UNIT 3: Relevant topic selection

Structure of the Stage

This stage consists of 9 parts

1. Aim and Objectives
2. Outcomes
3. Introduction
4. Main CT principles applied
5. Why this stage is important
6. Justification
7. Activities
8. Practical resources
9. Conclusion

Aim and Objectives

The aim of this stage is to support you, as an adult educator, in selecting training topics that are not only relevant, but truly meaningful for your learners. But what makes a topic meaningful? In this stage, you will explore how everyday situations and simple problem-solving tasks can become powerful opportunities to embed computational thinking in a natural and engaging way.

Objectives

- Identify training topics that are meaningful for adult learners and linked to real-life situations.
- Engage adult learners in the topic-selection process to increase motivation and ownership.
- Connect everyday activities with CT-related skills such as problem decomposition, sequencing and decision-making.
- Apply this approach across different training contexts (digital skills, employability, social inclusion).
- Design learning activities that naturally involve problem-solving without explicitly "teaching theory"

Outcomes

After implementing this stage, you will notice the following outcomes:

- To increse learner engagement and participation from the very beginning of the course.
- To improve understanding of CT concepts through familiar, everyday examples.
- To reduce anxiety or resistance towards digital or problem-solving tasks.
- To design training topics better aligned with learners' real needs and expectations.
- To design more inclusive learning environments, particularly for older adults and vulnerable learners.

Introduction

Your role will change.
You will no longer be limited to delivering content, but will instead become a designer of learning experiences
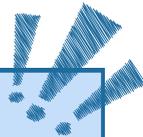
Main CT Principles Applied

This stage applies computational thinking principles in a natural and practical way, without the need for technical terminology. In fact, you may be surprised to discover that your learners already use many of these skills every day, they just do not call them by these names yet!

Think about it:

- **Decomposition**: Breaking down everyday tasks into smaller, manageable steps (e.g. preparing a medical appointment).

- **Sequencing**: Identifying the correct order of actions to complete a task.

- **Pattern recognition**: Noticing repeated steps or common challenges in daily activities.

- **Decision-making**: Choosing between different options based on simple criteria. Reflecting on what went wrong and how to improve a process

Did you know that…?
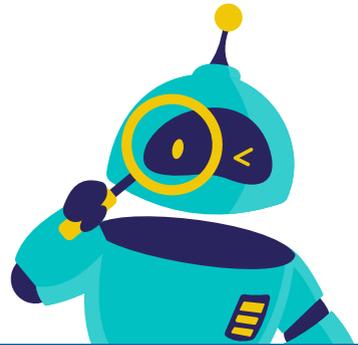
Computational thinking isn't about thinking like a computer. It's about how humans solve problems in ways that computers can help us bring to life.

Have you ever wondered how the apps you use every day "understand" your commands? That's the magic of turning human problem-solving into something operationalizable with computers!

Why this stage is important

This stage is essential because adult learners learn better:

When content
is
relevant

Brings diverse life experiences that can enrich the learning process.

It is presented through concrete examples and familiar language

Did you know that using real-world examples makes complex ideas stick better in our brains?
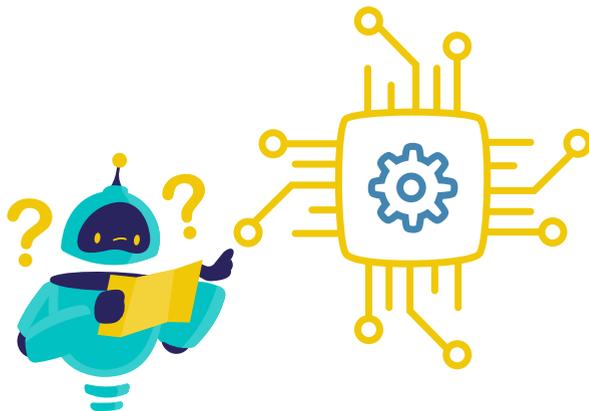
Justification

The content you choose is never neutral, works as a bridge! Have you ever thought about how the topics you pick can connect learners' past experiences with new knowledge?

When you choose content thoughtfully, you're not just teaching, you're creating opportunities to integrate computational thinking in a natural, accessible, and meaningful way.

Starting from real, meaningful situations helps learners immediately see the value of what they're learning. Imagine learning that actually clicks from the very first moment!
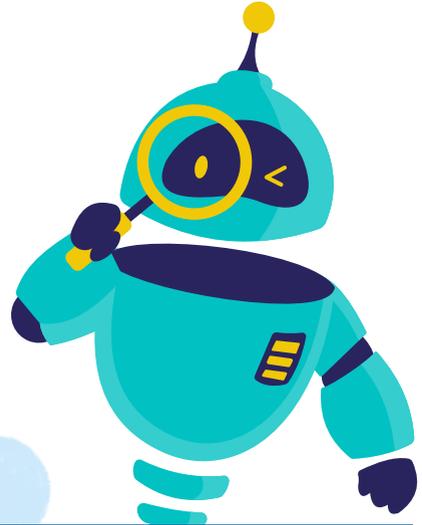
By following a conscious content selection process, you make learning more relevant, more engaging, and far more exciting from the very beginning.

Justification

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.
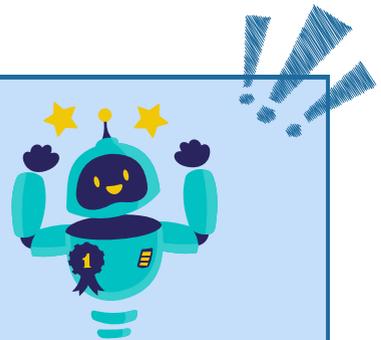
Justification

As a trainer, the way you select content is deeply shaped when computational thinking is used as a pedagogical framework

This approach doesn't just influence your choices, it guides you toward content that is relevant, practical, and contextualised.

Think about it: what if every topic you choose could help learners actively apply skills like problem decomposition, abstraction, pattern recognition, and solution design? That's exactly what thoughtful content selection makes possible!

In adult education, computational thinking isn't just a method,it's a key factor in making learning functional, transformative, and deeply connected to real-life situations. When content has a clear practical purpose, learning becomes useful, transferable, and applicable beyond the classroom.

Have you ever considered how small changes in content choices can completely transform your learners' experience?

Justification

In adult education, introducing computational thinking doesn't automatically mean teaching programming

In many cases, the real goal is to help learners develop a way of thinking that is logical, systematic, and efficient, a mindset that can be applied to countless real-world problems.

This approach opens up a broader range of topics, but it also requires thoughtful content selection—because not every subject easily lends itself to computational thinking principles.

When you incorporate computational thinking, you're not just delivering content, you become a learning experience designer!

From this perspective, the topics you choose should naturally promote:
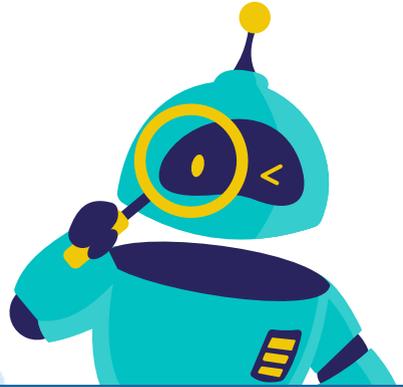- The analysis of real-world problems
- Structured reflection
- Active learner participation
- Transferable learning
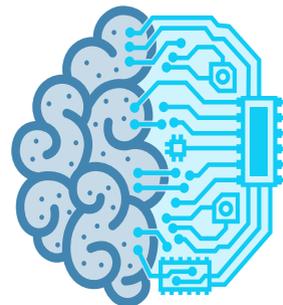
Justification

Did you know that...?

Computational thinking is a gradual, step-by-step process

That's why it's crucial to choose topics that allow you to introduce CT's principles progressively. A single topic can unfold in stages: first identifying the problem, then breaking it down (decomposition), followed by finding patterns and abstracting, and finally designing structured solutions.

Activity 1: Everyday Stories

The objective of this activity is to help you, as an adult educator, to understand how computational thinking can be naturally connected to everyday life and problem-solving, by working with sequences as a practical and accessible way to structure actions, organise processes and improve real-life tasks.

To complete this activity, you will work with a real-life experience and transform it into a structured sequence that reflects CT in action.

- How sequencing helped you organise the story
- How this mirrors real problem-solving situations
- How this approach could be applied with adult learners in different training contexts

- Select the daily life experience (Balancing work, personal commitments, and unexpected events)
- Break it into sequences
- Represent each sequence visually
- Reconstruct the process
- Reflect from the trainer's perspective

Activity 2: Orchestra conductor

This activity is designed to help you, as a trainer, experience first-hand the importance of selecting appropriate content when planning computational thinking as a learning approach.

Select a short video of an orchestra conductor

Make sure the video is clear and easy to follow, as the goal is observation, not musical knowledge

Watch the video carefully focus on: observation and pattern recognition.

The conductor's gestures
How musicians respond to those gestures
When the orchestra changes its behavior

- Problem identification (coordinating many people)
- Decomposition (individual musicians and actions)
- Abstraction (focusing only on relevant signals)
- Structured solutions (clear gestures and rules)

Activity 3: The invisible system

This activity helps you recognise computational thinking hidden in everyday systems by making the invisible visible. It focuses on abstraction, pattern recognition, and system thinking, using familiar situations that adults interact with daily.

Many everyday activities work because there is an underlying system behind them, even if we rarely think about it. This activity invites you to uncover that system.

Choose a familiar system. Select one everyday system you regularly use, such as:

- Booking a medical appointment
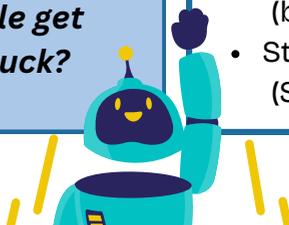- Using public transport
- Borrowing a library book

Spot breakdowns and bottlenecks

Where does the system usually fail?

Where do people get confused or stuck?

CT Principles Applied

- Abstraction
  (Focus on essentials)
- Pattern recognition
  (Spot repetitions)
- Decomposition
  (break into parts)
- Structured problem-solving
 (Step-by-step solutions)

Challenges

Introducing computational thinking to adult learners isn't always as easy as it sounds, but did you know that every challenge is also an opportunity?

One common challenge is turning everyday situations into learning moments for computational thinking. Not every topic fits naturally, but here's the trick: look at familiar situations with fresh eyes and ask, "Where's the problem to solve here?" Sometimes, all it takes is a new perspective.

Another key challenge is finding the right balance between simplicity and depth. Topics should feel close to learners' lives, yet still build strong thinking skills. The solution? Start simple, then go deeper step by step. Small activities can lead to powerful learning when well designed.

And what about moving away from abstract theory? It can be tempting to explain first and practice later. But here's a fun fact: learning sticks better when it starts from real life. So flip the script, begin with everyday experiences, and let theory emerge naturally from practice.
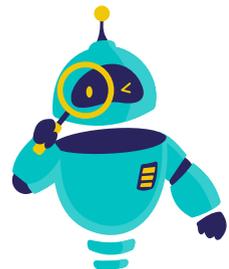
Challenges

Picture this: you're preparing your next lesson and you want to introduce computational thinking, but you catch yourself thinking,

"This topic is too practical… there's no room for CT here."

Now pause for a moment and look at your own daily routine as a teacher. How do you plan a workshop session? How do you organise materials, time, instructions, and assessment? That's your real-life scenario.

Here's the challenge for you:
Where's the problem to solve in your own teaching practice?
Maybe learners often misunderstand instructions. Maybe activities run out of time. Maybe assessment feels messy or repetitive. Instead of seeing these as frustrations, try seeing them as computational thinking opportunities.

Break down one of these situations step by step. What happens first? What decisions do you make? What patterns repeat every week? Then ask yourself:

"How could I redesign this process to make it clearer, faster, or more effective?"

By doing this, you're already practicing problem decomposition, pattern recognition, and structured decision-making—using nothing more than your everyday teaching reality.

And here's the key insight: if you can find CT in your own practice, you'll naturally know how to help your learners find it in theirs. Sometimes, computational thinking starts not in the lesson plan—but in the teacher's mindset.
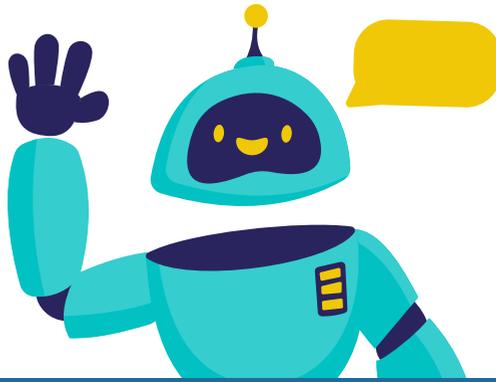
Teaching using computational thinking is not about making things more complex, it's about making learning more meaningful, engaging, and empowering.

Practical resources - Video links

Conclusion

As you reach the end of this stage, one thing should be clear: selecting the right topics is not a minor step, it is the foundation of meaningful learning. When you choose content rooted in real life, you open the door to engagement, confidence, and genuine understanding. You stop "teaching concepts" and start designing experiences that matter

By looking at everyday situations through a computational thinking lens, you empower adult learners to recognise that they already solve complex problems daily. Your role is to make those invisible skills visible, structured, and transferable. Small changes in how you select and frame topics can transform hesitation into curiosity and resistance into motivation

Remember: computational thinking doesn't begin with technology, it begins with relevance. When learning starts from what learners know, live, and care about, it becomes inclusive, practical, and lasting. And when that happens, learning doesn't stay in the classroom; it moves into real life.

Conclusion

You are not just choosing topics.

You are shaping mindsets, building confidence, and creating learning