

Generating Interactive Learning Content with AI

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Learning objective

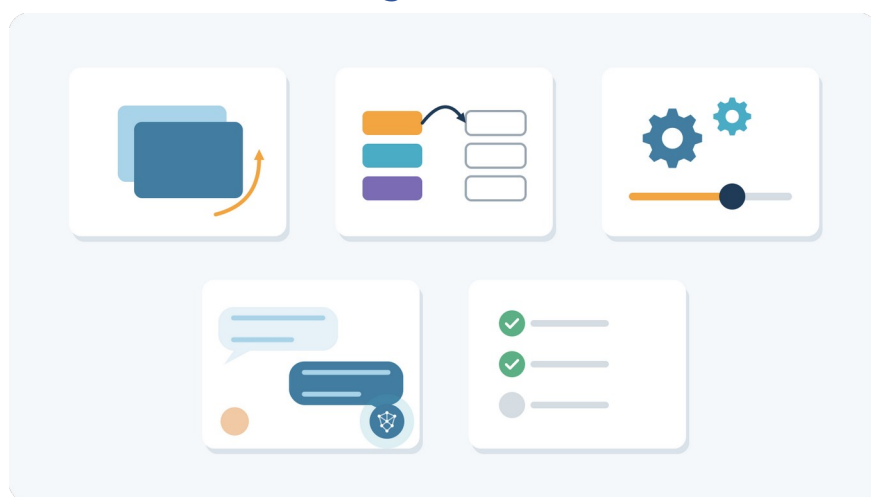
Learners learn more when they do something with the content: answer, decide, sort, try, get feedback and try again. The aim of this material is to introduce ways in which AI can help teachers design interactive learning materials – quizzes, branching scenarios, interactive worksheets, self-check exercises, dialogue-based tasks, simulations and practice activities. By the end of the material, teachers will be able to match interaction types to learning goals, use AI to generate interactive content with meaningful feedback, and test and revise it for correctness, usability, accessibility and data protection before classroom use.

Introduction

Interactive materials used to be expensive to produce: writing good questions, plausible distractors and helpful feedback took time, and turning them into a working digital activity required technical skills. Generative AI changes both parts. A language model can draft dozens of questions with feedback in minutes, and AI tools that write code can turn them into a working web page or an import file for a learning platform.

The risk is that quantity replaces quality. An interactive element is only valuable if the interaction supports the learning goal, makes learners think, and gives safe and useful feedback. The focus of this material is therefore not only on generating content, but on designing meaningful interaction.

Types of interactive learning activities



Flashcards, drag-and-drop, simulations, dialogue-based tasks and self-check lists are typical interactive formats

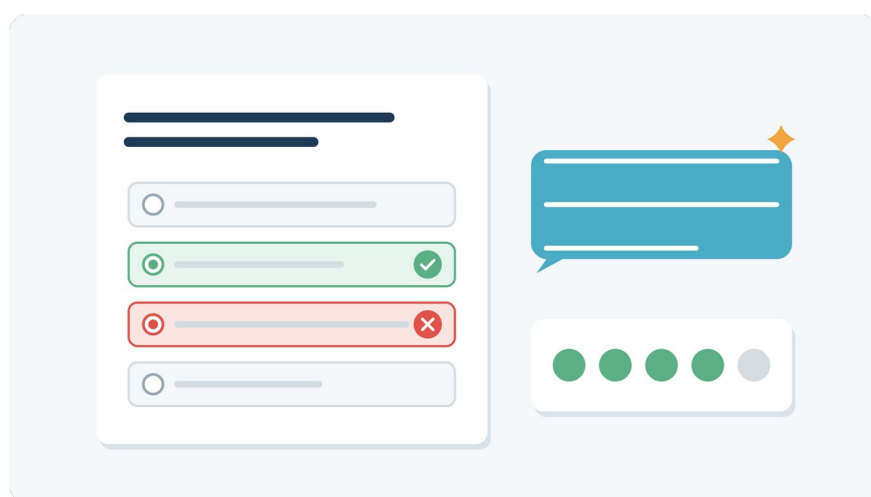
Choose the interaction type according to what learners should be able to do:

- **Recall and understanding** → quizzes, flashcards, matching, fill-in-the-gap worksheets.
- **Procedures** → ordering and drag-and-drop tasks (“put the steps of the brake check in the correct order”).

- **Decisions and problem solving** → branching scenarios, fault-diagnosis cases.
- **Communication** → dialogue-based tasks in which an AI plays a customer, colleague or supervisor.
- **Understanding relationships** → simple simulations in which learners change a parameter and observe the effect (e.g. voltage, resistance and current).
- **Reflection and self-assessment** → self-check lists and short reflective questions with model answers.

Quizzes with meaningful feedback

Quizzes are the easiest interactive element to generate – and the easiest to generate badly. Feedback is one of the strongest influences on learning, but only if it tells learners why an answer is right or wrong and what to do next. Ask the AI explicitly for distractors based on typical misconceptions and for explanatory feedback on every option.



A quiz with immediate, explanatory feedback and a final score supports formative self-assessment

Example prompt for a quiz with feedback

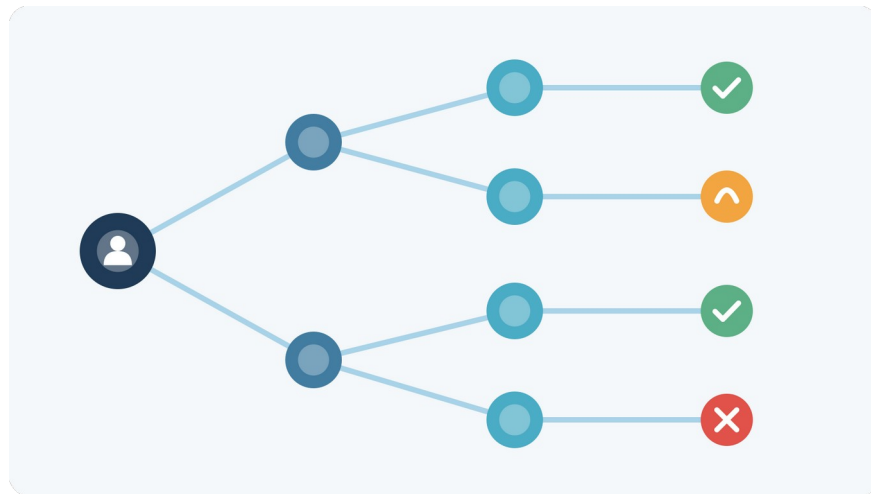
“Create 8 multiple-choice questions for first-year electrician apprentices on protective earthing, based only on the attached textbook chapter. Each question has 4 options. The wrong options should reflect typical learner misconceptions. For every option, write one sentence of feedback explaining why it is correct or incorrect. Mark the difficulty (easy/medium/hard). Output in Moodle GIFT format.”

The output can be imported into learning platforms (for example Moodle via the GIFT or Aiken formats, or quiz tools via CSV), or turned into a stand-alone web page by an AI tool that writes code. The interactive modules of the VITA project are an example: Codex generates them from the Word documents, including a quiz that evaluates the questions one by one and shows a final score.

Branching scenarios

A branching scenario presents a realistic situation and asks the learner to choose; each choice leads to a different consequence and to further decisions.

It is well suited to vocational learning, where professional judgement matters: handling a customer complaint, diagnosing a fault, reacting to a safety incident.



In a branching scenario each decision leads to a different consequence – good, acceptable or problematic

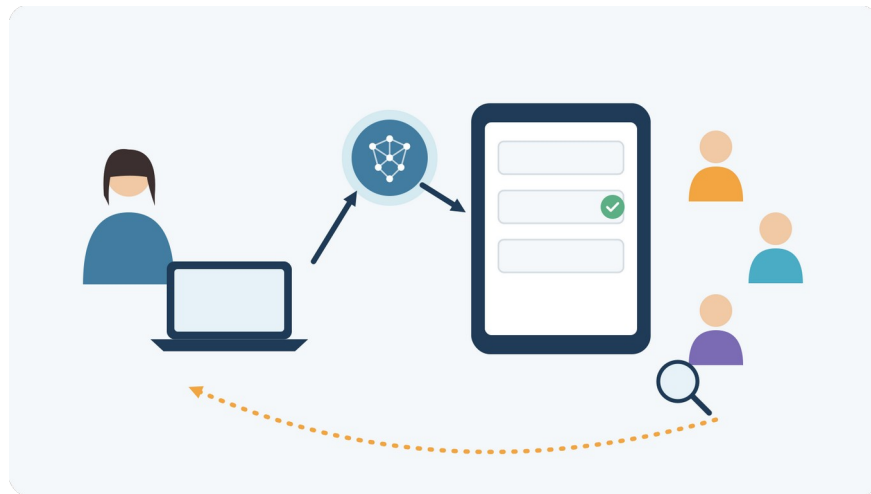
AI is very good at drafting such trees: “Write a branching scenario with three decision points for a hairdressing apprentice whose client is unhappy with a colour result. Give three options per decision, the consequence of each, and feedback that refers to professional communication and customer service standards.” The teacher’s role is to check that the “best” path is really professionally correct and that the consequences are realistic.

Dialogue-based tasks and simulations

With a well-written instruction, a chatbot can act as a practice partner: a customer who asks questions, a supervisor who expects a report, a patient who describes symptoms. The instruction should define the role, the situation, the level of difficulty, when the dialogue ends and what feedback the learner receives at the end. Some platforms allow such instructions to be saved as a custom assistant (for example custom GPTs), so learners can use them repeatedly under the school’s rules.

Simple simulations – a slider that changes a value and shows the result, a calculator for a workshop formula, a virtual control panel – can be created by AI tools that write and run code (for example code blocks in ChatGPT, Artifacts in Claude, or agents such as Codex). The teacher describes the behaviour in plain language and tests the result.

Build, test, revise



Build with AI, test with learners, observe, and revise

AI-generated interactive content must be tested before it reaches the classroom:

- **Correctness:** check every answer key and every feedback text – AI-generated keys can be wrong, and a quiz that marks a wrong answer as correct teaches the error.
- **Usability:** try the activity yourself, on a phone as well; are instructions clear, do buttons work, is the score calculated correctly?
- **Accessibility:** sufficient contrast, readable font size, alternative text for images, keyboard operation, no time pressure where not needed.
- **Data protection:** prefer activities that do not collect personal data; if a tool requires learner logins or stores results, check that its use complies with the GDPR and the school's rules.
- **Pilot and revise:** try the activity with a few learners, observe where they get stuck, and ask the AI to revise specific parts.

Design question

Good interactive content makes learners think, not just click. Before publishing, ask: Which learning goal does this interaction serve? What does the learner have to decide or do? Is the feedback correct, specific and encouraging?

Takeaways for teachers

- Start from the learning goal and choose the interaction type that fits it.
- Ask AI for misconception-based distractors and explanatory feedback for every option.
- Branching scenarios and dialogue tasks train professional decisions and communication.
- AI tools that write code can turn content into working quizzes and simulations – test them thoroughly.
- Check correctness, usability, accessibility and data protection; pilot with learners and revise.

References

- Hattie, J. & Timperley, H. (2007): The Power of Feedback. Review of Educational Research, 77(1), 81–112.
- Clark, R. C. & Mayer, R. E. (2016): e-Learning and the Science of Instruction. 4th ed., Wiley.
- Moodle Docs: GIFT format; H5P documentation.
- Lengyel, Zs. (2026): Concrete applications for content generation. VITA training presentation.

Links

- H5P – interactive content: h5p.org
- Moodle GIFT format: docs.moodle.org/en/GIFT_format
- Example of a VITA interactive learning module: dmc-edu.eu

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