Scenario-based learning

Scenario-based learning offers an effective pedagogical strategy for advancing inclusive education by creating learning experiences that are interactive, motivating, and grounded in real-world practice. By situating learning within purposeful narrative scenarios, this approach supports learners in tackling complex problems while fostering the development of transferable skills through active engagement (Volpe 2024).

When designing a scenario:

1. Identify the learning outcomes. It is important to identify what you want students to achieve on completing the scenario and then work backwards from the learning outcomes to create the situation that will lead to this learning.
2. Decide on your format. Is your scenario delivered in face-to-face or online environments? What media (photographs, audio, video) and other resources will you need? If you use an online scenario, will you provide other supporting activities, such as wikis, discussion forums, etc.?
3. Choose a topic. Remember that non-routine tasks lend themselves to scenario-based learning. Consider using 'critical incidents' and challenging situations that have occurred in your subject area.
4. Identify the trigger event or situation. This will be the starting point of your scenario. As you create the scenario, identify decision points and key areas for feedback and student reflection. Creating a storyboard is an effective way to do this.
5. Peer review your scenario. Ask colleagues to work through the scenario to ensure it flows as you expect and achieves the outcomes you intended.

This activity plan focuses on research commercialisation. Change the scenario to fit your context and course learning outcomes.

Description	This lesson immerses students in a simulated scenario where they act as a research team seeking to commercialise a new technology developed within a university lab. The scenario requires them to navigate challenges such as intellectual property protection, market validation, funding strategies, and stakeholder engagement. Students work collaboratively to make decisions, justify their reasoning, and reflect on the complexities of bringing research to market.
Learning outcomes	By the end of the lesson, students will be able to: • Explain the key stages of research commercialisation (IP protection, market analysis, funding, partnerships, scaling). • Apply theoretical knowledge to a practical scenario requiring decision-making under uncertainty.

	• Critically evaluate commercialisation pathways and their risks/benefits. • Collaborate to develop a coherent strategy for moving research from lab to market. • Reflect on the ethical, social, and economic implications of research commercialisation
How it works	1. **Scenario Setup (15 minutes):** o Students are introduced to a fictional but realistic case: e.g., a university research team has developed a biodegradable packaging material with potential to disrupt the plastics industry. o Background information is provided: technical details, preliminary test results, potential competitors, and funding constraints. 2. **Decision Points (40 minutes):** o Students are divided into groups and presented with staged decision points: ▪ Should the team patent the technology or pursue open innovation? ▪ How should they validate market demand? ▪ Which funding route is most viable (venture capital, government grants, industry partnerships)? ▪ What ethical considerations must be addressed (environmental impact, accessibility, equity)? o Each group discusses options, makes decisions, and records their rationale. 3. **Stakeholder Role Play (20 minutes):** o Groups present their strategy to a panel of peers acting as stakeholders (investors, policymakers, industry partners). o Stakeholders challenge assumptions and ask critical questions. 4. **Debrief and Reflection (15 minutes):** o Instructor facilitates a discussion comparing strategies. o Students reflect individually on what they learned about the complexities of research commercialisation.

Resources required	• Scenario briefing documents (technology description, market data, competitor landscape). • Worksheets for recording decisions and rationales. • Role cards for stakeholders (investor, policymaker, industry partner, environmental advocate). • Access to digital collaboration tools (e.g., breakout rooms, shared documents).
AI considerations	• AI can help **generate hypothetical stakeholder perspectives** (e.g., investor concerns, policymaker priorities), which students then critique for realism and relevance. • AI can **support evidence gathering** by surfacing comparable case studies or industry data, but students must critically evaluate credibility and applicability. • Students should treat AI outputs as starting points for inquiry, **questioning assumptions and refining arguments** rather than accepting them uncritically. • **Ethical reflection** is key: students must acknowledge how AI influenced their reasoning and consider whether reliance on AI could bias decision-making in commercialisation contexts.

Assessment	• **Formative:** Observation of group discussions and decision-making processes, with feedback on critical thinking and collaboration.
	• **Summative:**
	  ○ Group submission of a commercialisation strategy document, assessed on clarity, feasibility, and critical engagement with risks.
	  ○ Individual reflection essay evaluating their own decision-making process and how AI tools shaped their analysis.
	  ○ Optional peer assessment of stakeholder role play contributions.