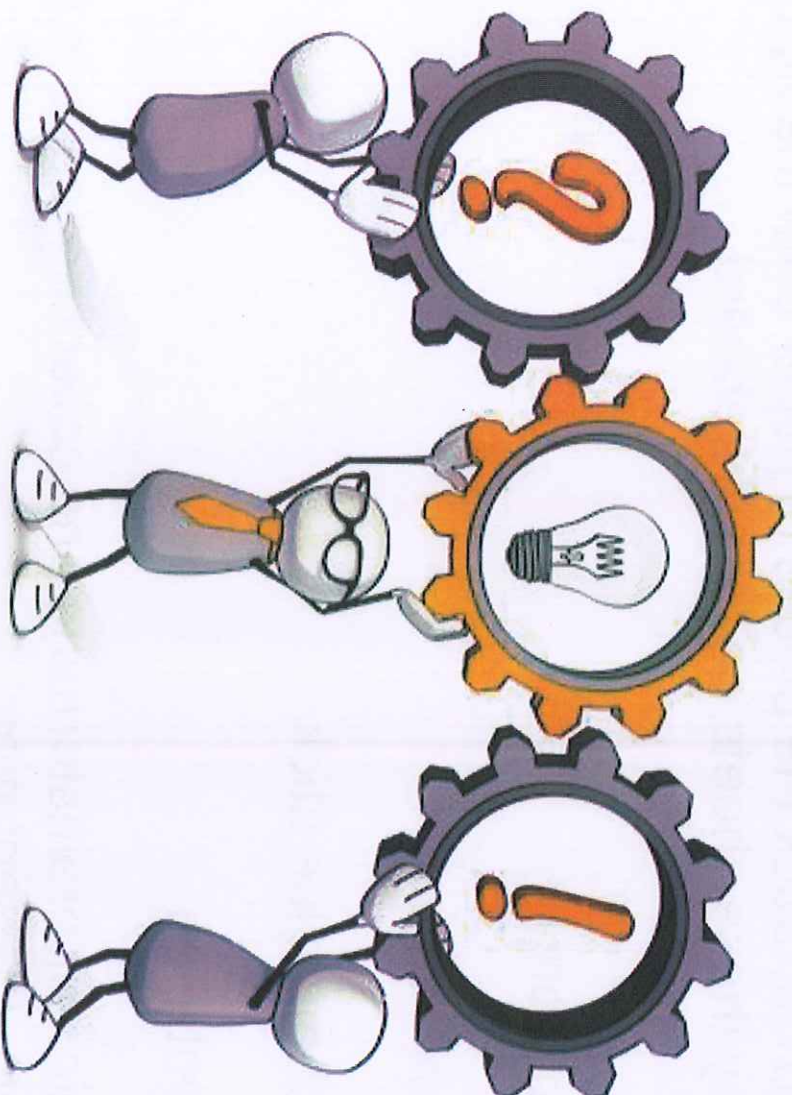
**Resources:** Flip chart, glue stick

**Product:** Presentation

**Time:** 30 min. for brainstorming and collecting ideas in the group  
20 min. Presentation



# Time for statements, reflections, questions



## Task 2

**Task:** On Script 2\_3, page 2-6, you find 10 Mindframes. Each of them has a questionnaire. Assess yourself by rating your agreement with the following statements: 1=strongly disagree ... 5= strongly agree.  
Reflect **honestly and critically** on your role.

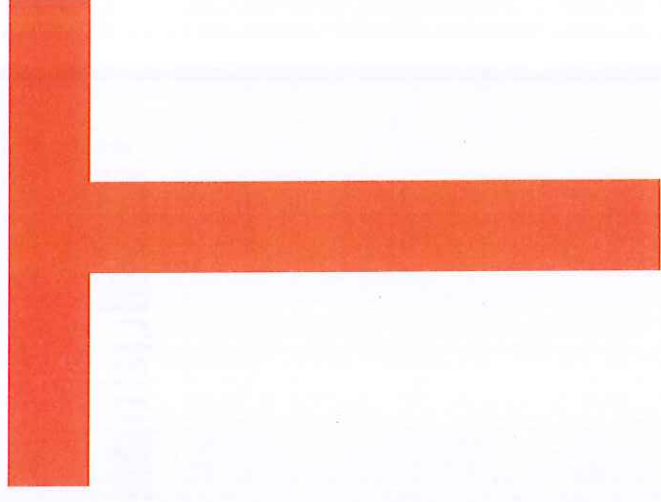
**Interaction pattern:** Individual work

**Location:** Classroom



**Resources:** Script

**Product:** Personal assessment

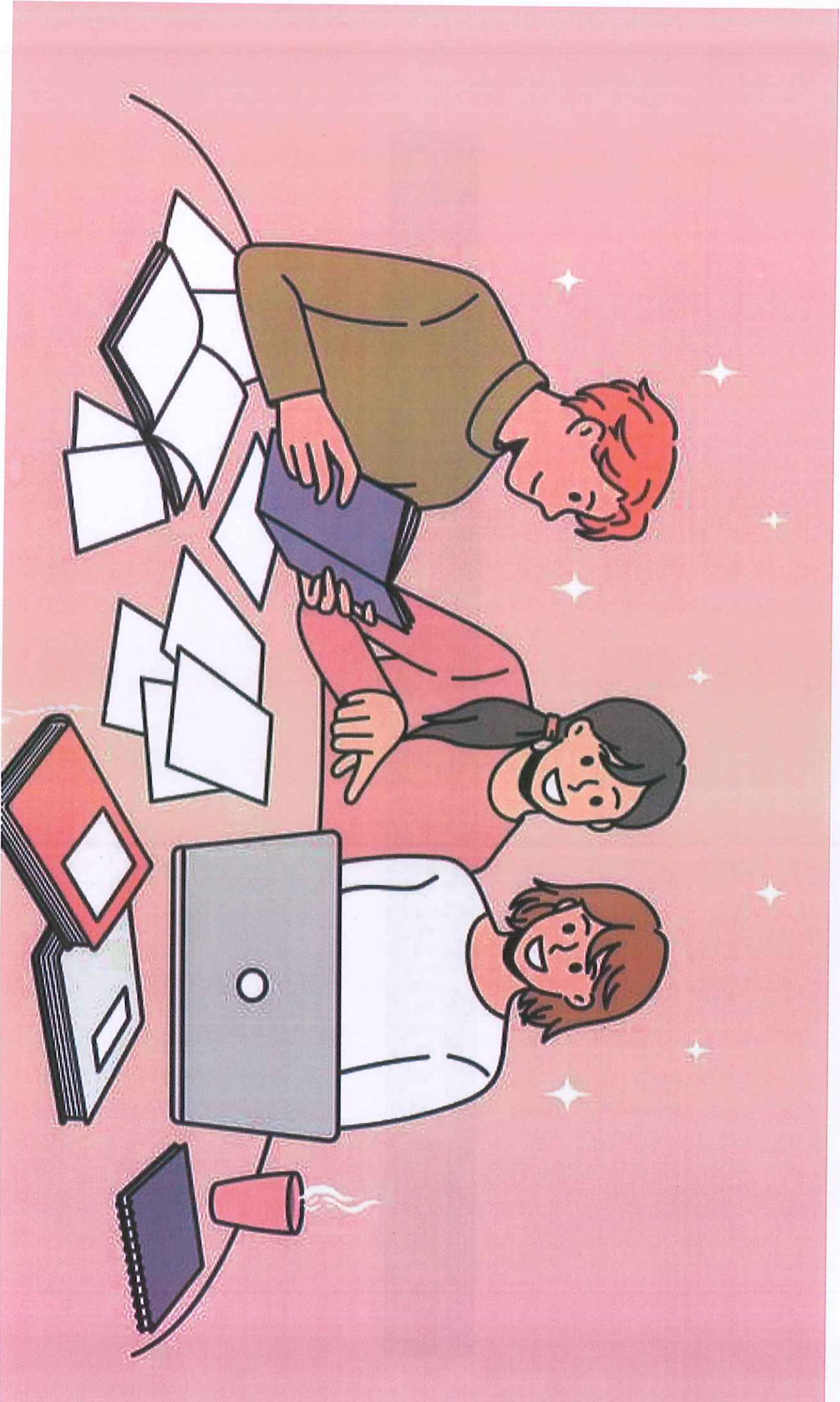
**Time:** 20 Min.



## **Steps of today's lesson**

- Role and Impact of a teacher 
- 10 Mindframes 
- Problem-based Learning
- Evaluation

# Problem-based Learning



**According to Hattie, the following factors are decisive:**

- the teacher-learner relationship
- the clarity of instruction/task from the teacher
- classroom management
- a well-paced lesson
- plenty of feedback

**According to Hattie, the following factors are decisive:**

- the teacher-learner relationship
- **the clarity of instruction/task from the teacher**
- classroom management
- a well-paced lesson
- plenty of feedback

**According to Hattie, the following factors are decisive:**

**The clarity of instruction/task from the teacher**

# Problem-based learning

The meta-analyses demonstrate that problem-based learning can indeed have a great impact on student performance if it is implemented **at the right time** in the learning process.

Meta Level

## 4Cs

- Critical Thinking
- Creativity
- Collaboration
- Communication

# **Problem-Based Learning**

- 1. Problem definition phase  
(understanding the problem)**
- 2. Problem analysis  
(structuring the problem) > Ishikawa diagram**
- 3. Production of ideas  
(hypothesis formulation)**
- 4. Evaluation of results  
(assessment and reflection)**

## Task 3

**Task:** In the script 2\_3 you find on page 9 an excerpt from Hattie's ,Visible Learning'. Write down in keywords the three **most** important points for you so that **PBL works**. After that, share these three point with your partner.

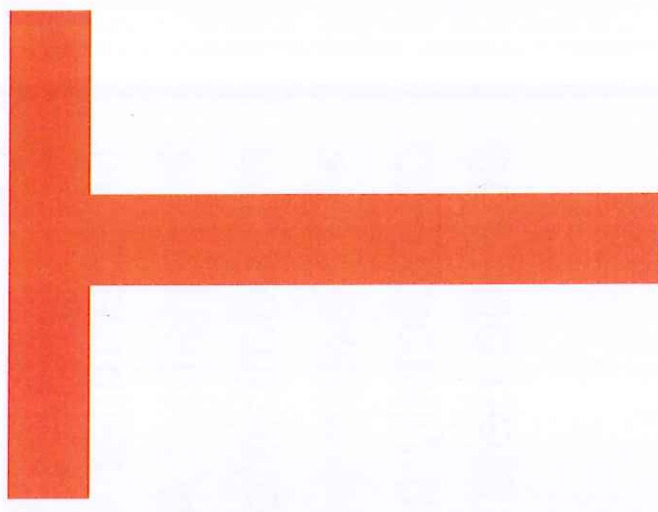
**Interaction pattern:** Individual / partner work

**Location:** Classroom

**Resources:** Script 2\_3

**Product:** 3 most important points

**Time:** 5 min. keywords  
5 min. sharing keywords with partner



# Problem-based learning

## Differentiation of TASKS according to **cognitive levels**

- > **Reproduction**: Reproduction of individual facts (e.g. definitions, formulas).
- > **Reorganization**: Application of several known facts or methods in a familiar context.
- > **Transfer**: Application of known facts or methods in a new but not completely unfamiliar context.
- > **Problem solving**: Applying known facts or methods in a completely new context unknown to the learner; discovering or proving new facts.

# **Problem-based learning**

The aim is not to under- or overchallenge the students but to support them in their "zone of next development".

**According to Hattie, the following factors are decisive:**

**The clarity of instruction/task from the teacher**

## Task 4

**Task:** In the script 2\_3 you find on page 10 more informations about PBL, on page 11-20 some examples for problem solving tasks for each faculty. Analyze them and create a task paper for your lesson, with these **four elements**.

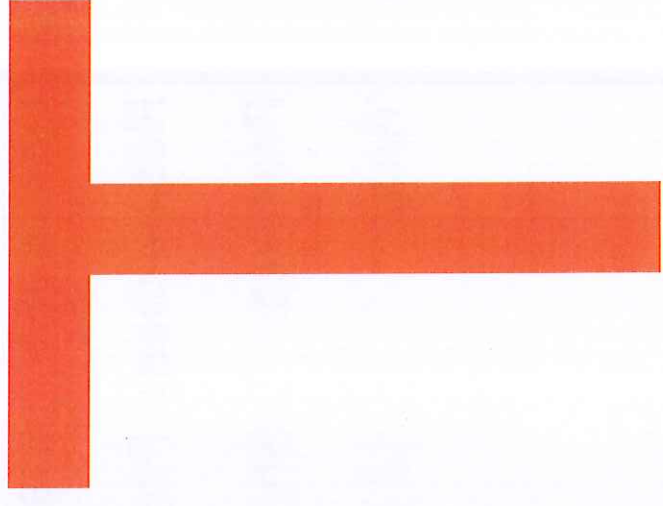
**Interaction pattern:** Partner or group work

**Location:** Classroom

**Resources:** Script 2\_3

**Product:** Problem solving task, with 4 steps

**Time:** 45 Min.



## Task 5

**Task:** Share results with others. See other suggestions. Discuss. Etc.  
Create a **new** group! Explain and justify the C-levels.

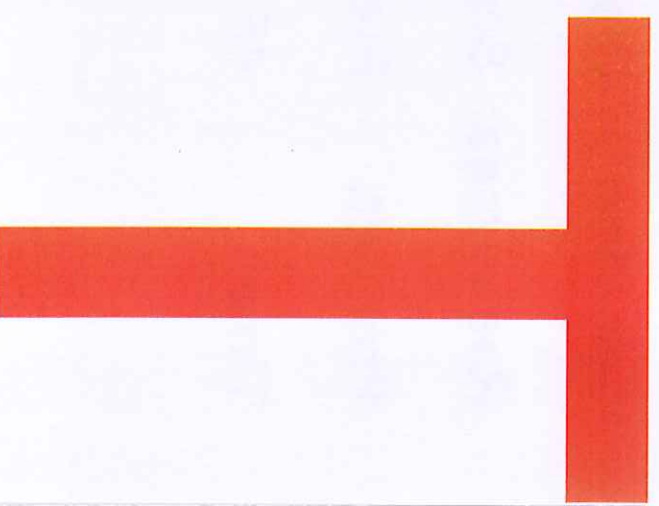
**Interaction pattern:** Group work

**Location:** Classroom

**Resources:** Product of task 3

**Product:** Sharing ideas

**Time:** 15 Min.



## Steps of today's lesson

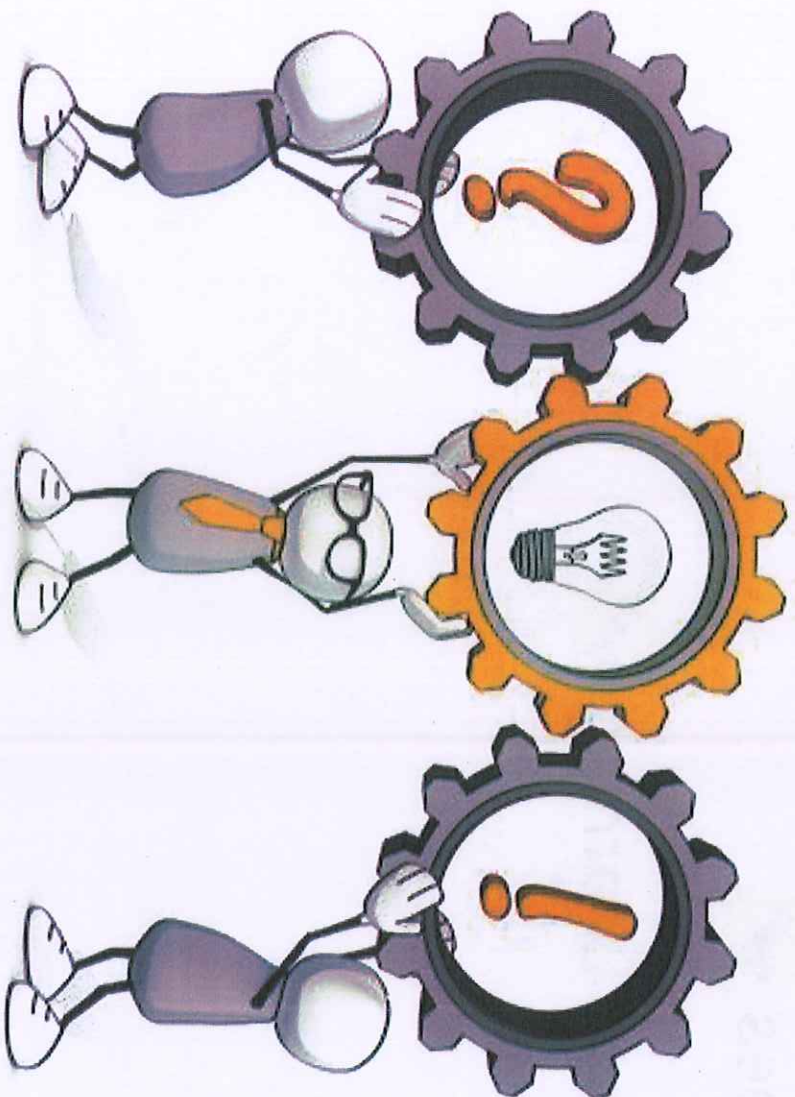
- Role of a teacher ✓

- 10 Mindframes ✓

- Problem-based Learning ✓

- Evaluation

# Time for statements, reflections, questions



## **Today's goals**

- **Validate** the role and impact of a teacher
- **Construct** problem-based learning tasks

**At the end of this lesson you can...**

**validate** the role and impact of a teacher.

**construct** problem-based learning tasks.

**Goals achieved?** 





# Role and Impact of a Teacher

## Problem-based Learning

# MINDFRAME



# 10 Mindframes for Visible Learning – Teaching for Success – Hattie/Zierer

## 1. I am an evaluator of my impact on student learning

---

### QUESTIONNAIRE FOR SELF-REFLECTION

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree.

#### I am very good at . . .

making my impact on student learning visible. 1 / 2 / 3 / 4 / 5

using methods for making my impact on student learning visible. 1 / 2 / 3 / 4 / 5

#### I know perfectly well . . .

that student achievements make my impact visible. 1 / 2 / 3 / 4 / 5

that student achievements help me to maximize my impact. 1 / 2 / 3 / 4 / 5

#### My goal is always to . . .

evaluate my impact on student learning. 1 / 2 / 3 / 4 / 5

use multiple methods of measuring student achievement to assess my impact on student learning. 1 / 2 / 3 / 4 / 5

#### I am thoroughly convinced . . .

that I need to evaluate my impact on student learning regularly and systematically.

1 / 2 / 3 / 4 / 5

that I need to use student learning to assess my impact. 1 / 2 / 3 / 4 / 5

## 2. I see assessment as informing my impact and next steps

---

### QUESTIONNAIRE FOR SELF-REFLECTION

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree.

#### I am very good at . . .

adapting my teaching when my students do not achieve their learning goals.

1 / 2 / 3 / 4 / 5

using the achievements of my students to draw conclusions on my thoughts concerning goals, content, methods, and media. 1 / 2 / 3 / 4 / 5

#### I know perfectly well . . .

that student achievements are feedback on the success of my teaching. 1 / 2 / 3 / 4 / 5

that student achievements allow me to draw conclusions on my thoughts concerning goals, content, methods, and media. 1 / 2 / 3 / 4 / 5

#### My goal is always to . . .

measure the achievement levels of my students regularly and systematically.

1 / 2 / 3 / 4 / 5

use objective methods of measuring student achievement to assess the success of my teaching. 1 / 2 / 3 / 4 / 5

#### I am thoroughly convinced . . .

that I need to check the achievement levels of my students regularly and systematically.

1 / 2 / 3 / 4 / 5

that I need to use objective methods of measuring student achievement to assess the success of my teaching. 1 / 2 / 3 / 4 / 5

### 3. I collaborate with my peers and my students about my conceptions of progress and my impact

---

#### QUESTIONNAIRE FOR SELF-REFLECTION

Assess yourself by rating your agreement with the following statements:  
1 = strongly disagree, 5 = strongly agree.

#### I am very good at . . .

saving time by sharing work with other teachers. 1 / 2 / 3 / 4 / 5  
sharing responsibility in a team. 1 / 2 / 3 / 4 / 5

#### I know perfectly well . . .

that failures can be overcome in a team. 1 / 2 / 3 / 4 / 5  
that responsibility can be shared in a team. 1 / 2 / 3 / 4 / 5

#### My goal is always to . . .

consolidate strengths through teamwork. 1 / 2 / 3 / 4 / 5  
overcome failures in my team. 1 / 2 / 3 / 4 / 5

#### I am thoroughly convinced . . .

that strengths can be consolidated in a team. 1 / 2 / 3 / 4 / 5  
that it is important to cooperate with my colleagues. 1 / 2 / 3 / 4 / 5

### 4. I am a change agent and believe all students can improve

---

#### QUESTIONNAIRE FOR SELF-REFLECTION

Assess yourself by rating your agreement with the following statements:  
1 = strongly disagree, 5 = strongly agree.

#### I am very good at . . .

applying successful methods to make my teaching more differentiated. 1 / 2 / 3 / 4 / 5  
applying various strategies for enhancing the students' motivation. 1 / 2 / 3 / 4 / 5

#### I know perfectly well . . .

that my teaching has an impact on the students. 1 / 2 / 3 / 4 / 5  
that there are various strategies for enhancing motivation. 1 / 2 / 3 / 4 / 5

#### My goal is always to . . .

have an impact on the students through my teaching. 1 / 2 / 3 / 4 / 5  
motivate the students in their learning process. 1 / 2 / 3 / 4 / 5

#### I am thoroughly convinced . . .

of having a positive impact on the students through my teaching. 1 / 2 / 3 / 4 / 5  
that it is important to continuously question the impact of my teaching. 1 / 2 / 3 / 4 / 5

## **5. I strive for challenge and not merely „doing your best“**

---

### **QUESTIONNAIRE FOR SELF-REFLECTION**

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree

#### **I am very good at . . .**

developing challenging assignments based on learning levels. 1 / 2 / 3 / 4 / 5  
setting challenging learning goals on the basis appropriate to the students' learning needs. 1 / 2 / 3 / 4 / 5

#### **I know perfectly well . . .**

that the assignments in my lessons should be challenging. 1 / 2 / 3 / 4 / 5  
that the learning requirements should be challenging for the students. 1 / 2 / 3 / 4 / 5

#### **My goal is always to . . .**

design my lesson to include challenging goals based on the learning level.  
1 / 2 / 3 / 4 / 5  
design assignments to be challenging for the students. 1 / 2 / 3 / 4 / 5

#### **I'm thoroughly convinced . . .**

that it is important for students to make an effort. 1 / 2 / 3 / 4 / 5  
that suitable challenging learning goals can be formulated only on the basis of the learning level. 1 / 2 / 3 / 4 / 5

## **6. I give and help students understand feedback and I interpret and act on feedback given to me**

---

### **QUESTIONNAIRE FOR SELF-REFLECTION**

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree

#### **I am very good at . . .**

obtaining feedback from my students. 1 / 2 / 3 / 4 / 5  
using the feedback from my students to improve my teaching. 1 / 2 / 3 / 4 / 5

#### **I know perfectly well . . .**

that I need to act on the feedback from my students. 1 / 2 / 3 / 4 / 5  
how to give and help students understand feedback. 1 / 2 / 3 / 4 / 5

#### **My goal is always to . . .**

obtain feedback from my students. 1 / 2 / 3 / 4 / 5  
reflect on the feedback from my students. 1 / 2 / 3 / 4 / 5

#### **I am thoroughly convinced . . .**

that regular feedback strategies need to be integrated into my lessons. 1 / 2 / 3 / 4 / 5  
that I should use my students' opinions as feedback for me. 1 / 2 / 3 / 4 / 5

## **7. I engage as much in dialogue as monologue**

---

### **QUESTIONNAIRE FOR SELF-REFLECTION**

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree

#### **I am very good at . . .**

encouraging students to talk about content. 1 / 2 / 3 / 4 / 5

leading students to learning success through cooperating with others. 1 / 2 / 3 / 4 / 5

#### **I know perfectly well . . .**

that instructions need to be clearly formulated. 1 / 2 / 3 / 4 / 5

the benefits of cooperative learning methods, such as the think-pair-share principle.

1 / 2 / 3 / 4 / 5

#### **My goal is always to . . .**

encourage students to communicate more with each other. 1 / 2 / 3 / 4 / 5

encourage students to present their thinking and solution processes more often.

1 / 2 / 3 / 4 / 5

#### **I'm thoroughly convinced . . .**

that students should communicate with each other. 1 / 2 / 3 / 4 / 5

that it is important to get students to participate more often. 1 / 2 / 3 / 4 / 5

## **8. I explicitly inform students what successful impact looks like from the outset**

---

### **QUESTIONNAIRE FOR SELF-REFLECTION**

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree

#### **I am very good at . . .**

showing the learner what the goal of the lesson is. 1 / 2 / 3 / 4 / 5

showing the learner what the success criteria of learning are. 1 / 2 / 3 / 4 / 5

#### **I know perfectly well . . .**

that learning needs clear, challenging, and transparent goals. 1 / 2 / 3 / 4 / 5

that the visibility of the success criteria is an essential aid for learners. 1 / 2 / 3 / 4 / 5

#### **My goal is always to . . .**

make the objectives of teaching clear, challenging, and transparent. 1 / 2 / 3 / 4 / 5

show learners the success criteria. 1 / 2 / 3 / 4 / 5

#### **I am thoroughly convinced . . .**

that it is my job to ensure clear, challenging, and transparent goals. 1 / 2 / 3 / 4 / 5

that the visibility of success criteria is important for learners. 1 / 2 / 3 / 4 / 5

## **9. I build relationships and trust so that learning can occur in a place where it is safe to make mistakes and learn from others**

---

### **QUESTIONNAIRE FOR SELF-REFLECTION**

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree

#### **I am very good at . . .**

taking into account my students' environment. 1 / 2 / 3 / 4 / 5

establishing a feeling of belonging in the class. 1 / 2 / 3 / 4 / 5

#### **I know perfectly well . . .**

that a positive relationship with students is important. 1 / 2 / 3 / 4 / 5

that students' environment has great influence on their learning. 1 / 2 / 3 / 4 / 5

#### **My goal is always to . . .**

get my students to trust me. 1 / 2 / 3 / 4 / 5

build trust among my students. 1 / 2 / 3 / 4 / 5

#### **I'm thoroughly convinced . . .**

that a positive relationship with my students is important. 1 / 2 / 3 / 4 / 5

that it is important to establish a fair and positive climate in the class. 1 / 2 / 3 / 4 / 5

## **10. I focus on learning and the language of learning**

---

### **QUESTIONNAIRE FOR SELF-REFLECTION**

Assess yourself by rating your agreement with the following statements:

1 = strongly disagree, 5 = strongly agree

#### **I am very good at . . .**

identifying the strengths and weaknesses of my students. 1 / 2 / 3 / 4 / 5

determining what prior (academic) knowledge my students have. 1 / 2 / 3 / 4 / 5

#### **I know perfectly well . . .**

that my students' prior experiences need to be taken into account. 1 / 2 / 3 / 4 / 5

what achievement level my students are at. 1 / 2 / 3 / 4 / 5

#### **My goal is always to . . .**

take into account the strengths and weaknesses of my students. 1 / 2 / 3 / 4 / 5

take into account the prior (academic) knowledge of my students when teaching.

1 / 2 / 3 / 4 / 5

#### **I am thoroughly convinced . . .**

that it is important to know the strengths and weaknesses of my students.

1 / 2 / 3 / 4 / 5

that I should take into account the prior (academic) knowledge of my students when teaching. 1 / 2 / 3 / 4 / 5

# Learning Poster

## Brief description

The students present and visualize the central content of a topic on a learning poster - usually in small groups. The learning poster is then hung up in the classroom.

## Competencies

The students **independently** develop, structure and visualize given learning content.

## Preparation

To ensure that the design of the learning posters is effective, it should be discussed with the class in advance which components belong on a learning poster and which things should be considered when designing it (see the following components in the process).

In addition, materials (posters, pens, glue sticks, etc.) must be brought by the teacher or students and the seating arrangements (group tables) may need to be changed.

## Procedure

1. In collaboration with the class, the teacher summarizes the criteria for the design of a learning poster.

### Design

- Eye-catcher in the middle of the learning poster
- Clear and structured arrangement of content
- Creativity: Does the poster arouse interest quickly? Can the central information be grasped quickly?

### Contents

- Focus on the essentials
  - Emphasize important points
  - Incorporate symbols and images and work with colors (not too much text)
  - Observe spelling and grammar
  - Pay attention to legibility
2. The students then work on their content in small groups and create the learning poster.
3. After the learning posters have been completed, they are hung up in the classroom and viewed by the students together.
4. At the end, the learning posters are discussed and evaluated in plenary. The criteria developed at the beginning for the design of a successful learning poster can serve as orientation for the assessment.

## Tips

If all learning posters deal with the same topic, a discussion and evaluation of the individual posters is recommended. If the learning posters deal with different topics, they should not only be hung up but also presented by the respective group. The gallery walk method can be used to view and discuss the posters.

## Problem-based learning

“Problem-based learning,” a method that involves using a problem to present learning material, originated in the tradition of focusing instruction more strongly toward the learner. There have been 27 meta-analyses conducted on problem-based learning, resulting in a wide range of effects - **1.15!**

The key is students need to know the ideas, facts, and content before embarking on the problem-based part of the lesson, and too often this method is introduced when this pre-knowledge is not taught or checked. Beware of introducing problem-based learning too quickly, before ensuring that the students have the necessary prerequisite knowledge to then engage in the problem-solving.

The meta-analyses demonstrate that problem-based learning can indeed have a great impact on student performance if it is implemented at the right time in the learning process. The right time is not while the students are still in the domain of surface understanding, where problem-based learning can even have a **negative** effect, but once they have reached the domain of **deep** understanding. In other words, problem-based learning will have an effect **only** if the learners have already acquired the necessary knowledge base to complete tasks at the levels of transfer and problem solving.

In addition, it requires that the teachers possess not only the competence to identify the learning levels of the students at the start and then assign them appropriate problems but also the right mindframes to lead the learners into the domain of deep understanding and **motivate** them to work on the problems.

Focusing on problems is undoubtedly an exceptional approach from a pedagogical standpoint, because it has fundamental effects on building a positive culture of mistakes, being a valuable part of the feedback process, as well as on learners' self-regulation, and on possibilities for dividing up the class into groups. Whether problem-based learning is effective depends on several aspects, and it is one of many methods teachers can implement on the basis of evidence.

The factors “**classroom management**,” “**advance organizers**,” and “**problem-based learning**” indicate how influential the perspective of the teacher is for his or her thinking and actions in the classroom. Just as important as what teachers see is how they see it and what beliefs and judgments they are guided by. The teacher's own perspective on learning and teaching thus has lasting effects on the success of students.

(in: Visible learning, Hattie)

Central concept in teaching is **differentiation of tasks according to cognitive levels**, which are based on Bloom's taxonomy. (in: 10 Mindframes, Hattie)

1. **Reproduction:** Reproduction of individual facts (e.g. definitions, formulas).
2. **Reorganization:** Application of several known facts or methods in a familiar context.
3. **Transfer:** Application of known facts or methods in a new but not completely unfamiliar context.
4. **Problem solving:** Applying known facts or methods in a completely new context unknown to the learner; discovering or proving new facts.

This categorization helps teachers to design tasks in such a way that they offer learners appropriate challenges. The aim is not to under- or overchallenge the students but to support them in their "zone of next development".

An example illustrates how a math task can be set at different cognitive levels:

- **Reproduction:** "Calculate the area of a rectangle with sides 5 cm and 3 cm long."
- **Reorganization:** "Calculate the area of a rectangle with sides of 5 cm and 3 cm and compare it with the area of a square with sides of 4 cm."
- **Transfer:** "A gardener wants to create a rectangular bed with an area of 15 m<sup>2</sup>. What combinations of length and width are possible?"
- **Problem solving:** "A gardener wants to create a rectangular bed with an area of 15 m<sup>2</sup>, whereby the length should be at least 2 m and the width at least 3 m. What dimensions are possible and how do they affect the fencing costs?"

Such examples show how different thought processes can be stimulated through targeted tasks. They also illustrate how important it is to challenge learners in order to develop in-depth understanding and problem-solving skills.

## Computing faculty task example (according to Bloom's taxonomy)

### Topic: Password Security and Authentication Methods

Cognitive Level	Task Example
<b>Reproduction</b>	<p><i>"List three characteristics of a secure password."</i></p> <p>☐ Goal: Recall basic facts, such as length, complexity, and unpredictability.</p>
<b>Reorganization</b>	<p><i>"Explain the difference between two-factor authentication and multi-factor authentication using a real-world example."</i></p> <p>☐ Goal: Organize and compare known information.</p>
<b>Transfer</b>	<p><i>"Evaluate the password policy of a school website. Identify weaknesses and suggest improvements."</i></p> <p>☐ Goal: Apply learned principles to a new, familiar situation.</p>
<b>Problem-Solving</b>	<p><i>"A company has fallen victim to a phishing attack. Develop a basic IT security concept that includes guidelines for passwords, authentication methods, and staff training."</i></p> <p>☐ Goal: Solve a complex, unfamiliar problem with a self-devised solution.</p>

## General Education task example (according to Bloom's taxonomy)


### Topic: Media Literacy – Identifying Reliable Information

**Cognitive Level**    **Task Example**

---


**Reproduction**

*"List three characteristics of a reliable news source."*

 Goal: Recall factual content (e.g., author credentials, references, editorial standards).


**Reorganization**

*"Compare a news article from a reputable source with one from a social media post. What differences in tone, structure, and evidence can you find?"*

 Goal: Analyze and relate known facts in a structured way.

**Transfer**

*"You see a viral video claiming a scientific breakthrough. How would you check whether the information is credible?"*

 Goal: Apply concepts in a new but familiar situation.

**Problem-Solving**

*"Create a short training session for first-year students on how to identify fake news and misinformation online. Include examples and interactive elements."*

 Goal: Design a practical solution for a complex real-world issue.

---

## Electrical Faculty task example (according to Bloom's taxonomy)

### Topic: Circuit Design and Electrical Safety

Cognitive Level	Task Example
<b>Reproduction</b>	<p><i>"List the standard color codes used for wiring in residential electrical installations."</i></p> <p>☐ Goal: Recall factual knowledge, such as wire identification (e.g., live, neutral, ground).</p>
<b>Reorganization</b>	<p><i>"Given a simple wiring diagram, explain the function of each component and describe the current path."</i></p> <p>☐ Goal: Interpret and explain known elements in a familiar configuration.</p>
<b>Transfer</b>	<p><i>"Modify this basic lighting circuit to include a second switch that allows control from two locations (staircase logic)."</i></p> <p>☐ Goal: Apply prior knowledge to a slightly unfamiliar but practical problem.</p>
<b>Problem-Solving</b>	<p><i>"Design a safe and cost-efficient wiring plan for a small workshop that includes multiple power tools, lighting, and emergency shut-off systems. Justify your material choices and safety precautions."</i></p> <p>☐ Goal: Solve a real-world problem using analysis, design, and planning skills.</p>



## FOOD PRODUCTION Facility Task Example (according to Bloom's Taxonomy)

### Topic: Food Safety and HACCP in a Training Kitchen

<b>Cognitive Level</b>	<b>Task Example</b>
<b>Reproduction</b>	<p><i>"List five common foodborne hazards and one prevention step for each."</i></p> <p>Goal: Recall key facts (biological, chemical, physical hazards).</p>
<b>Reorganization</b>	<p><i>"Explain cross-contamination and illustrate how a station layout and workflow can minimize it during a lunch service."</i></p> <p>Goal: Analyze and structure known information.</p>
<b>Transfer</b>	<p><i>"Adapt a basic HACCP checklist for a 60-cover training kitchen, including receiving, storage, prep, and service."</i></p> <p>Goal: Apply concepts to a slightly unfamiliar setting.</p>
<b>Problem-Solving</b>	<p><i>"Create a one-hour food-safety briefing and mise en place workflow for 10 new year trainees; include monitoring logs and a corrective-action plan."</i></p> <p>Goal: Design a workable, context-appropriate solution.</p>

---

**AUTOMOTIVE FACILITY TASK EXAMPLE (according to BLOOM'S taxonomy)**

**Topic: Engine Diagnostics and Preventive Maintenance**

<b>Cognitive Level</b>	<b>Task Example</b>
<b>Reproduction</b>	<p><i>"List five dashboard warning lights and state what each indicates."</i></p> <p>Goal: Recall key indicators and meanings.</p>
<b>Reorganization</b>	<p><i>"Compare OBD-II codes P0300 and P0420: affected systems, likely causes, and initial checks."</i></p> <p>Goal: Organize and compare known information.</p>
<b>Transfer</b>	<p><i>"A vehicle shows rough idle and a check-engine light. Outline step-by-step diagnostic actions using scan data and basic tools."</i></p> <p>Goal: Apply principles to a realistic case.</p>
<b>Problem-Solving</b>	<p><i>"Develop a preventive maintenance plan for a 10-car taxi fleet in Jaipur considering climate, road conditions, and cost constraints."</i></p> <p>Goal: Create a comprehensive, practical plan.</p>

---

## **RAC Faculty Task Example (according to Bloom's taxonomy)**

### **Topic: Split AC Installation and Commissioning**

<b>Cognitive Level</b>	<b>Task Example</b>
<b>Reproduction</b>	<p><i>"List the main components of a split AC system and state each function."</i></p> <p>Goal: Recall component roles (compressor, condenser, evaporator, expansion device, filters, controls).</p>
<b>Reorganization</b>	<p><i>"Explain superheat and subcooling and how each is measured during commissioning."</i></p> <p>Goal: Structure and clarify core concepts.</p>
<b>Transfer</b>	<p><i>"Given pressure/temperature readings and symptoms, determine whether the system is undercharged, overcharged, or facing airflow issues."</i></p> <p>Goal: Apply diagnostic reasoning to new data.</p>
<b>Problem-Solving</b>	<p><i>"Propose an installation and safety plan for equipping a training lab with split AC units: load calculations, wiring protection, piping layout, leak test, and a commissioning checklist."</i></p> <p>Goal: Produce a safe, detailed implementation plan.</p>

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## WOODWORKING Faculty Task Example (according to Bloom's Taxonomy)

### Topic: Wood Joinery and Safe Workshop Practice

Cognitive Level	Task Example
<b>Reproduction</b>	<p><i>"List four common wood joints and one typical use-case for each."</i></p> <p>Goal: Recall fundamental joint types and contexts.</p>
<b>Reorganization</b>	<p><i>"Explain the differences between a mortise-and-tenon joint and a dovetail joint in terms of strength, tooling, and production time."</i></p> <p>Goal: Compare and organize technical knowledge.</p>
<b>Transfer</b>	<p><i>"Modify a basic stool design so it safely supports a higher load; indicate where you would change joinery or dimensions."</i></p> <p>Goal: Apply design principles to improve performance.</p>
<b>Problem-Solving</b>	<p><i>"Design a compact workbench for a teaching lab: specify materials, joint choices, fasteners, assembly sequence, and safety considerations."</i></p> <p>Goal: Create a feasible, workshop-ready plan.</p>

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**Facility Management Facility Task Example** (according to Bloom's taxonomy)

**Topic: Preventive Maintenance & Energy Management in a Campus Building**

<b>Cognitive Level</b>	<b>Task Example</b>
<b>Reproduction</b>	<p><i>"List five core facility management functions for an academic building with one KPI for each."</i></p> <p>Goal: Recall FM domains and typical metrics (e.g., housekeeping—cleanliness score, security—incident rate, MEP maintenance—PM compliance—waste—diversion rate, landscaping—inspection score).</p>
<b>Reorganization</b>	<p><i>"Explain the differences between preventive, predictive, and corrective maintenance with one BSDU-relevant example for each."</i></p> <p>Goal: Organize and compare maintenance strategies and their implications (cost, risk, uptime).</p>
<b>Transfer</b>	<p><i>"Given last month's energy bill and a load profile peaking 12:00–16:00 propose two low-cost measures to reduce demand charges without disrupting teaching schedules."</i></p> <p>Goal: Apply energy-management concepts (load shifting, setpoint optimization, scheduling, awareness) to a new dataset.</p>
<b>Problem-Solving</b>	<p><i>"Draft a 90-day operations plan for a new academic block: include a building asset register, PPM schedule, vendor SLAs, safety/housekeeping inspections, and a helpdesk complaint-handling workflow."</i></p> <p>Goal: Create an integrated, practical operations plan aligned with campus constraints and safety requirements.</p>

**Health Care & Paramedic Skills Faculty Task Example** (according to Bloom's taxonomy)

**Topic: Complaint Management (Patient Relation Services)**

<b>Cognitive Level</b>	<b>Task Example</b>
<b>Reproduction</b>	<p><i>"List five formal and informal complaint channels (e.g., front-desk logbook, helpline, email, WhatsApp, suggestion box, in-person) and the minimum fields to capture for each complaint."</i></p> <p>Goal: Recall standard intake channels and essential data (patient ID/contact, date/time, location, staff/unit involved, description, urgency, and resolution).</p>
<b>Reorganization</b>	<p><i>"Explain the differences between a complaint, an incident, and general feedback; map each to an urgency level (high/medium/low), the first responder, and acceptable initial response times."</i></p> <p>Goal: Structure a clear taxonomy and escalation matrix for timely handling.</p>
<b>Transfer</b>	<p><i>"Given three cases—(A) overbilling dispute, (B) rude behaviour at triage, (C) excessive waiting at pharmacy—classify severity, choose immediate service recovery actions (apology script, real-time fix, fee correction/waiver, fast track), and route to responsible units."</i></p> <p>Goal: Apply classification, service recovery, and routing to realistic scenarios.</p>
<b>Problem-Solving</b>	<p><i>"Design a 30-day SOP to manage complaints in OPD: intake form and linkage, triage categories with SLAs (Red 0–15 min; Amber 4 h; Green 24 h), escalation ladder, documentation standards, RCA template (5 Whys or fishbone), CAPA register, and a weekly dashboard (volume, median TAT, rate, top causes, reopen rate)."</i></p> <p>Goal: Create an implementable, metrics-driven complaint-handling process that improves patient experience and safety.</p>