

UNIT 5: Designing learning scenarios



Structure of the Stage

This stage consists of 10 parts:

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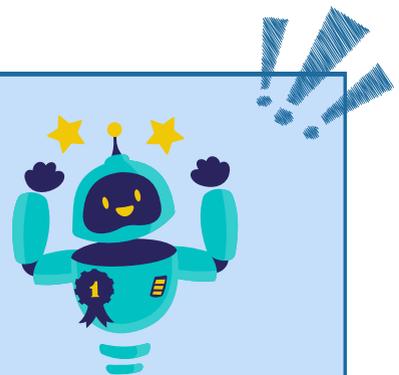
Aim and Objectives

The aim of this unit is to support you in designing meaningful and effective learning scenarios that bring computational thinking (CT) to life in adult education.

Have you ever wondered how abstract CT concepts can be transformed into engaging, hands-on activities that truly resonate with learners? In this unit, you will explore exactly that: how to translate core CT ideas into practical, learner-centred exercises that reflect the real needs, experiences, and motivations of adult learners.

By the end of this unit, you will be able to confidently design learning scenarios that spark problem-solving, logical reasoning, and creativity, no matter the subject you teach. Imagine turning your lessons into experiences where learners not only acquire knowledge but also develop thinking skills they can use in real life!

Adults learn best when they see immediate relevance. Connecting CT to everyday life not only makes learning more engaging, it actually helps the brain retain information better!



Reflect on your own teaching practice and adapt learning scenarios to different educational settings, levels, and learning objectives.





Outcomes

By the end of this unit, an adult trainer will be able to design and implement learning scenarios that apply computational thinking principles to real-life topics such as disinformation, using practical tools adapted to adult education contexts.



Justification

Learning scenarios should be as realistic as possible. Scenario-based learning immerses learners in meaningful contexts through simulations or structured situations that reflect real challenges.

Learning scenarios should be as realistic as possible

Learner-centred: designed to allow learners to apply the skills they are developing while at the same time strengthening their weaker areas.

They should apply a learning-by-doing approach and foster learner motivation.

Research shows that learning-by-doing in real-life contexts boosts motivation and helps learners strengthen areas they find challenging





What Is a Learning Scenario?

A learning scenario is more than just a series of activities, it's a structured framework that guides learners toward achieving competency-based objectives. In adult education, a learning scenario always starts from a real-life problem and guides learners through a clear thinking process, using computational thinking as a support tool.

Did you know that...?



Computational Thinking develops most effectively when you apply it to concrete, familiar and recognisable problems, such as organising daily tasks, making decisions, following instructions or improving everyday processes.

In short, a learning scenario is a bridge between knowledge and competence: a space where learners can experiment, make mistakes, and grow, while you as a trainer guide and support the learning process.

Want to learn more about learning-scenarios?



A learning scenario is a narrative that describes a situation in which learners become active participants who must make their own decisions.

These decisions trigger a series of subsequent events in which further choices are required.

For this reason, the main characteristic of a learning scenario is not that participants identify the correct answer, but that they learn from their mistakes.



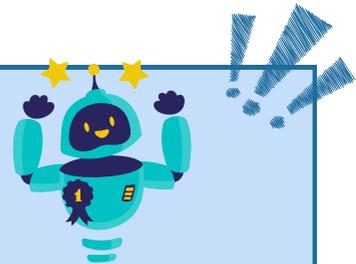


Some Types of Learning Scenarios

Different types of learning scenarios can be used to support computational thinking, depending on the learning objectives, the learners' profiles and the level of complexity required. Here are some common types of learning scenarios and their purposes in education.

- **Gamified scenarios:** Use game mechanics and dynamics to increase motivation and engagement.
- **Decision-making scenarios:** Present a dilemma in which each choice leads to different outcomes. They are particularly suitable for training leaders and managers.
- **Narrative scenarios:** Incorporate stories that capture learners' attention and create an emotional connection with the content.
- **Simulations:** Useful for developing practical skills in areas such as healthcare, aviation, or technology.

Combining different type of scenarios can create rich learning experiences that support CT through exploration, experimentation, and reflection.



What should the learning process be?





Benefits of Scenario-Based Learning

- Learning is situated in realistic contexts: This makes it easier for learners to transfer knowledge and skills to professional and real-life situations.
- Scenarios build on learners' existing knowledge and experience: They help connect new learning to what learners already know and do, supporting deeper understanding.
- Scenario-based learning addresses more than content knowledge: It also develops skills, attitudes, and decision-making abilities in authentic contexts.
- Working on realistic problems increases engagement: When learners see a clear, recognizable purpose, motivation and participation naturally rise.
- Concepts and models are learned through use, not isolation: Applying ideas in context leads to deeper understanding and longer-lasting learning.



Did you know that...?



When learning happens in real-life contexts, the brain makes stronger connections between knowledge and action, making it much easier for learners to apply what they've learned outside the classroom.



Benefits of Scenario-Based Learning

- Scenarios require learners to analyze situations, evaluate options, and justify decisions: This supports the development of critical thinking and responsible decision-making.
- Learners move from passive reception to active participation: They engage in decision-making and produce concrete evidence of learning through actions and outcomes.
- Learner performance can be assessed through tasks, products, or solutions: These are directly aligned with the intended learning objectives, ensuring meaningful assessment.
- Scenarios encourage reflection: Learners reflect on what they have learned, how they have learned it, and why specific decisions were made.
- Scenarios can be designed with different levels of complexity: They can be adapted to suit diverse adult learner profiles, needs, and learning contexts.



By designing learning scenarios grounded in real-life challenges, you help adult learners develop computational thinking as a truly transferable competence. These scenarios empower learners to approach problems systematically, think critically, and apply structured reasoning in a wide range of contexts.

Learning scenarios play a central role in the development of computational thinking, especially in adult education. Instead of working with abstract or isolated concepts, learners engage with complex problems that require reflection, decision-making, and justification.

What kind of learning experience are you designing, one that explains concepts, or one that transforms the way learners think and act?



The learning scenarios are not lesson plans.

A learning situation does not focus on curricular objectives, nor is it a teaching unit.

It is driven by teaching and learning objectives and should prompt reflection on the capabilities and competencies the situation is intended to develop.





Examples of Learning Scenarios

- **Solving a real professional problem:** Learners analyze a common problem from their work context (customer conflict, process failure, low productivity) and propose well-justified solutions.
- **Designing a product or service:** Participants design a resource, protocol, program, or service that responds to a specific need in their professional environment.
- **Decision-making in a complex scenario:** Learners are presented with a case involving incomplete or evolving information that requires prioritization, negotiation, and evidence-based decision-making.
- **Simulation of a professional situation:** Role-play or simulations (meetings, interviews, interventions, negotiations) in which both technical and communication skills are applied.
- **Analysis and improvement of an existing practice:** Learners review a real practice (their own or their organization's), identify areas for improvement, and propose feasible changes.
- **Managing a short project:** Participants plan, implement, and evaluate a limited-scope project while assuming different roles and responsibilities.



Learning Scenario - My personal time management system

This learning scenario is designed to help adult learners develop time management skills by applying the principles of computational thinking. Imagine that your learners are adults with very different life stories: work, family, studies, responsibilities, dreams. They all share one feeling:

“I never have enough time... and I don't know where to start”

Over 3–4 sessions of 60 minutes, you will guide them to transform that feeling into a clear, personal and realistic system.

The key competence to develop:
Time management.

The mission is clear:

To help them analyse, structure and improve the way they use their time by applying the five pillars of Computational Thinking:

Remember!

The Five Pillars of Computational Thinking

1. Decomposition
2. Pattern recognition
3. Abstraction
4. Algorithm design
5. Evaluation and improvement (debugging)





Learning Scenario - My personal time management system

PHASE 1 – Decomposition

Big problems feel overwhelming. So let's break them down. Ask each learner to reflect individually: What blocks make up my day? Work or training, commuting, housework, leisure. Suddenly, the chaos becomes visible.

Result: My personal time map.

PHASE 2 – Pattern Recognition

Now it's time to look for regularities: What activities appear again and again? When do I have more energy? When do I feel exhausted?. Powerful questions to spark insight: Where do I lose the most time? What habits sabotage my organisation?

Result: My personal patterns.

PHASE 3 – Abstraction

From all this information, we extract what is essential. Learners formulate simple rules: "If I'm tired, I don't perform well." "If I don't write things down, I forget them." Then distil everything into 3-4 key criteria, such as: Energy, priorities, real available time.

Result: My decision-making compass.

PHASE 4 – Algorithm Design

Now they design their own "life algorithm": A clear, repeatable sequence, for example: List all fixed commitments. Calculate real free time. Choose 2-3 priorities. It can be a list, a diagram, or step cards. The important thing is that it is their system.

Result: My personal weekly algorithm.

PHASE 5 – Debugging

What happens when life changes the plan? You introduce an unexpected event: A new appointment. A family issue. An urgent task. Now they must ask themselves: Where does my system break? What can I adjust without starting from zero?

Result: stronger, more flexible system.

You are observing their thinking:

Can they analyse their time? and recognise real patterns? There is no single correct model. Every life is different. What truly matters is learning how to think. Ask yourself as a teacher: Where else in my classroom could this same process help my students? Decision-making? Problemsolving? Study planning?



Activity - The job interview

Here's an exciting opportunity to design a learning scenario that transforms a real-world experience into a structured problem-solving activity. Your learners will see how computational thinking skills can make them more confident and effective at a job interview.

In this activity, learners prepare for a job interview applying CT principles, especially focusing on communication, problem-solving, and decision-making skills.

Divide the preparation into clear steps. For example:

- Research the company
- Identify key skills required
- Prepare answers for common questions
- Practice responses



Key CT principles applied:

- decomposition
- pattern recognition
- Algorithmic thinking
- Abstraction

Thinking clearly and acting deliberately turns ordinary asks into opportunities to learn.





Challenges

When you begin designing learning scenarios that integrate computational thinking, you may quickly realise that this involves much more than simply planning activities. Have you ever felt that a well-prepared activity didn't quite work as expected? Designing effective scenarios requires reflection, adaptation, and a learner-centred mindset.

- One challenge you may face is creating scenarios that feel authentic to adult learners. Adults bring rich professional and personal experiences and quickly notice when a situation feels artificial. A practical solution is to start from their real contexts—by listening to their experiences, asking questions, and adapting scenarios to reflect their motivations and challenges.
- Another challenge is transforming abstract ideas into meaningful learning experiences. Concepts like problem decomposition or logical reasoning can feel distant unless they are grounded in reality. A helpful strategy is to embed these concepts in familiar, everyday situations, allowing theory to emerge naturally through practice.
- You may also struggle with managing complexity. Scenarios should be challenging enough to promote deep thinking, but not so complex that learners feel overwhelmed. A good solution is to introduce complexity gradually, limiting information and choices at first and expanding them as learners gain confidence.



“The most powerful learning experiences are not perfect from the beginning; they evolve through listening, reflection, and refinement.”



Challenges

Imagine you are preparing a new module for your CVET students. Your objective is not only that they complete a task, but that they learn to think in a structured, logical, and problem-solving way. You decide to design a learning scenario based on a real professional situation: for example, managing a technical service request, organizing a small project, or solving a production problem.

At first, everything seems clear. You know the content, the tools, and the learning outcomes. But as you begin to design the scenario, questions arise. Ask yourself:

- What is a real problem your students would face in a workplace?
- How can you break this complex situation into smaller, meaningful steps that reflect computational thinking (analysis, decomposition, sequencing, decision-making)?
- Which parts of the process are essential for learning, and which are only contextual?

Now think about your learners. They come with different levels of experience, motivation, and confidence. Some may already be familiar with similar situations, while others may feel lost if the context is too abstract or artificial.

How can you make the scenario feel authentic to their future profession?



Additional Recourses





Conclusion

In conclusion, you have seen that designing learning scenarios is not just about planning activities, but about creating meaningful experiences that truly transform the way adults think, decide, and act.

By grounding learning in real-life contexts, you help abstract concepts like Computational Thinking become concrete, useful, and empowering. When learners recognize their own daily challenges in the scenarios you design, motivation rises, understanding deepens, and learning becomes lasting.

As a trainer, you have the power to turn knowledge into competence. By using realistic problems, encouraging decision-making, fostering reflection, and guiding learners through a process of exploration and practice, you create a space where mistakes become opportunities and thinking becomes active and strategic. Scenario-based learning allows adults to connect what they already know with what they need to learn, strengthening their confidence and their ability to apply new skills beyond the classroom.

Remember: you are not only teaching content or tools. You are helping learners develop thinking habits that can be reused across different contexts and life situations. Every learning scenario you design is an opportunity to make learning practical, relevant, and transformative.