

Lean Digital Instruction

A practical workshop for TVET educators

12-13 August 2026

Gamification Centre UNIMAS

Trainer: Dr Chuah Kee Man



Day 1 programme



08:00-08:30

Registration



08:30-08:45

Welcome and programme briefing



08:45-10:00

The Lean Digital Mindset in TVET



10:00-10:15

Break



10:15-12:00

Mapping the Digital Value Stream



12:00-13:00

Integrating AI in teaching and e-learning



14:00-16:00

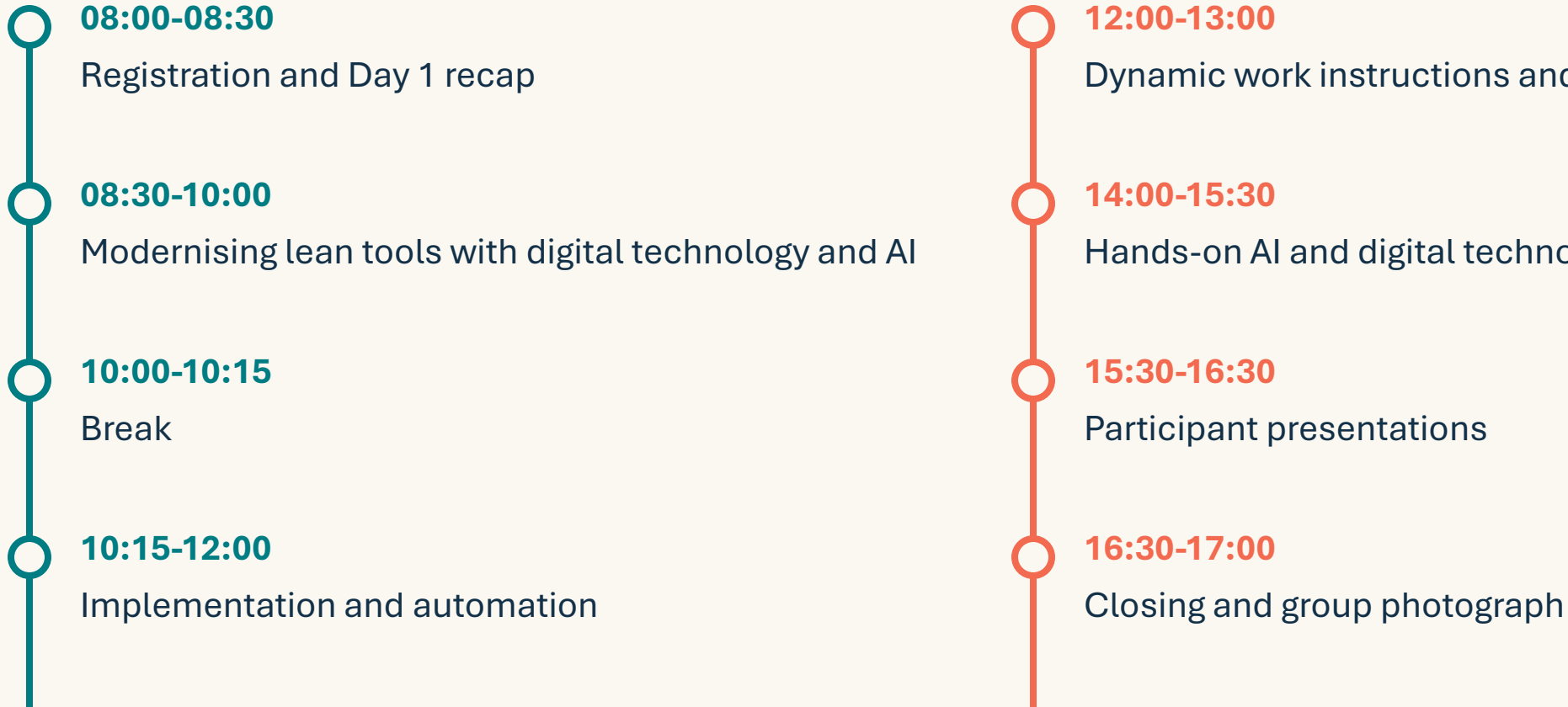
Hands-on AI and digital technology workshop



16:00-17:00

Share-out and real-time feedback

Day 2 programme



What you will be able to do

01

Make learning visible

Make a teaching process visible from learner need to useful feedback.

02

Focus on value-driven outcomes

Distinguish value from waiting, rework, confusion and unnecessary motion.

03

Use AI the smarter way

Apply AI where it strengthens learning while keeping educator judgement central.

04

Improve your current workflow

Create one improved workflow, instruction or feedback loop ready to test.

How we will work...

1

Observe

Start with a real learner need

2

Map

Make the current flow visible

3

Improve

Remove one source of friction

4

Test

Use feedback to decide next

Day 1

Embracing The Flow Before Choosing the Tools

Lean mindset · value-stream mapping · AI-assisted design

What steals time without helping learning?

Think of the last lesson you prepared.

- Where did you wait, search or repeat work?
- Where did learners hesitate or ask the same question?
- What did you create that nobody used?



Write it in one sentence.

Value starts with the learner's purpose

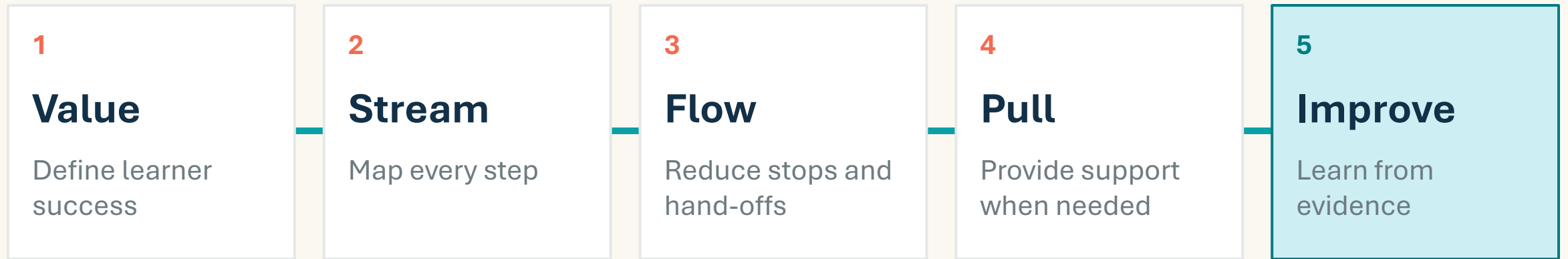
A step adds value when it helps the learner do something they need, at the right level of quality and time.

Technology is useful only when it improves that path.

ASK

- What must the learner be able to do?
- What evidence will show success?
- What is the simplest path to that evidence?

Five lean principles, translated



Lean is a way to expose problems early and improve the system continuously.

Busy is not the same as flowing

RESOURCE BUSY

- Everyone creates materials at full capacity
- Large batches wait for review
- Work is handed off with missing context
- Learner feedback arrives after the course ends

LEARNER FLOW

- The next useful step is always clear
- Small batches are tested early
- Quality checks happen close to the work
- Feedback changes the next iteration

Eight wastes hide in digital teaching

1 Defects

Wrong links, unclear criteria, inaccurate content

3 Waiting

Approval queues, slow feedback, locked access

5 Transport

Files moved across systems without adding value

7 Motion

Searching, reformatting and repeated log-ins

2 Overproduction

Materials made before a learner need is known

4 Unused talent

Learner and staff expertise left untapped

6 Inventory

Unreviewed videos, duplicate files, stale quizzes

8 Overprocessing

Decorating, copying or reporting twice

A quick waste walk

- 1 — Choose one recent digital teaching task.
- 2 — List the steps exactly as they happened.
- 3 — Mark one value step and two sources of waste.
- 4 — Share the cost of the waste: time, quality or learner effort.

LEAVE WITH

**One problem worth
mapping**

A value stream is the whole learning journey



Map information, action, waiting and feedback from the learner's need to demonstrated performance.

Map one journey with a clear start and finish

TOO BROAD

Improve our e-learning

A useful boundary names:

- ✓ Trigger
- ✓ Final learner outcome
- ✓ One learner group
- ✓ One module or task

MAPPABLE

From assignment release to useful feedback

If the map cannot fit on one page, narrow the boundary.

Capture the current state, not the intended one

01

Action

What someone actually does

02

Information

What must be known or transferred

03

Wait

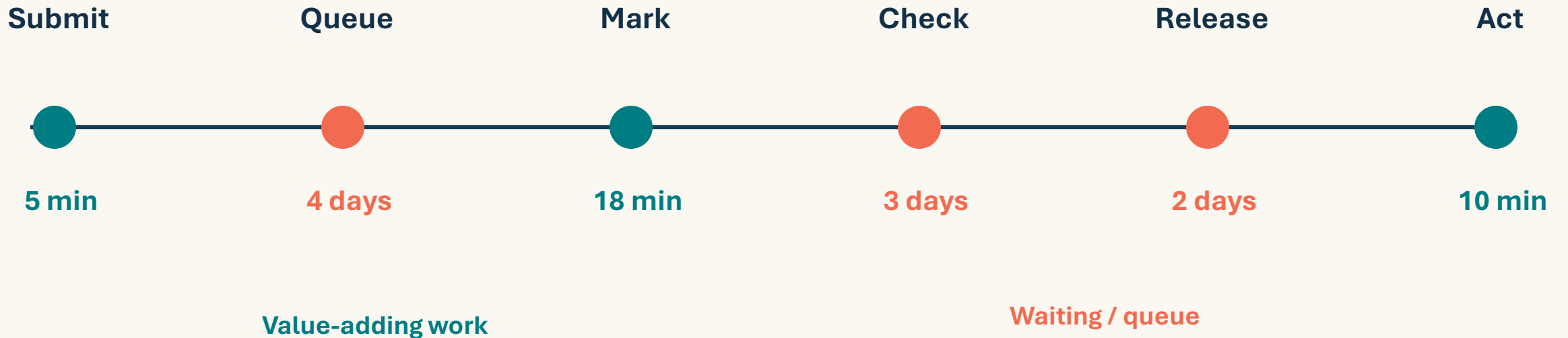
Where work queues or pauses

04

Check

Where quality is confirmed

Example: nine days to useful feedback



The learner experiences the **full nine days**, not the 33 minutes of work.

Measure friction with a few honest signals

01

Lead time

Start to useful learner outcome

02

Touch time

Time spent actively adding value

03

First-pass quality

Completed correctly without rework

04

Demand

How often help or correction is needed

Choose the signal that would change your next decision.

Design the future state around one constraint

01

Remove

Delete a step that adds no learner value

02

Combine

Bring related actions into one flow

03

Move

Place information at the point of need

04

Automate

Only after the work is stable and clear

Map and redesign one learner journey

- 1 — Set the start, finish and learner group.
- 2 — Map actions, information, waits and checks.
- 3 — Mark the constraint and choose one measure.
- 4 — Sketch a future state with one fewer source of friction.

LEAVE WITH

**Current and future-state
maps**

Evidence should lead the tool choice

Before choosing a platform, answer:

- Which learner outcome are we protecting?
- Where is the constraint?
- What will change in the flow?
- What evidence will tell us it worked?



**TOOL
LATER**

**Problem first.
Evidence next.**

Build the AI toolset around the teaching job



Start with the learner action. Add AI only where it improves preparation, practice or feedback.

Match AI tools to six teaching jobs

01

Plan and explain

ChatGPT · Gemini · Microsoft Copilot

03

Differentiate

MagicSchool AI · Brisk Teaching · Gemini

05

Create visuals

Canva AI · Adobe Express · ChatGPT Images

02

Ground in sources

Gemini Notebook · ChatGPT file analysis

04

Create practice

ChatGPT · Gemini · Microsoft Copilot

06

Draft feedback

Brisk Teaching · ChatGPT · Gemini

Choose AI support that changes the next step

COACH

ChatGPT Study Mode

Guided questions and hints help learners reason through a task

GROUND

Gemini Notebook

Study guides, audio and questions stay connected to supplied sources

CREATE

Gemini

Draft quizzes, flashcards and study guides from a topic or file

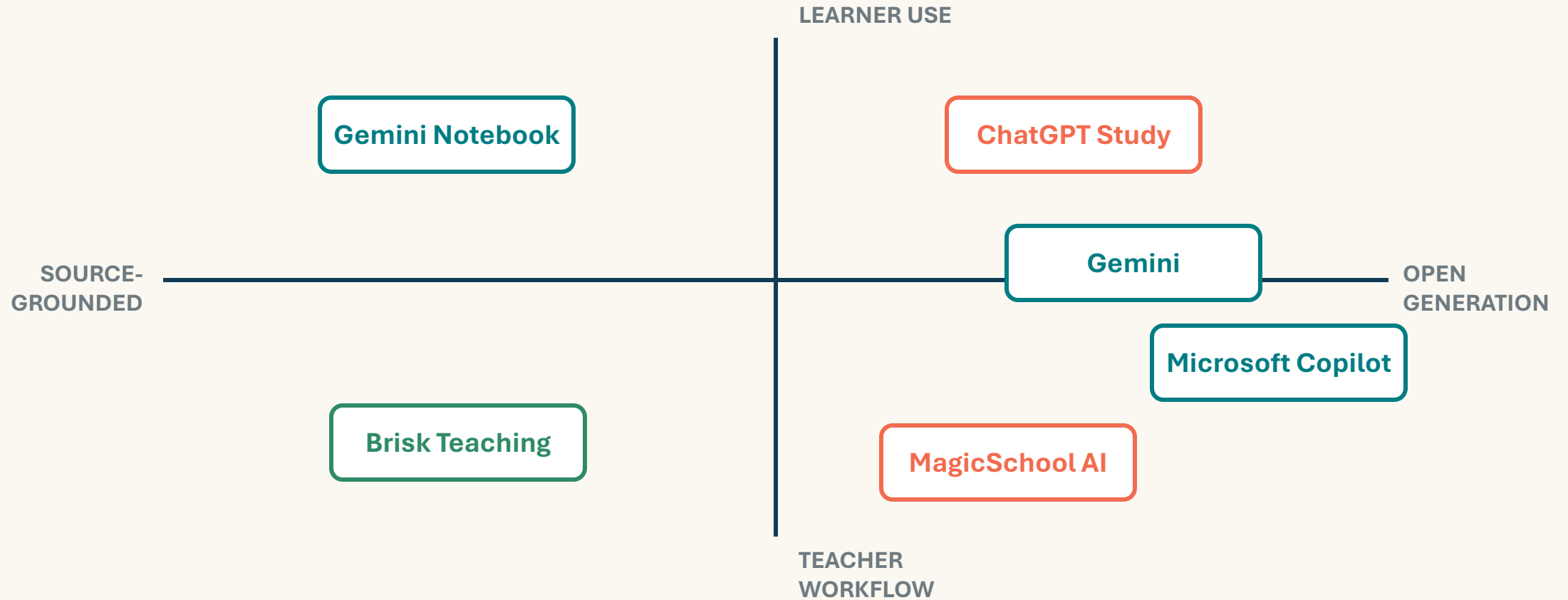
Use AI to create a useful learning move, not another place for learners to click.

Make learner thinking visible in time to act



Capture one useful signal, interpret it quickly and act before the learning moment passes.

Choose AI tools by grounding and teaching role



Placement is illustrative: the prompt, sources and workflow determine how each tool behaves.

One concept, several ways to access it



Design a clear core experience, then offer equivalent ways to perceive, navigate and respond.

Use AI to draft alternatives, then check them

-
- ✓ **Adapt the language** ChatGPT, Gemini or MagicSchool can draft level and language variants
 - ✓ **Offer source-based audio** Gemini Notebook can turn supplied material into an Audio Overview
 - ✓ **Create visual alternatives** Canva AI or Adobe Express can draft supporting visuals and short media
 - ✓ **Keep access reliable** Verify captions and alt text; retain printable and low-bandwidth versions
-

Never let an AI-generated alternative become the only route to the learning.

Make every AI tool pass six checks

01 Learning value

Which learner action becomes better?

03 Data and privacy

What enters the model, and is that permitted?

05 Review

Who checks accuracy, bias and alignment?

02 Access

Can the whole group use it reliably?

04 Grounding

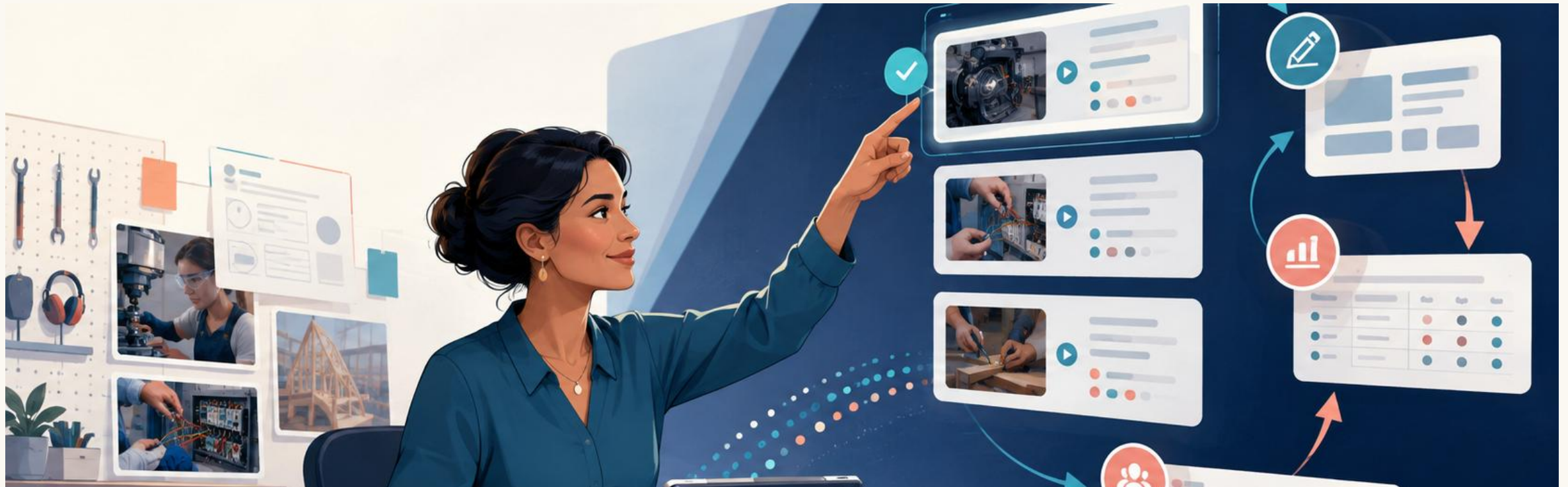
Which sources and criteria constrain the output?

06 Exit

Can the final resource be exported and retained?

If the value is unclear, the sources are weak or access is unequal, redesign first.

AI can shorten the loop while educators decide



Use AI to generate options, then verify, adapt and decide as an educator.

Use AI for useful iteration at manageable risk

01

Draft

Examples, explanations, question variants

02

Transform

Reading level, format, language, modality

03

Analyse

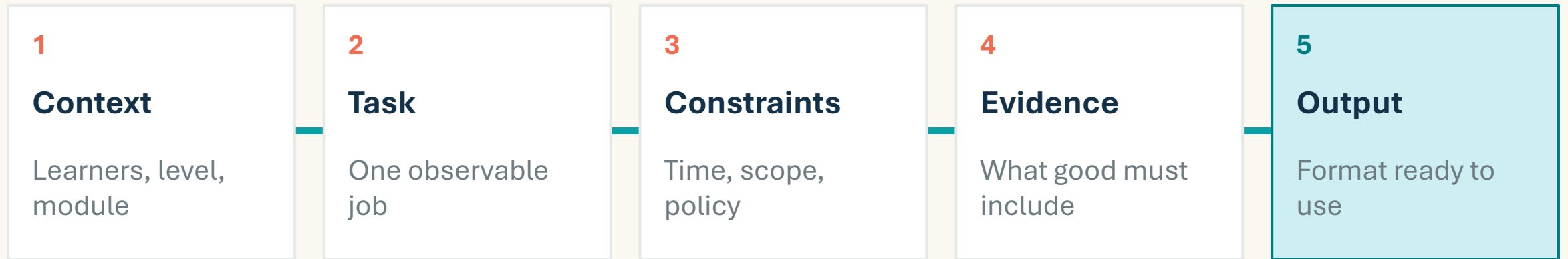
Themes in feedback or common misconceptions

04

Coach

Practice dialogue with clear boundaries

A lean prompt makes the work testable



Then review: accurate? inclusive? aligned? safe to use?

Better prompts expose the quality criteria

VAGUE

- Create a quiz about workplace safety.

TESTABLE

- Create six scenario-based questions for first-year electrical students.
- Each item tests one named safety decision.
- Include answer, rationale and common misconception.
- Flag anything that requires local policy verification.

Prompting improves when the teaching decision is already clear.

Every AI output passes a human quality gate

Accuracy	Alignment	Fairness	Privacy	Transparency
Check facts, calculations and local practice	Match outcomes, task and assessment evidence	Look for stereotypes, exclusions and uneven difficulty	Remove personal or confidential information	Tell learners when and how AI shaped the work

If you cannot verify it, do not publish it.

Build one AI-assisted teaching asset

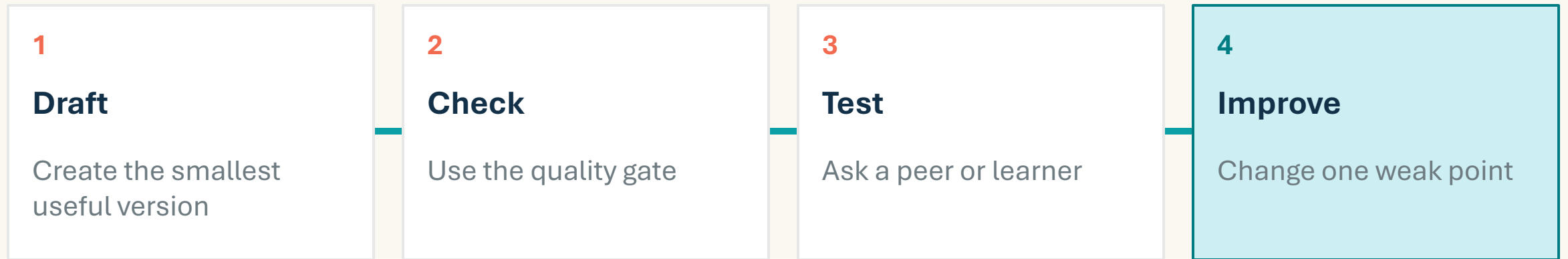
55 MIN

- 1 — Choose a high-friction step from your map.
- 2 — Write a prompt with visible quality criteria.
- 3 — Generate a first draft and test it against the quality gate.
- 4 — Revise once using evidence, not preference alone.

LEAVE WITH

A reviewed first version

Treat the first output as an experiment



Do not optimise a draft that has not been tested with a real user.

Share the learning, not a product demo

1 minute

1 minute

1 minute



The learner problem and
current friction



What you built and what
changed



Evidence, risk and next test

Audience feedback: one strength · one question · one next experiment

Close Day 1 with three decisions

01

Keep

Which part of the current process already adds clear learner value?

02

Change

Which source of friction will you remove or reduce first?

03

Test

What evidence will you collect before deciding to scale?

Day 2

Turning the Better Flow Into Standard Practice

Digital lean tools · automation · dynamic work instructions · feedback

What changed in your thinking overnight?

01

Value

What matters most to the learner?

02

Constraint

Where does the flow currently stall?

03

Experiment

What is the smallest useful change?

Pair-share, then post one sentence.

Keep the lean logic, add digital capability

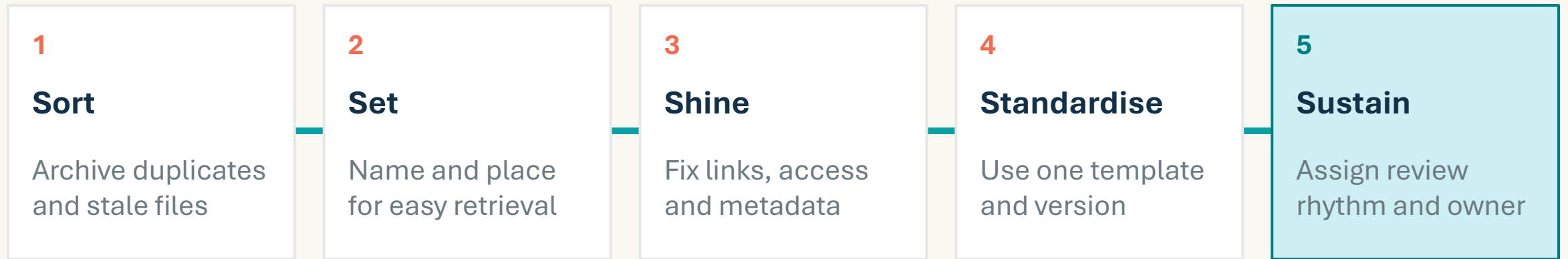
LEAN LOGIC

- Make work visible
- Limit work in progress
- Build quality into the process
- Improve from frontline evidence

DIGITAL CAPABILITY

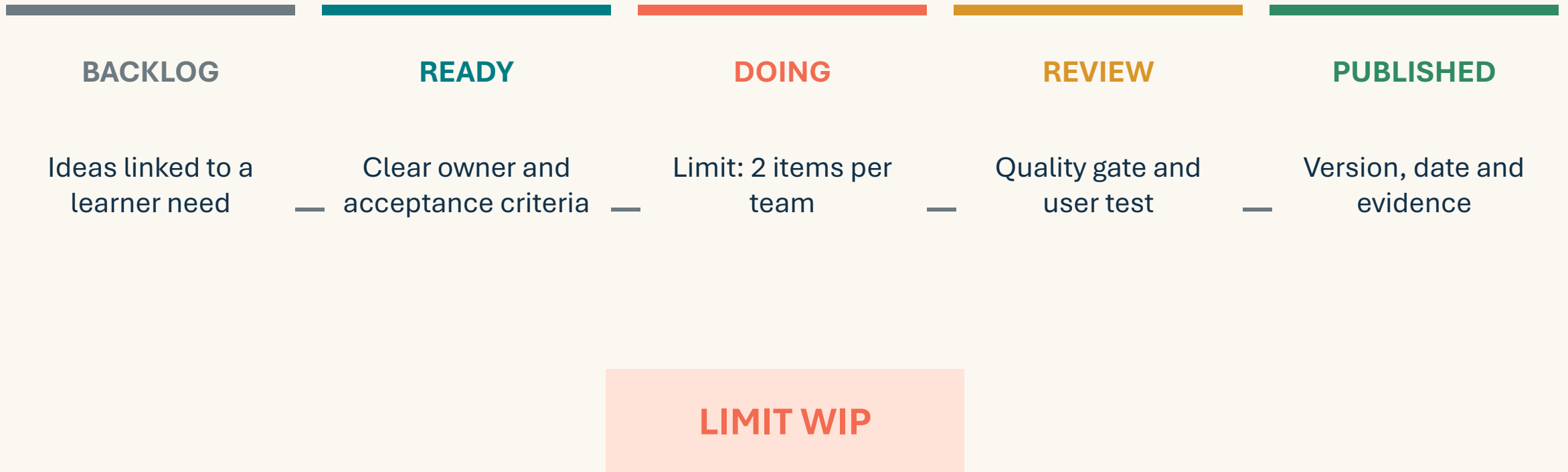
- Shared, searchable information
- Live status and simple alerts
- Embedded checks and version control
- Fast feedback and traceable changes

Apply 5S to digital teaching assets



A clean digital workspace reduces searching, duplication and accidental use of old content.

Kanban exposes work and limits overload



Standard work is the best-known method today

It should be:

- ✓ Clear enough for another person to follow
- ✓ Specific about quality and decision points
- ✓ Easy to update when evidence improves
- ✓ Owned by the people who do the work

STANDARD
≠
PERMANENT

**Improve the method, then update
the standard.**

Design mistakes out of the learning flow

01

Prevent

Required field before submission

02

Guide

Example beside a complex response

03

Detect

Immediate check for a common misconception

04

Recover

Clear route when a learner is stuck

Upgrade one lean tool digitally

25 MIN

- 1 — Choose 5S, Kanban, standard work or error-proofing.
- 2 — Name the current friction and intended user.
- 3 — Add only one digital capability that improves the flow.
- 4 — Define how you will know the upgrade helped.

LEAVE WITH

**A tool upgrade with a
measure**

Use AI to draft; keep judgement human



Let AI generate options and transform material. The educator verifies, adapts and decides.

Three practical AI workflows for educators

CHATGPT

Add context

Draft · analyse ·
transform

Teacher verifies and
adapts

GEMINI NOTEBOOK

Add trusted sources

Guide · audio · quiz

Teacher curates and
shares

EDUCATION AI

MagicSchool or Brisk

Differentiate · feedback

Teacher approves and
exports

Use approved accounts, remove unnecessary personal data and review before release.

Automating waste makes waste travel faster

Before automation

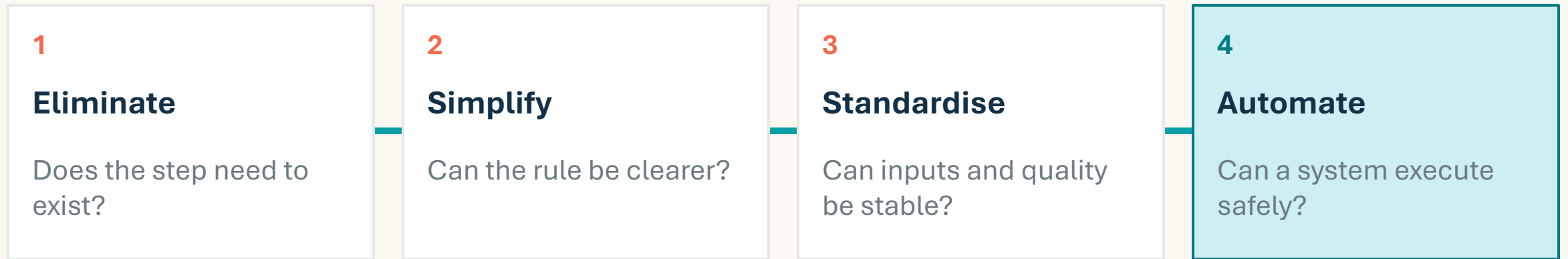
- Remove unnecessary steps
- Clarify the rule
- Stabilise the inputs
- Name the exception path

Then automate

- ✓ Repeated
- ✓ Rule-based
- ✓ Low-judgement
- ✓ Visible and reversible

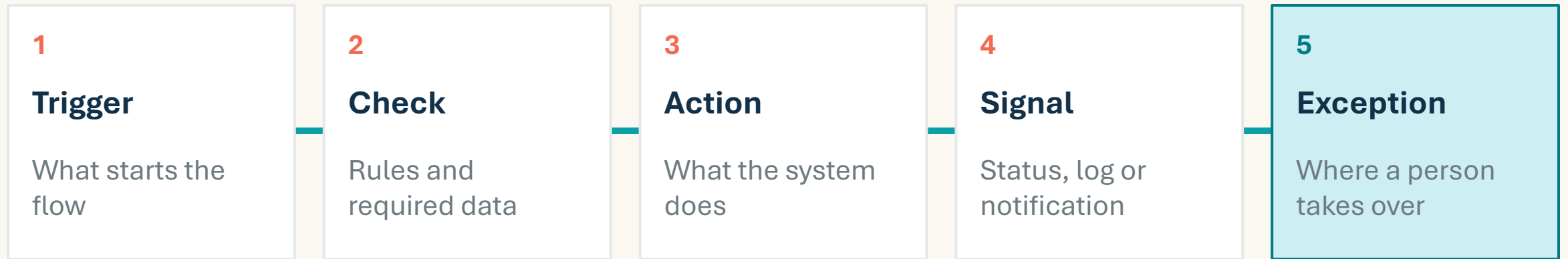
Keep complex educational judgement with a person.

Climb the automation decision ladder



Stop at the lowest rung that solves the problem.

A safe automation has five visible parts



If the exception is invisible, the automation is incomplete.

Example: release feedback in smaller batches

BEFORE

- All submissions wait for the deadline
- Marking starts as one large batch
- Moderation happens after all marking
- Learners receive feedback nine days later

IMPROVED FLOW

- System checks file and required fields
- Submissions route to small review batches
- Common feedback is drafted, then verified
- Exceptions go to the lecturer; feedback releases daily

Illustrative pattern. Adapt to institutional assessment policy.

Guardrails make automation trustworthy

01	02	03	04	05
Owner	Data	Approval	Log	Fallback
A named person is accountable	Only necessary, permitted data enters	Judgement points remain human	Actions and changes are traceable	Failure has a safe manual route

Design for the day the automation fails, not only the day it works.

Design a small, safe automation

- 1 — Choose one repeated, rule-based step.
- 2 — Draw trigger, check, action, signal and exception.
- 3 — Add the owner, data boundary and fallback.
- 4 — Test the workflow with one normal and one failure case.

LEAVE WITH

An automation blueprint

Dynamic instructions guide the next action



Show the right step, media and check for the learner's current task and context.

A useful instruction contains seven parts

1	Purpose	What success looks like	2	Prerequisites	Tools, access and safety
3	One action	A clear step with a strong verb	4	Media	Image or clip where it helps
5	Check	Visible quality or safety point	6	Exception	What to do when reality differs
7	Version	Owner, date and change			

Choose AI by the learning support required

TOOL	BEST FIT	LEAN CHECK
 ChatGPT Study Mode	Guided dialogue	Use when questions and hints should develop learner reasoning
 Gemini Notebook	Source-grounded study	Use when support must stay close to supplied course material
 Gemini	Quizzes and study guides	Use when the educator needs a quick practice draft to review
 Microsoft Copilot Teach	Teacher resource creation	Use when Copilot is supported in the institutional environment

Choose the smallest AI support that improves the next learner action.

Write for action, not for policy prose

HARD TO USE

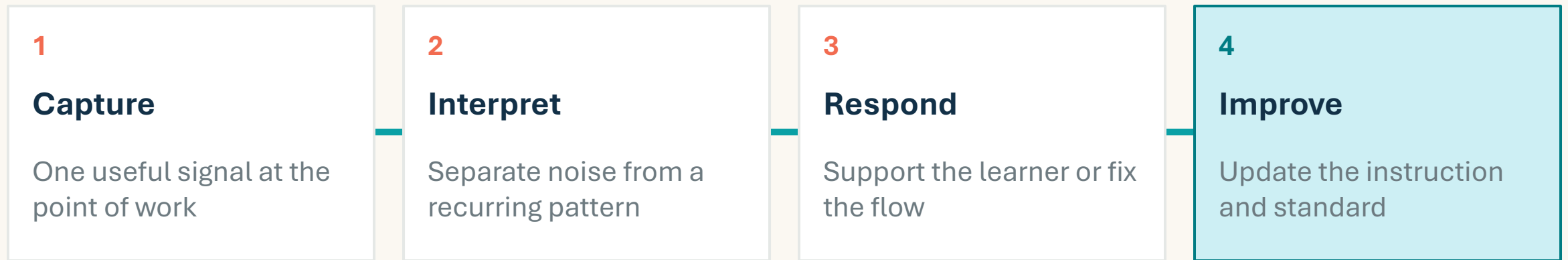
- Ensure all preparation is complete before you begin.
- Long paragraph with several actions and no visible check.

SCANNABLE

- 1. Isolate the power supply.
- 2. Confirm the indicator is off.
- 3. Photograph the setup.
- Checkpoint: ask the instructor if the indicator remains on.

One step = one action · one check · one clear next move

Real-time feedback closes the improvement loop



Feedback is real-time when it can still change the learner's next action.

A one-minute pulse can guide the next move

01

Clarity

I know what to do next.

02

Confidence

I can do the next step safely.

03

Friction

The main thing slowing me is...

04

Support

I need help with...

Build the improved flow

- 1 — Choose your future-state map or automation blueprint.
- 2 — Create a minimum useful workflow or dynamic instruction.
- 3 — Embed one quality check and one feedback signal.
- 4 — Test with a peer, then revise the weakest step.

LEAVE WITH

**A testable participant
prototype**

Review the prototype through four lenses

01

Value

Does it help the learner reach a real outcome?

02

Flow

Which delay, hand-off or confusion is reduced?

03

Quality

Are criteria, checks and exceptions visible?

04

Evidence

What signal will guide the next iteration?

Present the problem, change and evidence

Problem



What learner friction did you observe?

Change



What did you remove, simplify or build?

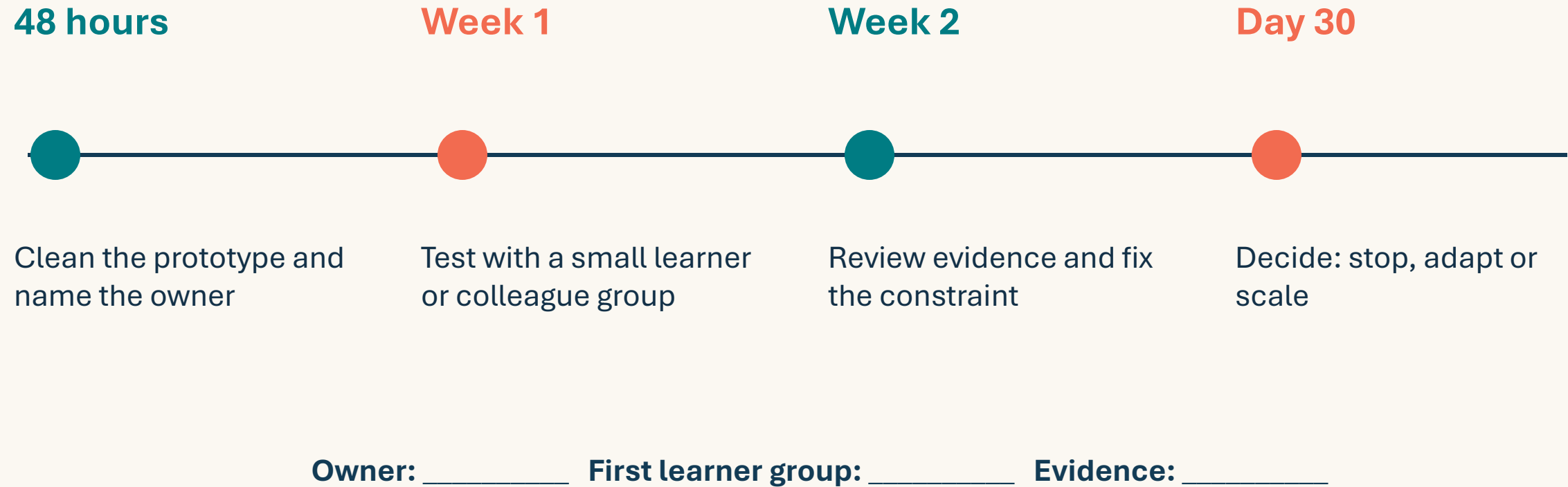
Evidence



What will you measure and what risk remains?

3 MINUTES PER TEAM

Turn the prototype into a 30-day experiment



Build less. Learn faster. Improve continuously.

Start with learner value, make the work visible and use evidence to decide what comes next.