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WORKSHOP

# Designing Learning as a Cross-Functional Activity System

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135-minute design workshop

# Workshop agenda

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Phase 1	0–15 min	Framing the Shared Object
Phase 2	15–30 min	Learning Science Core
Phase 3	30–50 min	Role Mapping
Phase 4	50–75 min	Cross-Role Diagnosis
—	75–85 min	Break
Phase 5	85–110 min	Collaborative Redesign
Phase 6	110–125 min	Cross-Team Critique
Phase 7	125–135 min	Collaboration Charter & Closing

GROUND RULE

# Before we begin

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***“We’re diagnosing the system, not individuals.  
Misalignment is structural, not personal.  
Our goal is coherence, not blame.”***

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Return to this norm whenever tension rises during diagnosis.

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# Framing the Shared Object

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We begin by surfacing what we already believe learning is — then replacing those beliefs with an operational definition

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# Writing prompt 1A

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***Define learning in one sentence.***

Write without looking at the glossary. 90 seconds. No discussion.

# Writing prompt 1B

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*How do you know when learning has happened?*

One sentence. Write, don't type. 90 seconds.

## THE OPERATIONAL DEFINITION

***“Learning is durable change  
in knowledge structures  
that enables future participation  
and performance.”***

## THREE WORDS DOING THE WORK

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### **Durable**

Not fleeting. Visible months later, not minutes after.

### **Knowledge structures**

Organised schemas in long-term memory, not isolated facts.

### **Enables future**

The test is what learners can do later, not during the session.

# Participation ≠ learning

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Most definitions of learning describe activity. Activity is what we hope causes learning.

## Activity completion

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- ✗ Watched the video
- ✗ Completed the quiz
- ✗ Attended the session
- ✗ Submitted the reflection

## Durable capability

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- ✓ Recalls and applies the concept 6 months later
- ✓ Transfers knowledge to a novel situation
- ✓ Performs competently under real conditions
- ✓ Judgment improves over time



# Writing prompt 1C

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- 1 What must learners be able to do 6–12 months after your module, in real conditions?
- 2 What cognitive change must occur for that to be possible?

3 minutes individual writing. Share two or three responses before moving on.

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# Learning Science Core

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Three commitments that every design decision in this room must be accountable to.

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# Close your notes.

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*Without looking, write the three learning science commitments from the pre-work. Two minutes.*

Silence is intentional. Do not help your neighbour.

# The three commitments

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- 1 **Memory precedes complex thinking**
- 2 **Retrieval strengthens memory**
- 3 **Cognitive load must be managed**

How many did you get? These three commitments are the arbitration language for every design decision today.

# Memory precedes complex thinking

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You cannot analyse, evaluate or create with knowledge you cannot recall. Higher-order cognitive operations require accessible knowledge structures in long-term memory.

*Design implication: Sequence instruction so foundational knowledge is encoded and retrievable before learners are asked to apply it in complex ways.*

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# Retrieval strengthens memory

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Actively recalling information from memory strengthens the neural pathways that make future recall easier. Re-reading or re-watching does not produce the same effect.

*Design implication: Build retrieval opportunities into the design with specific timing, mechanisms and spacing. Retrieval is not a test event — it is an instructional strategy.*

2

# Cognitive load must be managed

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Working memory is limited. Extraneous cognitive load — effort not contributing to schema formation — reduces the capacity available for learning. Complexity and novelty must be introduced deliberately, not simultaneously.

*Design implication: Remove presentation elements that do not serve the learning objective. Manage the number of new concepts introduced at once. Use worked examples before independent problem-solving.*

3

# Apply the commitments to your work

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Form role-based groups. Discuss the three questions below. 10 minutes.

1. Where is retrieval structured in your typical design work? Name a specific artefact or moment.
2. Where might cognitive load be excessive? Name a specific module, assessment or platform.
3. Where is thinking hidden? Where do learners perform activity without their reasoning being visible?



# Diagnosis in practice

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Before we diagnose your work, let's practice on this case.

MODULE OUTCOME

**Evaluate ethical frameworks**

ASSESSMENT

**Multiple-choice quiz on definitions**

*What is the misalignment? Write your answer before the next slide.*

# The diagnosis

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**OUTCOME DEMANDS** Evaluation — apply a schema to a novel ethical situation

**ASSESSMENT TESTS** Recognition memory — recall of labels and definitions

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**GAP** Schema application requires accessible knowledge AND practiced judgment. The assessment only tests the first condition.

**COMMITMENT VIOLATED** Memory precedes complex thinking: the assessment never asks learners to think.

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# Role Mapping

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Each role mediates learning differently. Making those differences concrete is the first step toward genuine coordination

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# Work within your role group

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Use the prompts in your workbook. 15 minutes.

**Curriculum Design**

Alignment, sequencing, transfer

**Learning / Experience Design**

Cognitive operations, retrieval, visible reasoning

**Multimedia Design**

Cognitive function, load, schema support

**Learning Technology**

Affordances, constraints, analytics

# Pair with a different role

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- Step 1**      Describe a real design decision you made recently.
- Step 2**      Your partner identifies which learning science commitment it serves — or violates.
- Step 3**      Switch. 2 minutes per person.

## The question shifts.

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From: “What does my role do?”

**To: “Where is the system failing the learner?”**

Mixed-role team assignments will now be revealed.

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# Cross-Role Diagnosis

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Apply learning science as a shared diagnostic lens to real design artefacts you brought to this room

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# Reminder before we begin

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***“We’re diagnosing the system, not individuals.  
Misalignment is structural, not personal.  
Our goal is coherence, not blame.”***

Point to specific elements in the artefact. Not general impressions.



# Identify

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5 minutes. Point to specific elements in the artefact.

1. What must learners remember?
2. Where is retrieval structured?
3. Where is thinking visible?
4. Where is cognitive load unnecessary?

# Diagnose misalignment

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20 minutes. Work through both questions.

5

**Where do role decisions contradict each other?**

*List at least two contradictions.*

6

**Which contradictions most impair learning?**

*Rank by impact on the learner. This is your redesign focus.*

# Break

10 minutes

*When you return: identify the one misalignment most blocking learning. That is your redesign focus.*

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# Collaborative Redesign

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Translate the diagnosis into a coherent, learning-science-grounded redesign. Seven sections. One capability object. All roles contributing

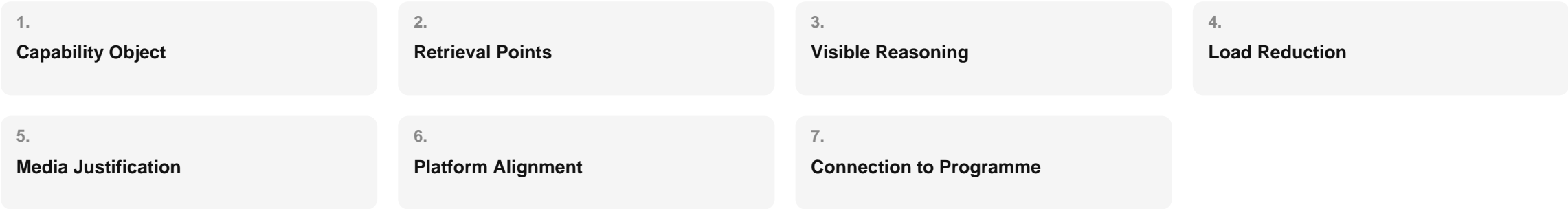
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# Seven sections. One coherent object.

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Use the template in your workbook. 25 minutes. Coherent > complete.



# Before the gallery walk

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Complete the Learning Science Justification section. If you cannot answer these, the redesign is not yet grounded in science.

- What memory structures are strengthened by this redesign?
- Where is retrieval embedded, and at what intervals?
- What cognitive load decisions were made? What was added, what was removed, and why?

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# Cross-Team Critique

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Structured feedback grounded in learning science. Three notes per redesign. No general impressions.

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# Three notes. Every reviewer. Every redesign.

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Review at least two redesigns. 15 minutes.



## Strength

What aligns well with learning science? Name the commitment it serves.



## Tension

Where might the design impair learning? Name the commitment it violates.



## Clarification question

What needs more explanation to evaluate the design?



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# Collaboration Charter

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Convert individual insight into concrete, accountable collective commitment.

7

# Write before you share

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3 minutes. Individual writing first. No discussion until everyone has written.

- One decision I will no longer make alone
- One role I need earlier in the design process
- One learning science principle I will use in future discussions
- One process change we will implement in the next design cycle

# In 4 weeks.

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We meet for 30 minutes. Each role shares three things.

1

One decision you made differently since the workshop

2

One place where collaboration improved

3

One remaining misalignment that needs addressing

*Calendar invitations go out today. This is not optional.*

# No notes. Write three things.

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- How you now define learning
- One way your role mediates cognitive change
- One collaboration commitment you are taking forward

2 minutes. Silent. These are for you, not for the group.

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## YOU LEAVE WITH

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- A redesigned learning experience artefact
- A shared operational definition of learning
- Practical learning science commitments
- A cross-role collaboration charter
- A 30-day follow-up plan