

Active Learning with AI – Practical Examples for Teachers

Related learning material: M3-T2-MLC1 – Active Learning and Developing Transversal Skills with Artificial Intelligence

Purpose of the exercise: Putting into practice the active learning methods presented in the learning material (inquiry-based and research-based learning, the flipped classroom, project-based learning): the teacher uses AI as a pedagogical assistant to redesign one of their own lessons in an active learning format, while students carry out a classroom task in which AI does not give them the answer but, as a questioning partner, develops their critical thinking, collaboration and autonomy.

Exercise 1 – an exercise to support the teacher's own learning

Title: From a Frontal Lesson to an Active Lesson – Redesigning a Lesson with AI

Exercise: The teacher selects one of their own traditional lessons (built on teacher explanation) and, with the help of ChatGPT, redesigns it as an inquiry-based learning or flipped classroom lesson. Along the way, the teacher critically checks whether, in the new lesson plan, the work of thinking is really done by the students rather than by AI.

Duration: 30 minutes

Format: individual, independent preparation

Tools: computer, ChatGPT (or another chatbot), one of your own lesson plans or a scheme of work, the text of the learning material

Instructions:

1. Choose an upcoming lesson that you usually start with a teacher explanation. Note down the topic of the lesson, the learning objective and the characteristics of the group (grade, vocation, group size).
2. Based on the learning material, decide which method suits the topic better: inquiry-based learning (if the topic can be built around a problem or a “mystery”) or the flipped classroom (if there is a lot of basic knowledge that students can work through independently before class).
3. Open ChatGPT and paste in the prompt below, replacing the parts in square brackets with the details of your own lesson.

ChatGPT prompt (for your own preparation):

Act as an experienced pedagogical consultant in vocational education and training! I teach [vocation, grade] students; the topic of the lesson is [topic] and the learning objective is [objective]. So far, I have started this lesson with a teacher explanation. Help me transform it into an [inquiry-based learning / flipped classroom] lesson! Before making a suggestion, ask me three questions about my group and my circumstances! Then suggest a lesson plan broken down into phases, and for each phase indicate separately what the students do, what the teacher does and what AI can be used for!

4. Answer the chatbot's questions, then review the lesson plan you receive against the most important rule of the learning material: “the question belongs to the student”. Mark the steps where AI would do the thinking instead of the students (e.g. it formulates the hypothesis or gives a ready-made answer), and rewrite them so that AI helps as a questioning partner, a simulator or a tutor.
5. Check the professional accuracy of the suggested content, then add a short reflection question for students to the lesson plan (“How did I use AI?”).

Takeaway: “A lesson that I redesigned in an active learning format, and one point in it where I deliberately left the work of thinking to the students.”

Exercise 2 – classroom work with students

Title: “Don’t tell us the answer!” – AI as a questioning partner

Exercise: In small groups, students investigate a realistic problem related to their vocation. First, they formulate their own hypothesis about the cause of the problem, and then “test” it with the help of ChatGPT: AI does not give the solution, but asks follow-up questions and raises a counterargument, and the group has to defend or modify its hypothesis together. The task develops critical thinking, collaboration, communication and learner autonomy.

Duration: 45 minutes

Format: small-group work (groups of 3–4)

Tools: one device per group (smartphone or laptop) with internet and ChatGPT access, a case description prepared by the teacher, paper or a shared document for taking notes

Instructions:

1. The teacher presents a short, realistic case description from which the solution is deliberately missing (e.g. “Why won’t the dough rise in the bakery?”, “Why does the circuit breaker keep tripping in the training workshop?”, “Why are guests complaining that the food is cold?”). The teacher can also prepare the case description in advance with the help of AI.
2. For 5 minutes, the groups discuss the problem without AI, write down two or three possible explanations, and then choose the one they consider most likely – this becomes the group’s hypothesis.
3. Using the prompt below, the group “tests” its hypothesis with ChatGPT – replacing the parts in square brackets with their own details.

ChatGPT prompt (for the classroom group task):

We are vocational school students training to become [vocation]. Our problem: [short description of the problem]. Our hypothesis is that [the group’s hypothesis]. Don’t tell us whether we are right, and don’t give us the solution! Ask three questions that help us refine our hypothesis, raise one counterargument, and ask us what simple investigation or measurement we could use to check it!

4. The group answers AI’s questions together and decides whether to keep, refine or reject its hypothesis. They write down what simple investigation or measurement they would use to check it (What are we measuring? What is the control?).
5. Each group briefly (about 2 minutes) presents its hypothesis, AI’s strongest counterargument and how they responded to it. The other groups may ask one question each.
6. Individual wrap-up: each student writes a short “How did I use AI?” entry: what did we use AI for, which of its questions or counterarguments helped the most, and what did we not accept from it – and why?

7. Joint wrap-up: the teacher summarises that AI supports learning when it prompts us to think rather than working in our place – the question and the decision always belong to the group.

Takeaway: “A hypothesis that our team refined or defended together after AI’s questions – and an argument we can use to support it.”

Note for teachers: in the first exercise, the teacher uses AI as a pedagogical assistant to design an active learning lesson, while the second exercise puts the most important rule of the learning material – “the question belongs to the student” – into practice. The two exercises can be combined: Exercise 2 can be built into the inquiry phase of the lesson redesigned in Exercise 1. As the “Takeaways for Teachers” section of the learning material emphasises, the real value of this opportunity lies not in the tool itself, but in the pedagogical approach with which we use it; responsibility for assessment and grading remains with the teacher throughout.

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