

The Structure of Task- and Problem Based Learning-Processes

How to structure and organise high-quality-lessons?
Module 3



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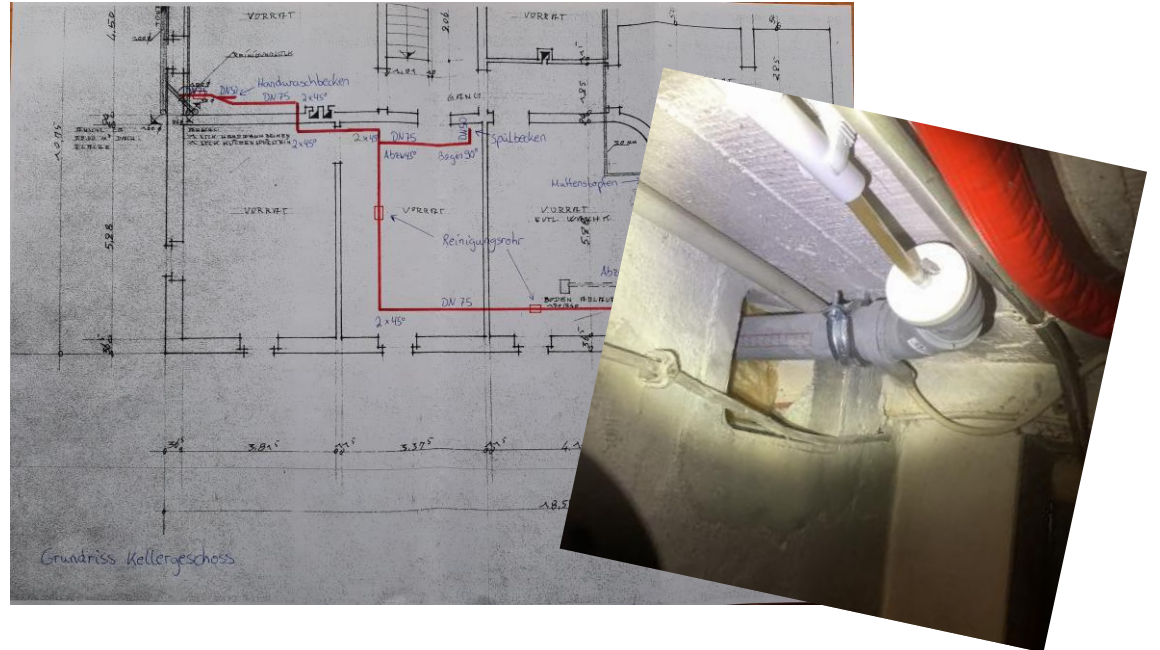


Learning to act – learning by acting

In the last module, we saw that professional competence can be promoted in the classroom through appropriate practical tasks.

Specific skills (knowledge and abilities) are acquired depending on the situation.

We have already gained an initial impression of what a learning process might look like in learning situations that are initiated by learning scenarios.



Photos: Christoph Heßling



	Name:	Date:
	Subject: InGT - Engineering Technology (HT)	
	Learning situation: Creating frames for site plans Email from the school administration	

From: Schulleitung@bk-ostvest.de
 An: CINUI@bk-ostvest.de
 Subject: Creating new frames for site plans of the BKO

Good morning, dear students,

A new project is planned for the Berufskolleg Ostvest. The site plans for orientation on our school grounds are being expanded. You have probably already noticed the current site plans on our grounds, e.g., in front of the forum. A photo of the site plan in front of the forum is attached (see right).



Now three more site plans are to be put up on our school grounds. This also requires three new frames so that the new site plans can be mounted and displayed on the school grounds. However, the dimensions of the new site plans differ from the site plan in front of the forum. Therefore, the dimensions of the frames must also be adjusted

Since you work in the engineering department, we immediately thought of you for this project! Would you please support us in producing the new frames for the site plans? The project should be completed before the summer holidays so that the site plans are ready for the new 2025/26 school year.

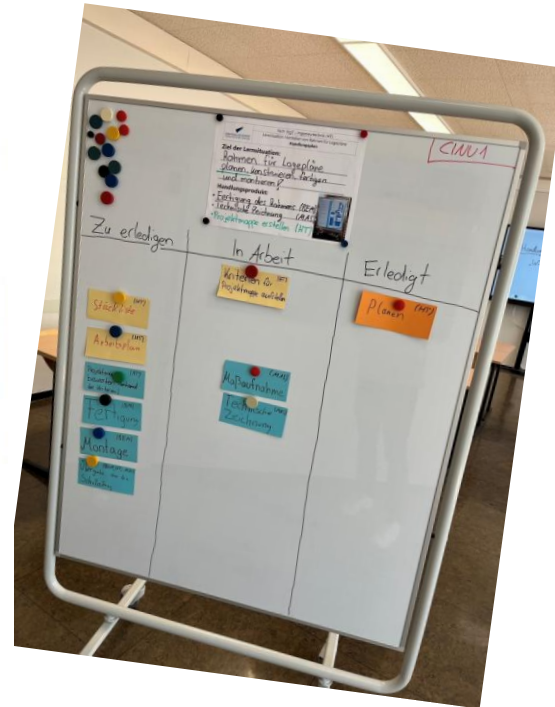
Thank you in advance! 😊



Sincerely,

The school administration - Ms. Brüggemann & Mr. Wiesmann

1/2



The central question that now arises is **how to structure and organise lessons** based on complex problems typical of the profession.

Let`s start with a definition of action oriented and problem based ... learning:

Action-oriented teaching takes place in learning activities that are based on **complete actions** and are student-centred, i.e. tasks that are geared towards the interests, **professional or everyday fields of activity** and the respective level of competence of the learners.



Source: Pixabay



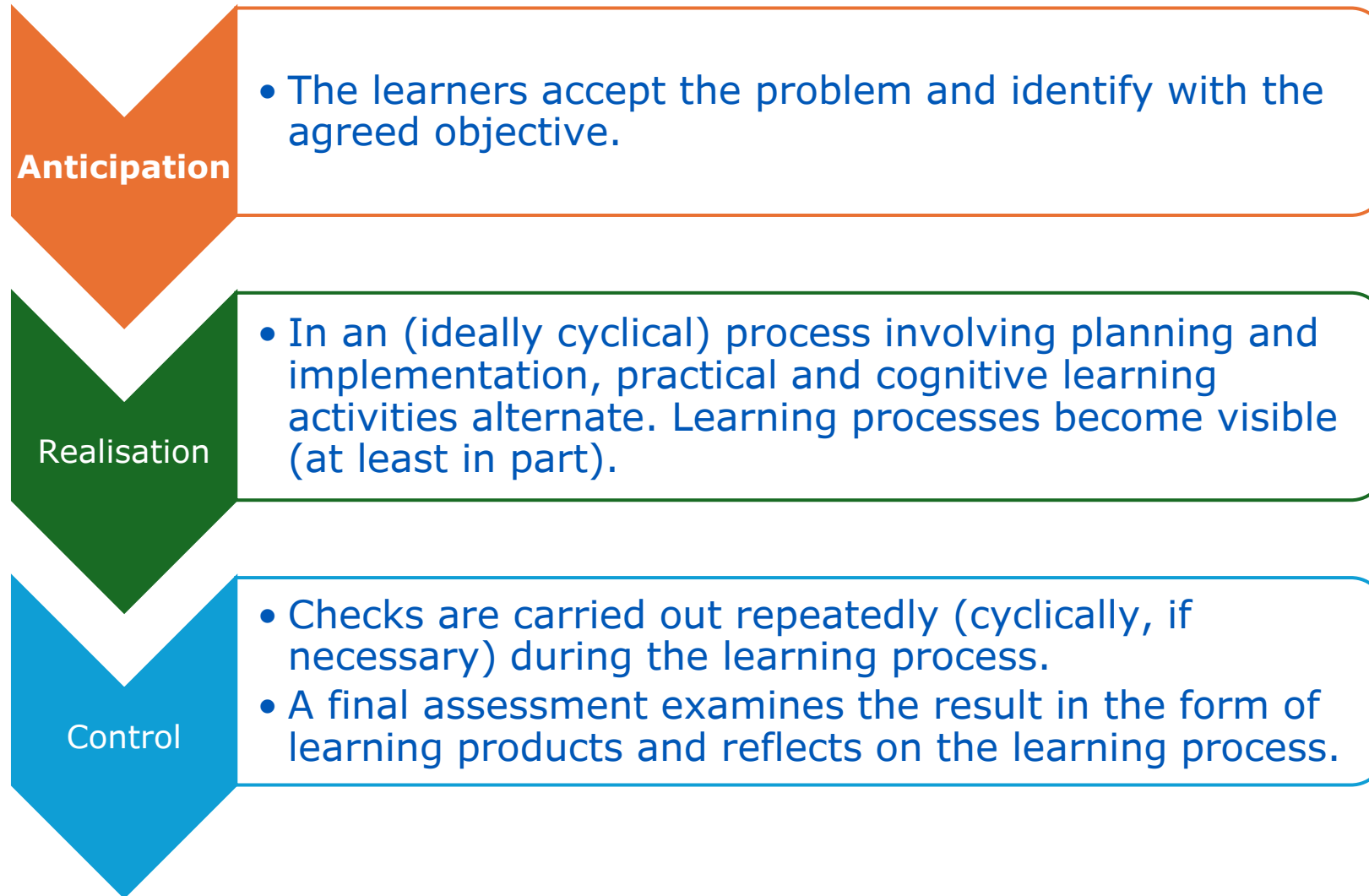
This makes it very precise
when welding, but the

Source: Lesson Video Michael Erz

In several phases of action, learners acquire or deepen their competences in problem-oriented tasks, organised as independently as possible.

We understand an action to be a planned and goal-oriented activity whose learning product and process are evaluated.

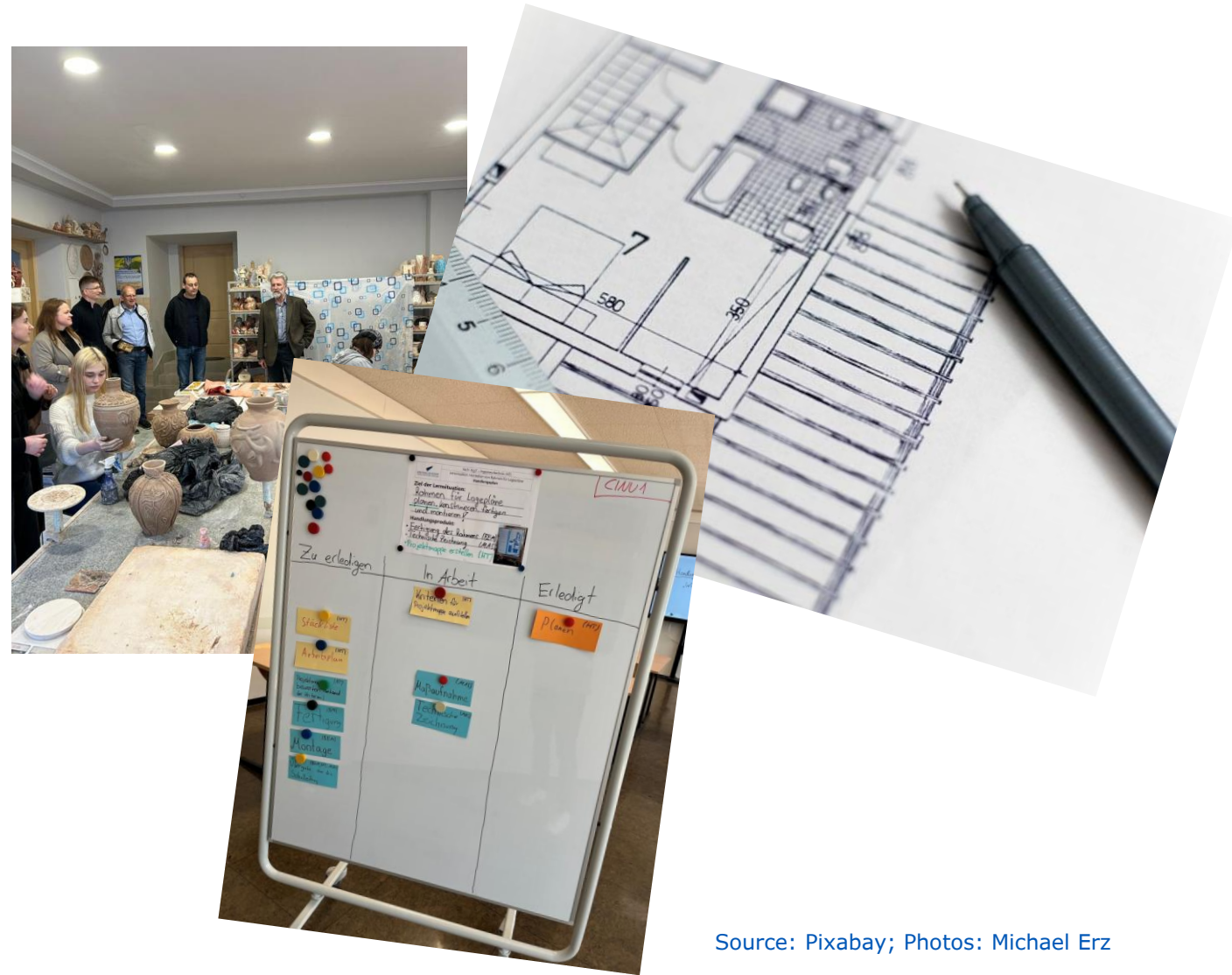
This essentially results in three phases for action-oriented teaching, which we will differentiate further:





By learning products, we do not only understand a physical artefact, but also plans, structures, technical documentations, etc.

The “learning outcome” describes the acquired competences; compare curricular standards.)



Source: Pixabay; Photos: Michael Erz



Problem- and action-oriented teaching pursues the following objectives in particular:

- Motivation for action-oriented skills acquisition
- Acquisition of interdisciplinary skills that enable independent problem solving
- Taking responsibility for one's own learning
- Student-centred approach with strong communication and cooperation elements
- High clarity through meaningful learning situations
- Creation of learning products

compare: Domjahn, J. (2021). *Technik unterrichten – Kompetenzerwerb in Lernsituationen*. Haan-Gruiten: Europa, S. 45



The increase in competence in the action- and problem-oriented learning process always takes place in the context of the respective situation-related task.

The solution of the exemplary problem is followed by phases of practice, consolidation, or transfer to other problem situations (competence expansion with the aim of transferability).

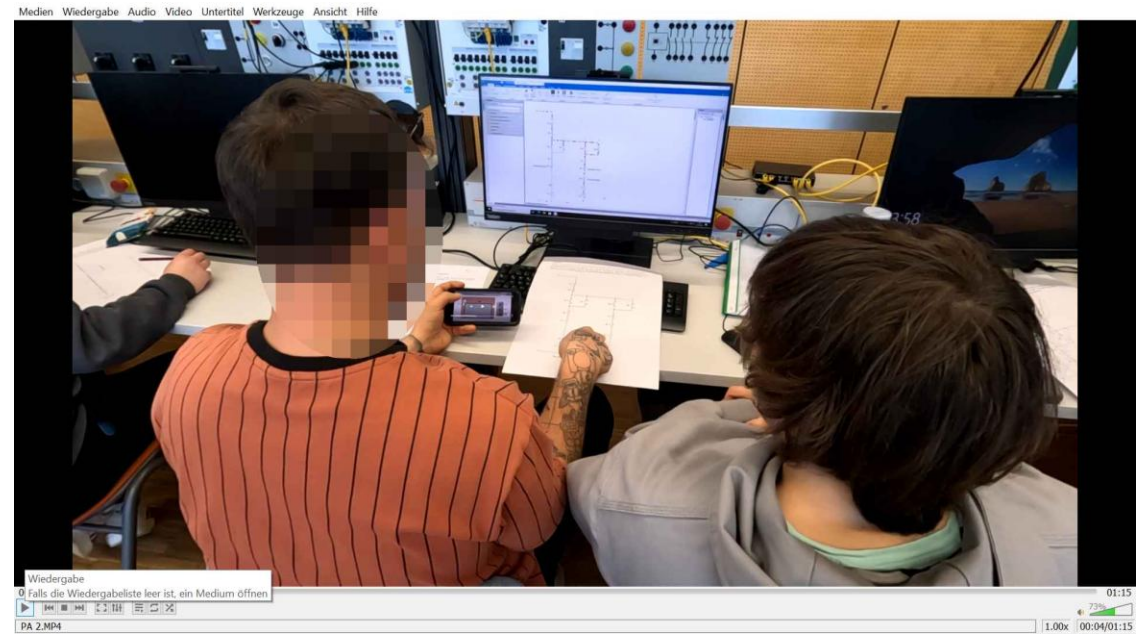


Source: Pixabay

This form of teaching also significantly changes
our role as teachers:

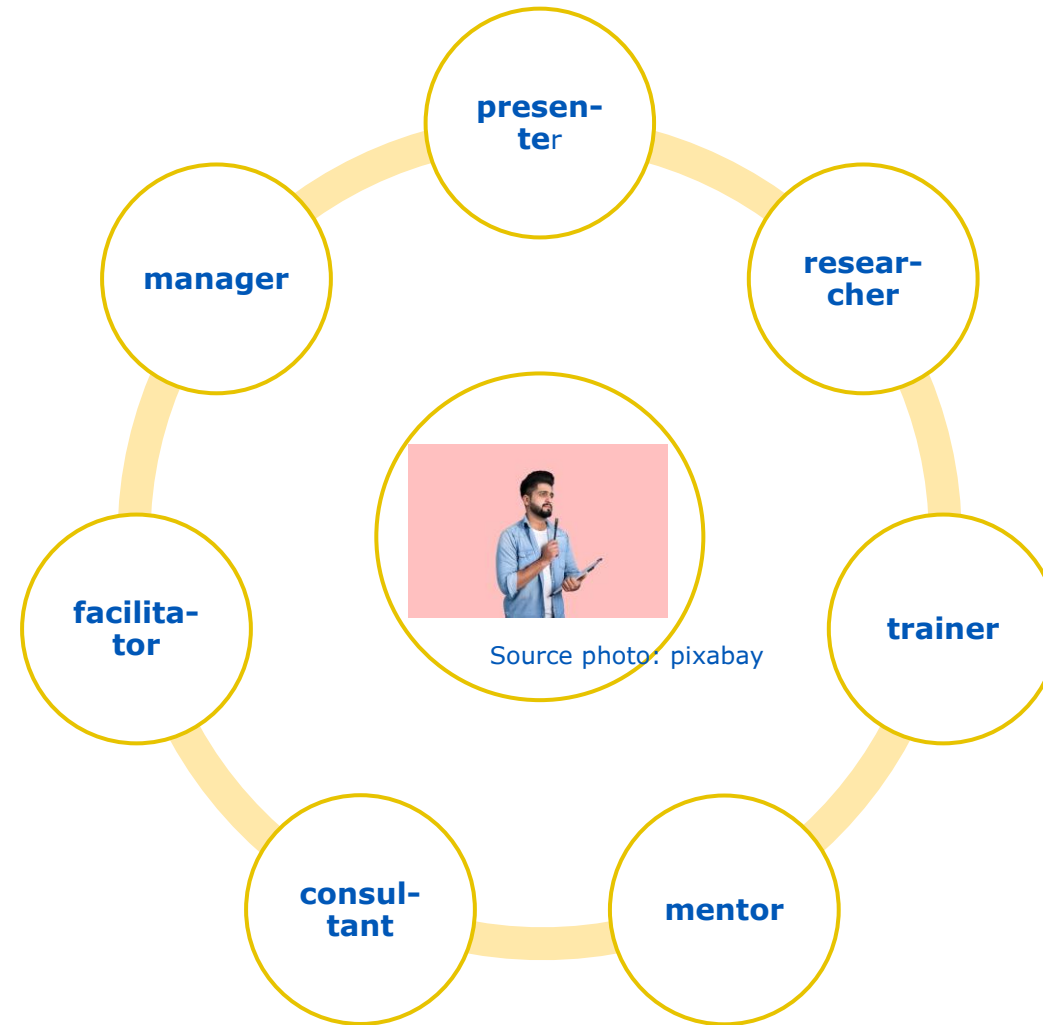


Source: Pixabay



Source: Lesson Video Michael Erz

The new roles of VET-Teachers





Steps in the problem-based teaching and learning process:

1. A problematic situation is proposed that is close to reality and provides a contextual learning model.
2. The problem becomes a challenge. It is essential to internalize this situation as a challenge, to motivate and involve students more.
3. The necessary information is collected and organized and alternatives are generated. At this stage, many questions will arise, and the teacher's role will be to help students ask the most important questions and provide the information they need to solve the problem. Sometimes the answers to the questions will lead to more questions.

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4. Proposals are made. Once the questions are asked and answered, students will have to consider different alternatives for solutions. In this stage, the creative capacity of the students will be stimulated. Cooperation with other teams may be required.

5. The proposal is selected. Once all the alternatives are on the table, the most suitable one will be chosen. Among the different alternatives, it is important to choose one that meets our objective.

6. Actions are planned. It will be essential to assign tasks within the team, including a risk analysis in planning.

7. The chosen and planned actions are executed and developed. Practice and experimentation will develop students' competencies and skills.

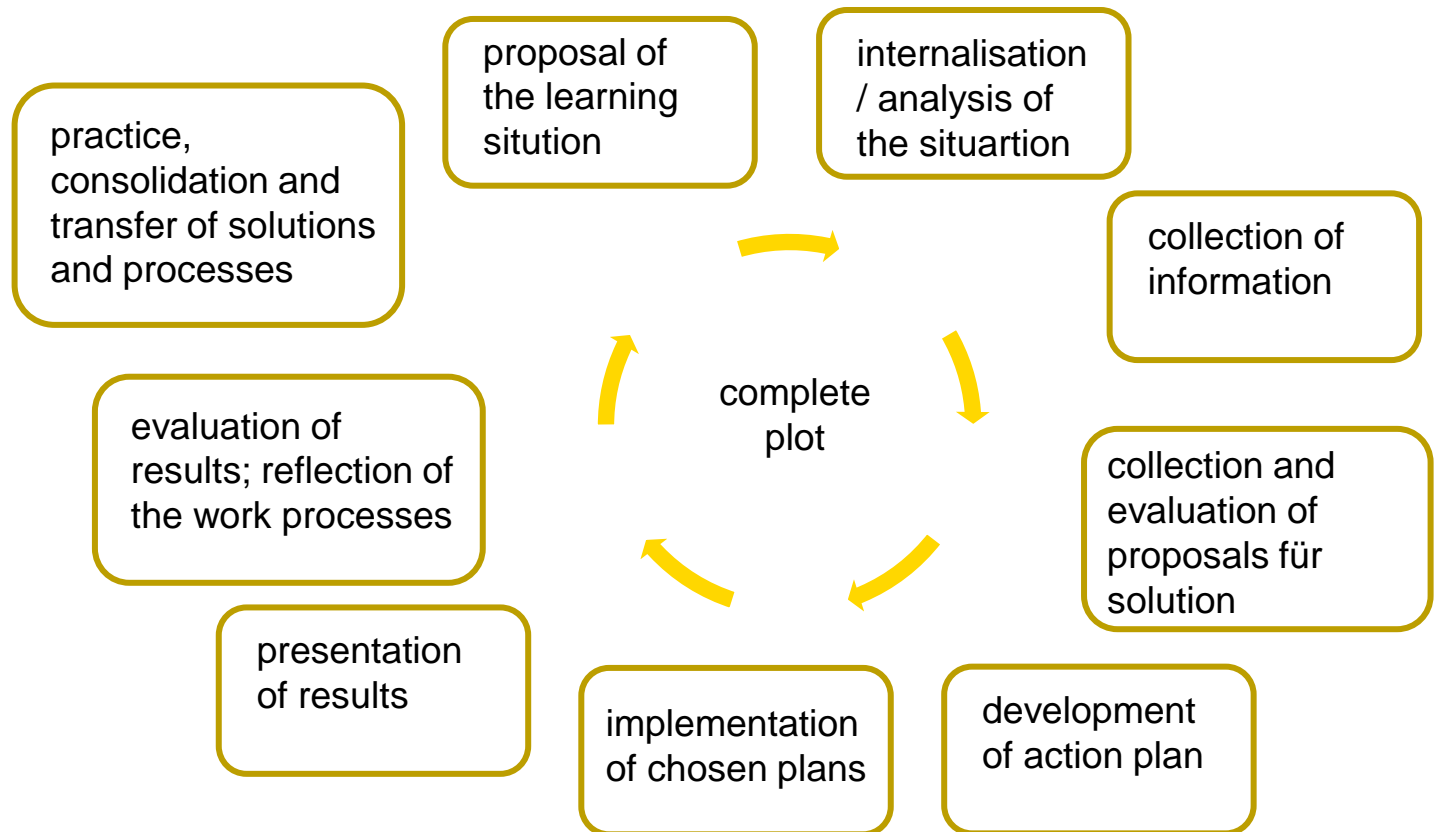


8. Results are presented. Students will present the results of the challenge. This can be done individually or in teams.

9. The evaluation is carried out. The evaluation must take into account not only the results of the project but also the process and attitudes. Students should reflect on how they developed their skills during the project and the definition of future challenges

Source: [http://www.energyeducation.eu/gallery/Handbook%20with%20preface.docx%20\(1\).pdf](http://www.energyeducation.eu/gallery/Handbook%20with%20preface.docx%20(1).pdf), p. 9. Accessed on 29 August 2025.

In the literature, we find a variety of flowcharts for task- and problem-based learning and teaching processes. However, the difference here is not very significant.



Important!

This structure is relevant for the Learning Situation as a whole and for each unit of this learning situation.



	Steps in the Teaching and Learning Process	Description of Steps / Learning and Teaching Activities	People
Deciding	1. Informing	<ul style="list-style-type: none"> • identification of the objective and definition of the learning product 	<p>The teacher:</p> <ul style="list-style-type: none"> • moderates the introductory steps • provides media and materials, • introduces the learning situation, • clarifies the assessment criteria, • encourages students to work independently, • observes the work process, • gives feedback, • ensures subject matter expertise and ensures documentation ... <p>The learners:</p> <ul style="list-style-type: none"> • work largely independently, • use their freedom for decision-making, • organise their workflow independently, • organize work-processes independently, • work in pairs or groups as cooperatively as possible ...
	2. Planning	<ul style="list-style-type: none"> • analysis of available information and sources, • agreeing on media for research. • definition of a possible approach, • collaboration: forming of working groups, if necessary, • Establishment of rules for the work process, • definition of timeframe, format of presentation and documentation of plans 	
	3. Executing	<ul style="list-style-type: none"> • research, information gathering, • development of problem solution, • creating of the learning product, • preparation of presentation, • comparison between groups 	
	4. Presenting	<ul style="list-style-type: none"> • presentation of the learning products 	
	5. Evaluation	<ul style="list-style-type: none"> • evaluation of the learning products and the work process, • reflection and consolidation, • determination of further steps 	

Based on: Domjahn, J. (2021). *Technik unterrichten – Kompetenzerwerb in Lernsituationen*. Haan-Gruiten: Europa, S. 48



	Етапи процесу навчання та викладання	Опис Кроки / Навчальна та викладацька діяльність	Люди
Deciding	1. Інформування	<ul style="list-style-type: none"> • ідентифікація з той/та/те мета та визначення з той/та/те навчання продукт 	<p>Вчитель :</p> <ul style="list-style-type: none"> • помірковує вступний кроки • забезпечує медіа та матеріали , • представляє той/та/те навчання ситуація , • уточнює той/та/те оцінювання критерії , • заохочує студенти до робота незалежно , • спостерігає той/та/те робота процес , • дає зворотний зв'язок , • забезпечує предметну експертизу та забезпечує документація ... <p>Учні :</p> <ul style="list-style-type: none"> • робота Ланглі незалежно , • використання їхні свобода для прийняття рішень , • організувати їхні робочий процес незалежно , • організувати робочі процеси незалежно , • працювати в парах або групи як спільно якомога більше...
	2. Планування	<ul style="list-style-type: none"> • аналіз з доступний інформація та джерела , • домовленість щодо медіа для дослідження . • визначення можливого підходу , • співпраця : формування з робочий групи , якщо необхідно , • Створення правила для той/та/те робота процес , • визначення з часові рамки , формат з презентація та документація з плани 	
	3. Виконання	<ul style="list-style-type: none"> • дослідження , інформація збір , • розвиток з проблема рішення , • створення з той/та/те навчання продукт , • підготовка з презентація , • порівняння між групи 	
	4. Презентація	<ul style="list-style-type: none"> • презентація з той/та/те навчання продукти 	
	5. Оцінювання	<ul style="list-style-type: none"> • оцінювання з той/та/те навчання продукти та робота процес , • рефлексія та консолідація , • рішучість з далі кроки 	

Based on: Domjahn, J. (2021). *Technik unterrichten – Kompetenzerwerb in Lernsituationen*. Haan-Gruiten: Europa, S. 48

Task- and Problem-Based Learning at a glance

Medien Wiedergabe Audio Video Untertitel Werkzeuge Ansicht Hilfe

created using
my simpleshow

Навчальне підприємство або
в модельному підприємстві.

00:14 02:30
73%
Henning Hoge - Vollständige Handlung 1.00x 00:14/02:30

Source:
<https://www.youtube.com/watch?v=Do5iHqQw9Vc>

Job 3.1



Source: Fachhochschule Münster

Let's return to Lesson **Video 2**, which we watched at the beginning of Module 1. Here are two tasks:

- On slide 8, I have compiled criteria for task- and problem-based learning processes. Are these criteria – as far as they are visible in the video – fulfilled in this lesson?
- Are the **structures** of task- and problem-based teaching and learning visible in this lesson?



Problem- and action-oriented teaching pursues the following objectives in particular:

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compare: Domjahn, J. (2021). Technik unterrichten – Kompetenzerwerb in Lernsituationen. Haan-Gruiten: Europa, S. 45

30/08/2025

Name, Organisation, Contact

8



Steps in the Teaching and Learning Process	Description of Steps / Learning and Teaching Activities	People
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Based on: Domjahn, J. (2021). *Technik unterrichten – Kompetenzerwerb in Lernsituationen*. Haan-Gruiten: Europa, S. 48



Note your ideas on cards.

We will now work in the 'think-pair-share' structure that we learned about in the videos:

- First, think about it on your own for 10 minutes,
- then in groups of three (20 mins.),
- and after we will share your thoughts with the whole group.



Let`s discuss your impressions ...



Source: Pixabay

Job 3.2



Source: Fachhochschule [Münster](#)



Let's get to **your own lessons, which you have already uploaded** to the Padlet and think about the same topics:

- On slide 8, I have compiled criteria for task- and problem-based learning processes. Are these criteria – as far as they are visible in the video – fulfilled in this lesson?
- Are the structures of task- and problem-based teaching and learning visible in this lesson?



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If you would like to make changes, just note your ideas😊)

Note your ideas on the Padlet.

We will now work in groups of 3 or 4. Agree on a video / lesson plan, you would like to think about first.



Let`s discuss your impressions ...



Source: Pixabay