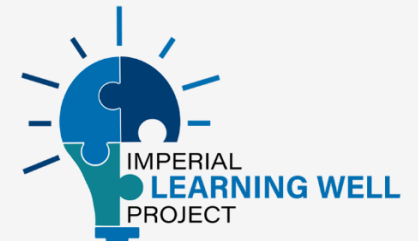# IMPERIAL

Negotiating an effective learning environment

Dr Luke McCrone
Centre for Higher Education Research and Scholarship

13/02/2025

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Pre-session Check-in Exercise

Imperial students -

To support you to get the most from the Learning Well Programme, please take a moment to complete this short exercise about your current understanding and expectations of this session:

- Your responses will be submitted anonymously.
- There are no right or wrong answers – feel free to share your thoughts.
- This activity should take no more than 2-3mins.

Learning Well Programme: Pre-session Check-in Exercise (THURSDAY)

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Session aims

1. Critically engage with literature and research on learning spaces, including research conducted here at Imperial

2. Reflect on your learning space usage in the context of this research and literature

3. Develop a strategy for learning space usage that will enhance your well-being and learning

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Context matters: Imperial

- Urban campuses in Central London
    - 29 academic departments
    - 9 campuses
    - Expanding student numbers

- STEMMB (Science, Technology, Mathematics, Medicine and Business)

- Research-intensive

- Founded as a cultural and educational hub as part of the Albertropolis vision

- Learning and Teaching strategy launched in 2017

Photograph of Imperial College London main entrance

IMPERIAL

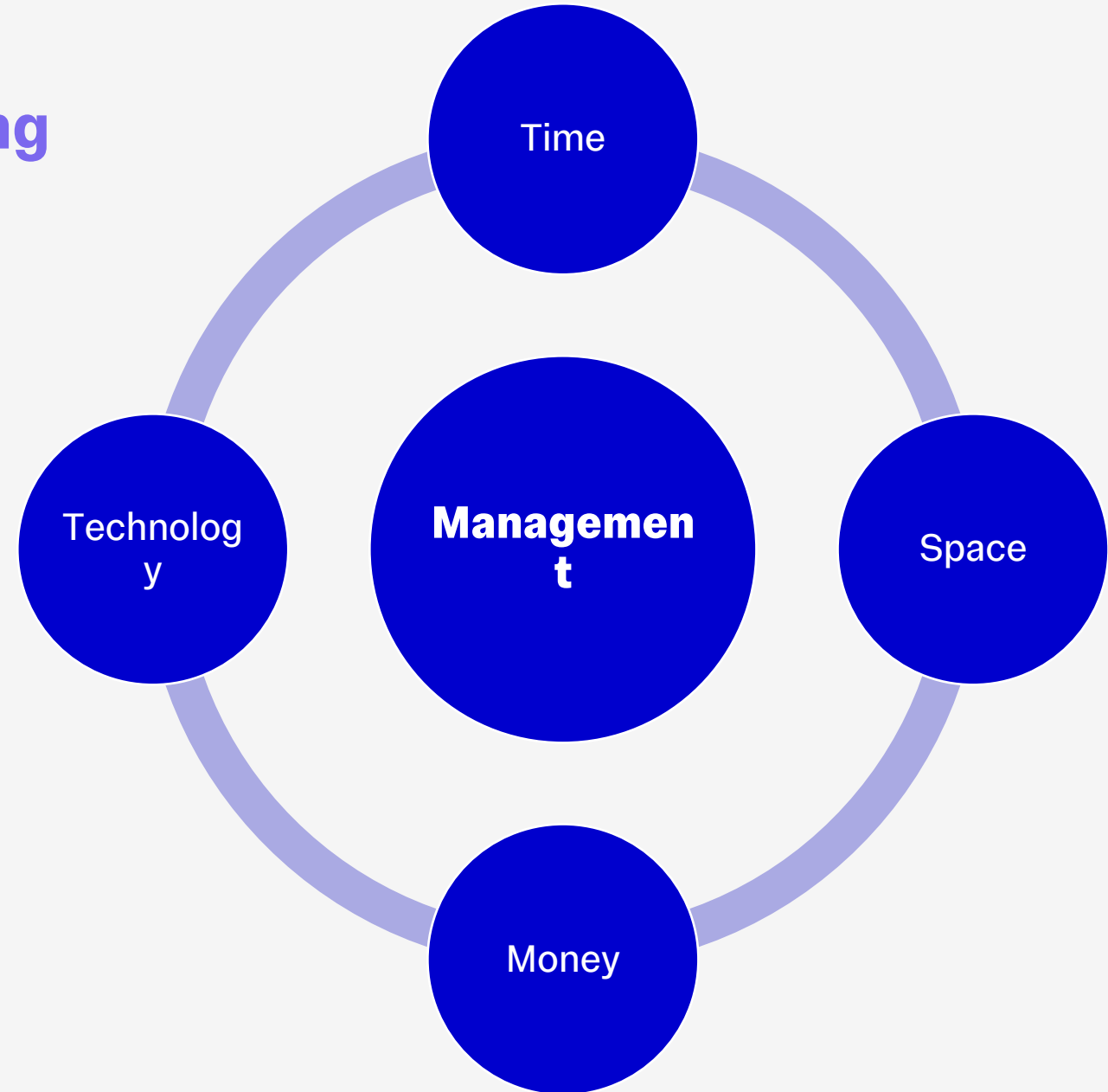## Context matters: Changes to learning

- COVID-19 pandemic accelerated increases in hybrid and remote learning and working

- Shift in the role and expectations of:
  - Student
  - Teacher

- Disruptive trends:
  - Micro credentials
  - Upskilling and lifelong learning
  - Growth of AI

- 'Digital divide' accelerated by transition to online learning in HE (Soomro *et al.*, 2020)
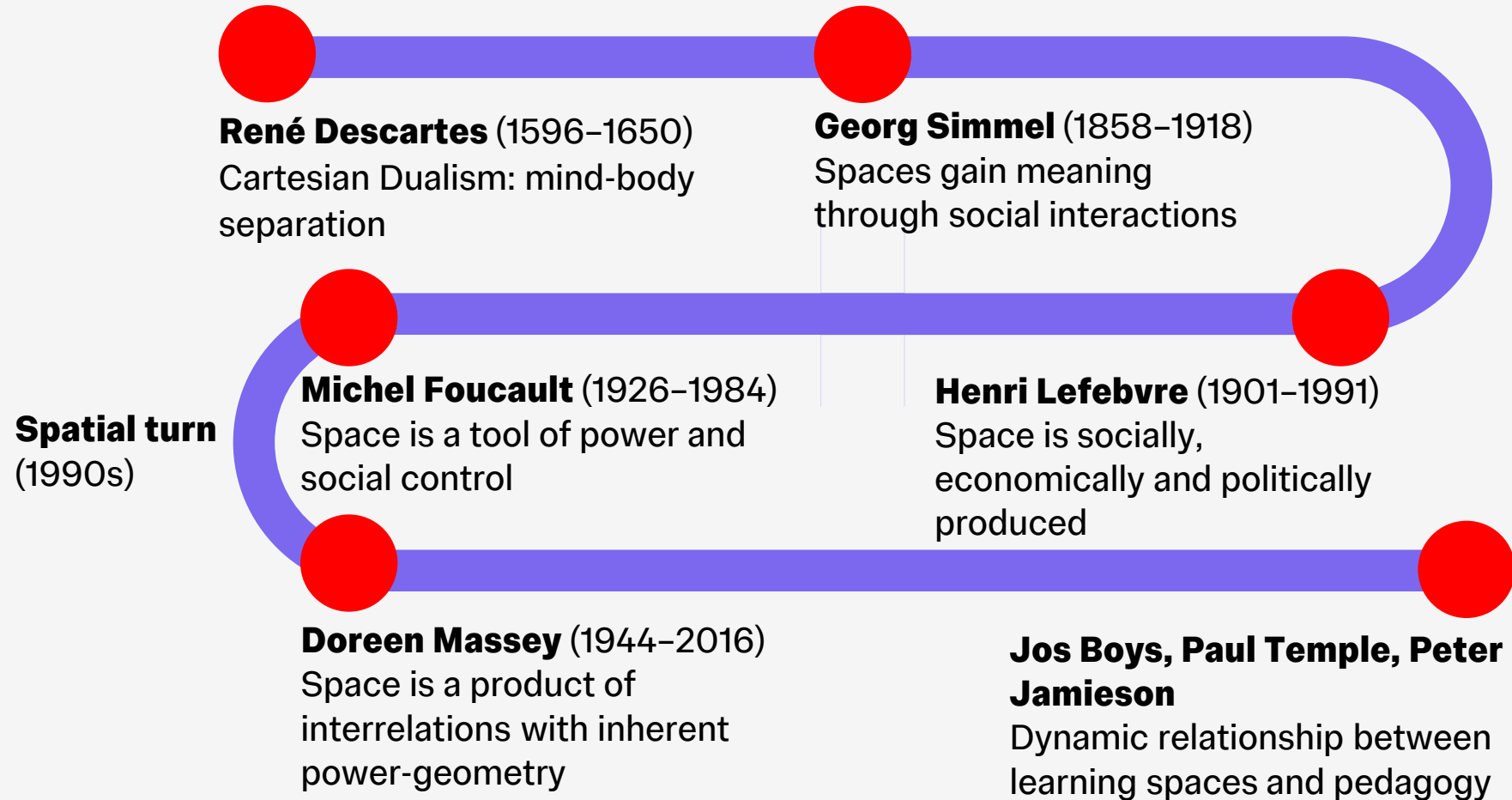
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Why space? Managing your learning

- Students increasingly expected to:
  - Manage space use
  - Negotiate an effective learning environment

- **Human agency** (Bandura, 2001): *A student's ability to take ownership of their learning, make choices, and actively shape their educational experiences*

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Why space? Socio-spatial theories

René Descartes (1596–1650)
Cartesian Dualism: mind-body separation

Georg Simmel (1858–1918)
Spaces gain meaning through social interactions

Spatial turn (1990s)

Michel Foucault (1926–1984)
Space is a tool of power and social control

Henri Lefebvre (1901–1991)
Space is socially, economically and politically produced

Doreen Massey (1944–2016)
Space is a product of interrelations with inherent power-geometry

Jos Boys, Paul Temple, Peter Jamieson
Dynamic relationship between learning spaces and pedagogy

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Menti: Which spaces help you recharge?

Menti code: **7759 6312**

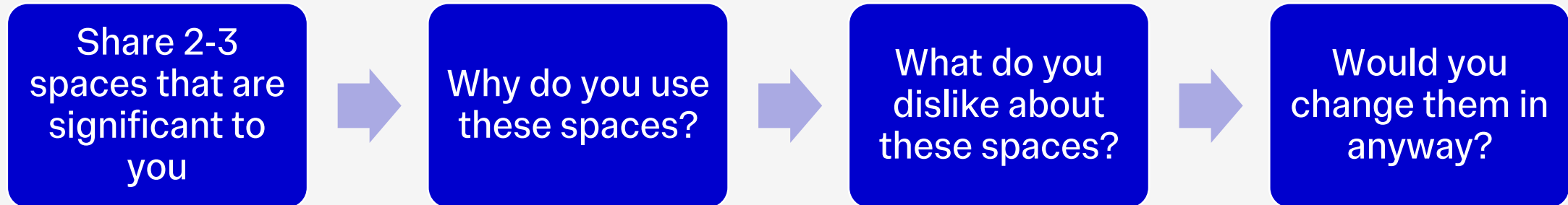# IMPERIAL

Menti: Which spaces do you feel most control in?

Menti code: **7759 6312**

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Breakout activity 1: Reflecting on your space use

- In small groups:

| Share 2-3 spaces that are significant to you | → | Why do you use these spaces? | → | What do you dislike about these spaces? | → | Would you change them in anyway? |

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Reflecting on your space use

- Key points from Oakley (2014, p. 72):

  1. Remembering material can often be associated with cues of a physical place (e.g., a lecture theatre or library space)

  2. Recalling material outside your usual study place helps strengthen your grasp of recall by viewing it from a different perspective

  3. Thinking about material independent of cues from one place can allow you to more effectively recall it when in the exam room

"A good teacher will leave you educated. But a great teacher will leave you curious. Well, Barbara Oakley is a great teacher. Not only does she have a mind for numbers, she has a way with words, and she makes every one of them count."
—Mike Rowe, creator and host of Discovery Channel's *Dirty Jobs* and CEO of mikeroweWORKS

a (MIND for NUMBERS) =

A Companion to COURSERA®'s popular online course *Learning How to Learn*

HOW TO EXCEL AT MATH AND SCIENCE
(Even If You Flunked Algebra)

BARBARA OAKLEY, Ph.D.

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Menti: What features do you look for in your ideal learning space?

Menti code: **7759 6312**
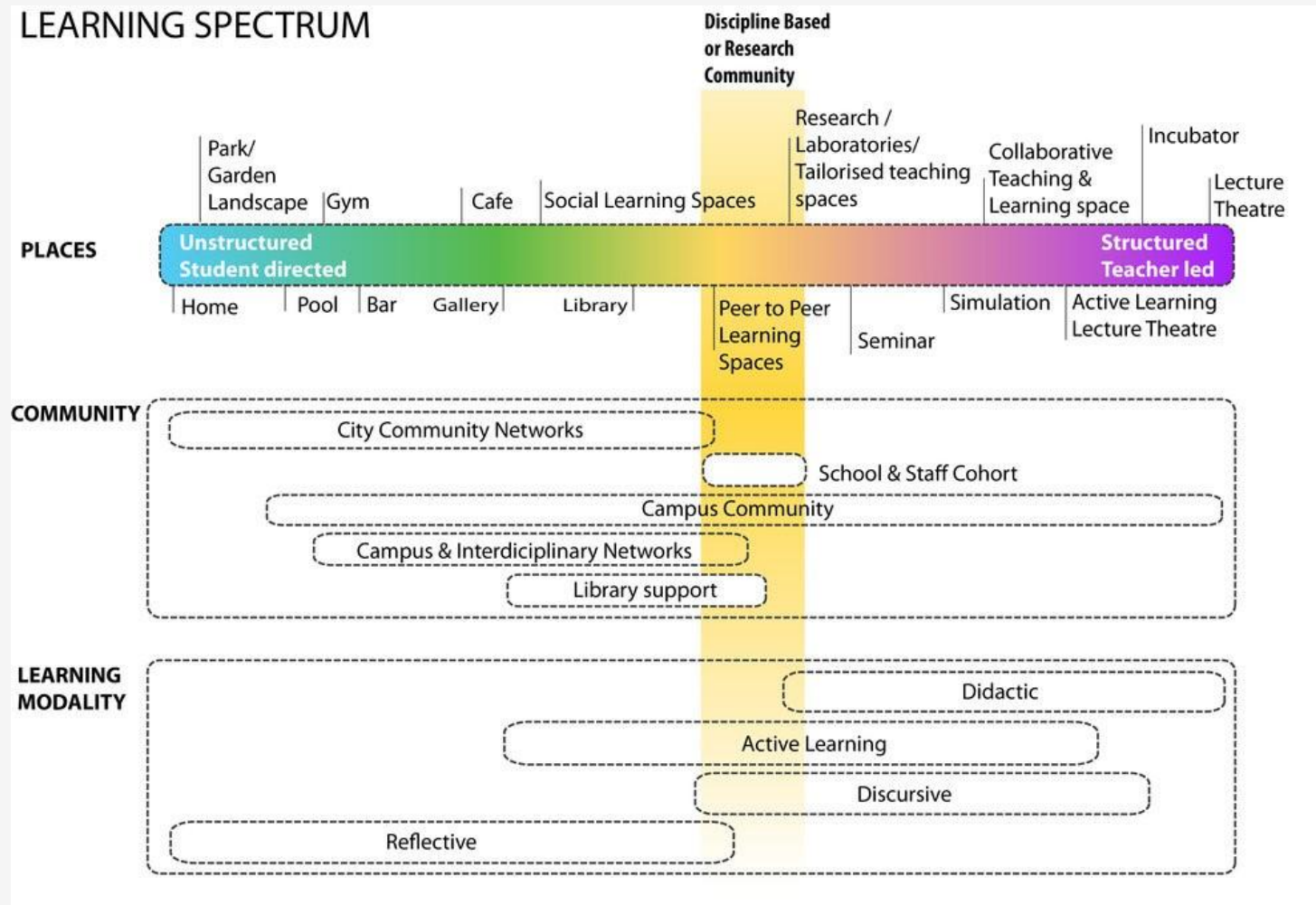
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Menti: Which spaces do you not use that you might want to?

Menti code: **7759 6312**

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Potential learning spaces

LEARNING SPECTRUM

Taken from Radcliffe et al., 2008, p. 13

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Break

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Imperial research

- **PhD research (McCrone, 2021)**
  - Researched student transitions between lecture theatres and informal spaces
  - Spaces in Physics and Chemical Engineering
- **Imperial Belonging, Engaging and Connecting project**
  - Factors influencing all students' belonging at Imperial, including spaces
  - Over 5 years of data
- **Imperial space transformations and evaluations**
  - Lecture theatres e.g., Blackett Lecture Theatre 2 (Howson & Kingsbury, 2024)
  - Informal spaces e.g., Sherfield Level 3 Student Space
  - Transitional spaces e.g., StudentShapers projects (Streule *et al.*, 2022)

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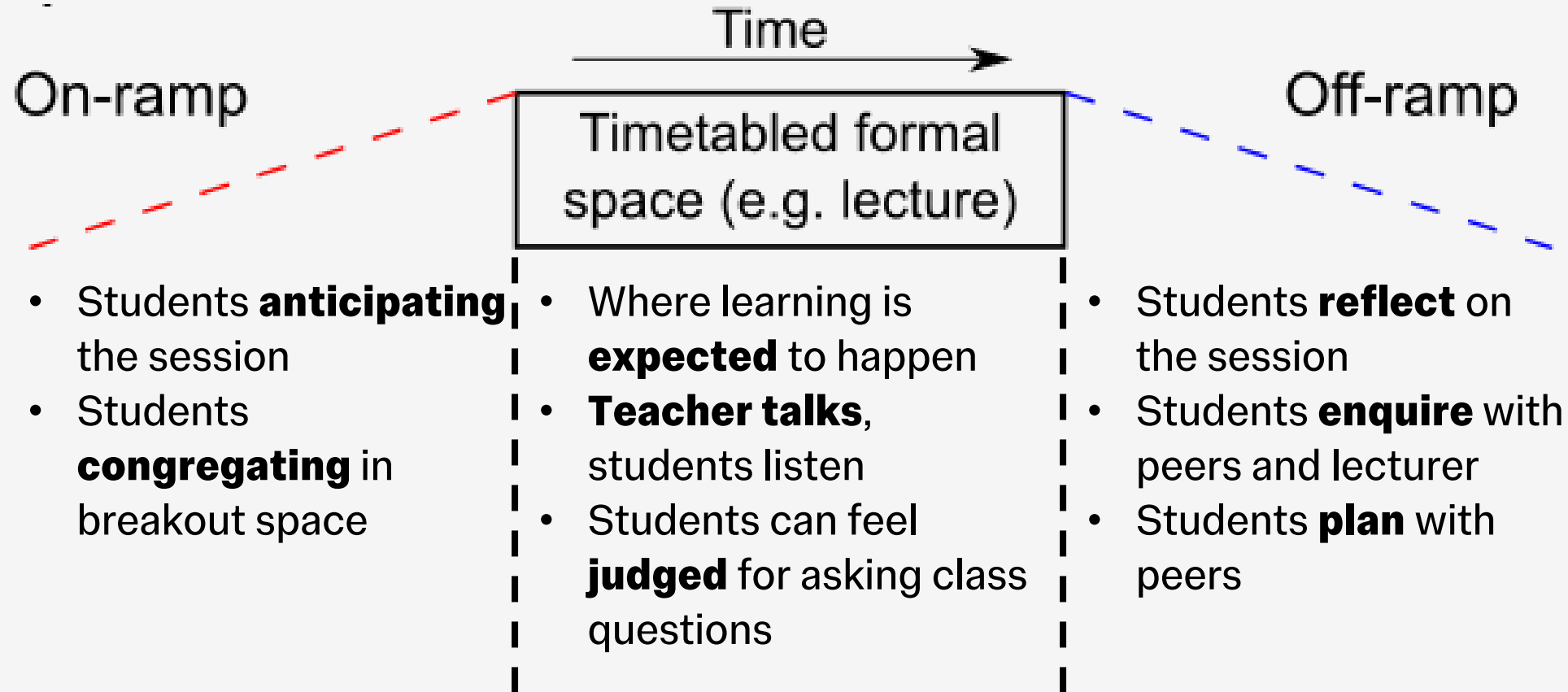## Studying transition: Where does learning really happen?

- **Traditional learning paradigm**:
  - Teacher-centred model of education
  - Learning happens mostly in the classroom
  - Learning happens through passive consumption of information

Photographs of ACEX Lecture Theatre 1 (left) and ACEX breakout space (right)

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Studying transition: Where does learning really happen?

Time →

On-ramp

Timetabled formal space (e.g. lecture)

Off-ramp

- Students **anticipating** the session
- Students **congregating** in breakout space

- Where learning is **expected** to happen
- **Teacher talks**, students listen
- Students can feel **judged** for asking class questions

- Students **reflect** on the session
- Students **enquire** with peers and lecturer
- Students **plan** with peers

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## Studying transition: Becoming an active learner

- **Active learning paradigm**:
  - Learner-centred model of education
  - Learning happens across multiple spaces and times
  - Students actively construct knowledge through discussion, collaboration and problem-solving

Photograph of transformed Blackett Lecture Theatre 2)

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Process of learning: Liminal spaces
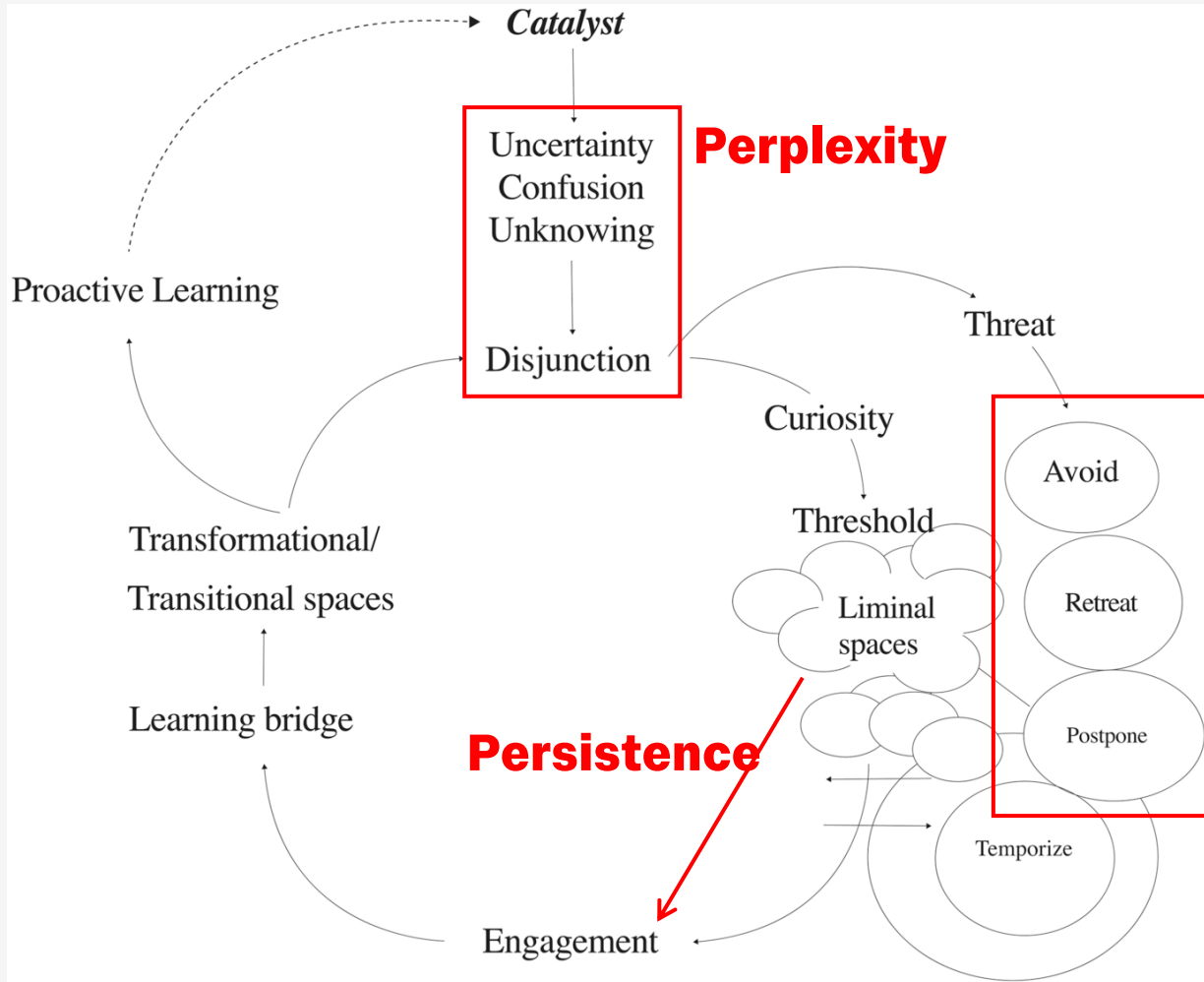
Taken from Ball & Savin-Baden, 2022

- **Liminality** refers to the transitional state between not understanding and achieving mastery, where students navigate uncertainty and transformation in their knowledge and identity

- *"In a fixed mindset, mistakes are seen as failures. In a **growth mindset**, mistakes are seen as a natural part of learning."* (Dweck, 2006, p. 6)

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Menti: Where do you go when you don't understand something?


Menti code: **7759 6312**

(Re)designing for learning: Student partnership

- **Blackett transitional space**:
  - 'Transition, not destination'
  - 'By the user, for the user'
  - Flexible and functional furniture
  - Mixture of writing surfaces

Photographs of Blackett foyer (left) and transformed Blackett transitional space (right) – see Streule et al., 2022
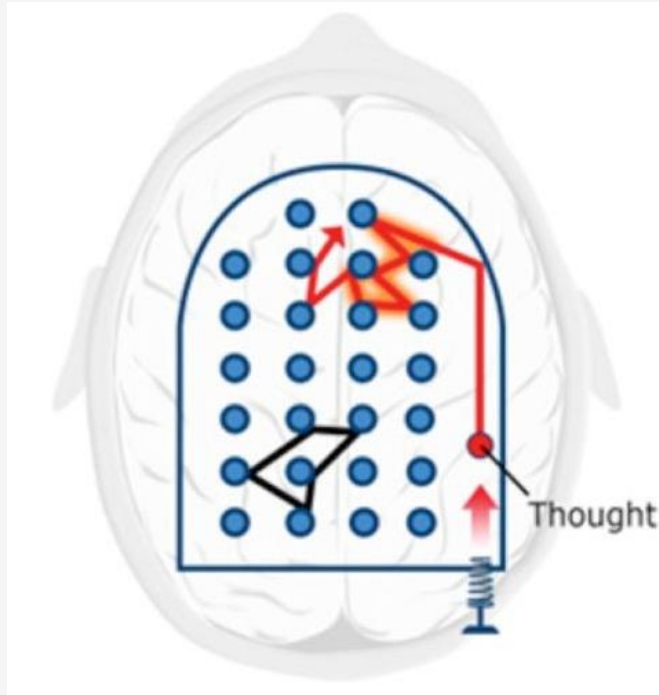
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(Re)designing for learning: Student partnership
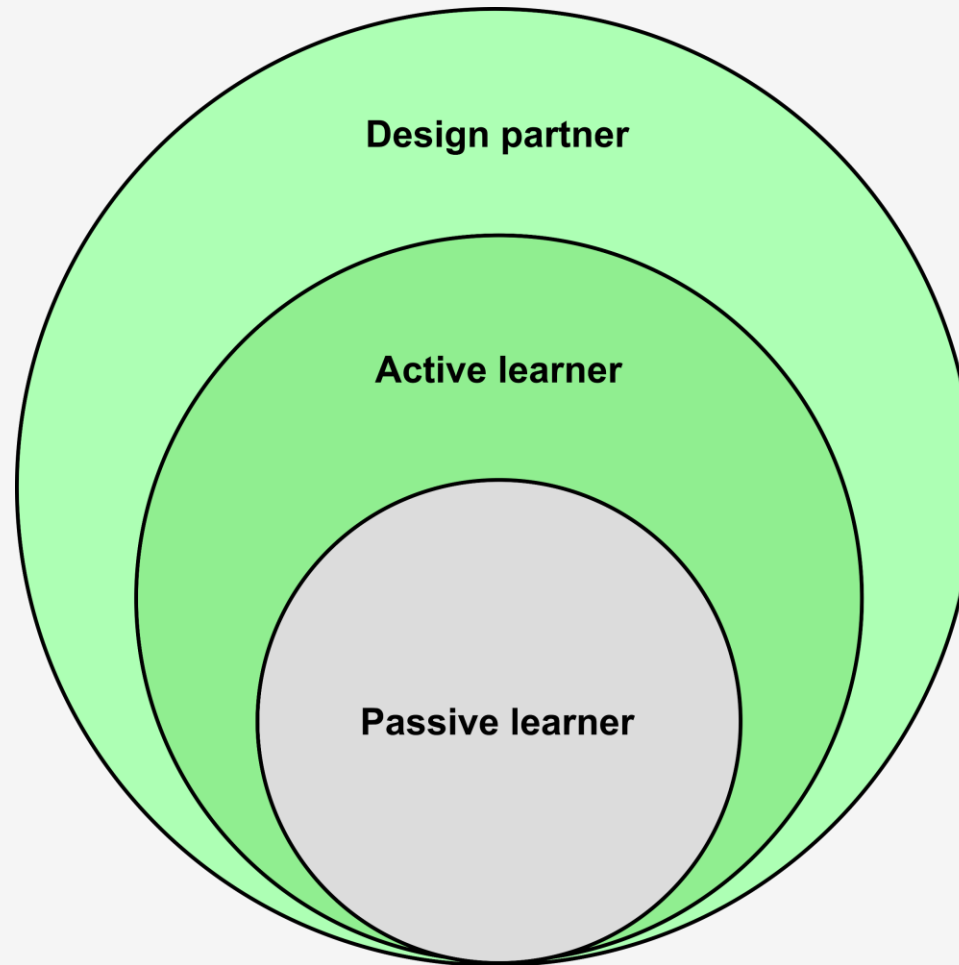
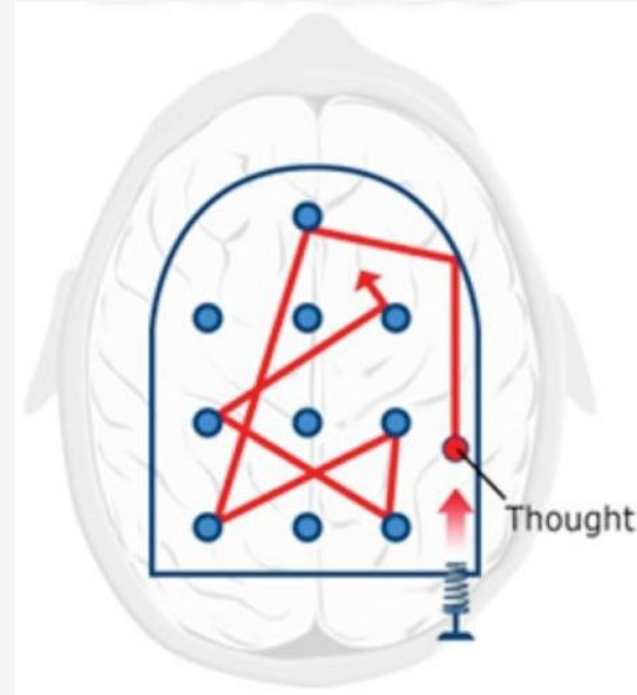*Potential student roles adapted from Martens et al. (2019)*

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Focused and diffuse modes of thinking (Oakley, 2014)

Focused thinking
- Highly attentive state
- Prefrontal cortex
- Pinball bumpers closely spaced with predictable neural pathways

Diffuse thinking
- Highly relaxed state
- Default mode network
- Pinball bumpers spread further apart

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Using physical space to separate mental space

- "*The results suggest that **home spatial layout** has a significant impact on occupant well-being during WFH since home-life distractions and noises due to the lack of a personal workspace are likely to prevent productive work*." (Pang *et al.*, 2021, p. 2)

- "*The findings demonstrate that the nature of an everyday and ecologically valid experience, **the clothing worn**, influences cognition broadly, impacting the processing style that changes how objects, people, and events are construed*." (Slepian *et al.*, 2015, p. 663)
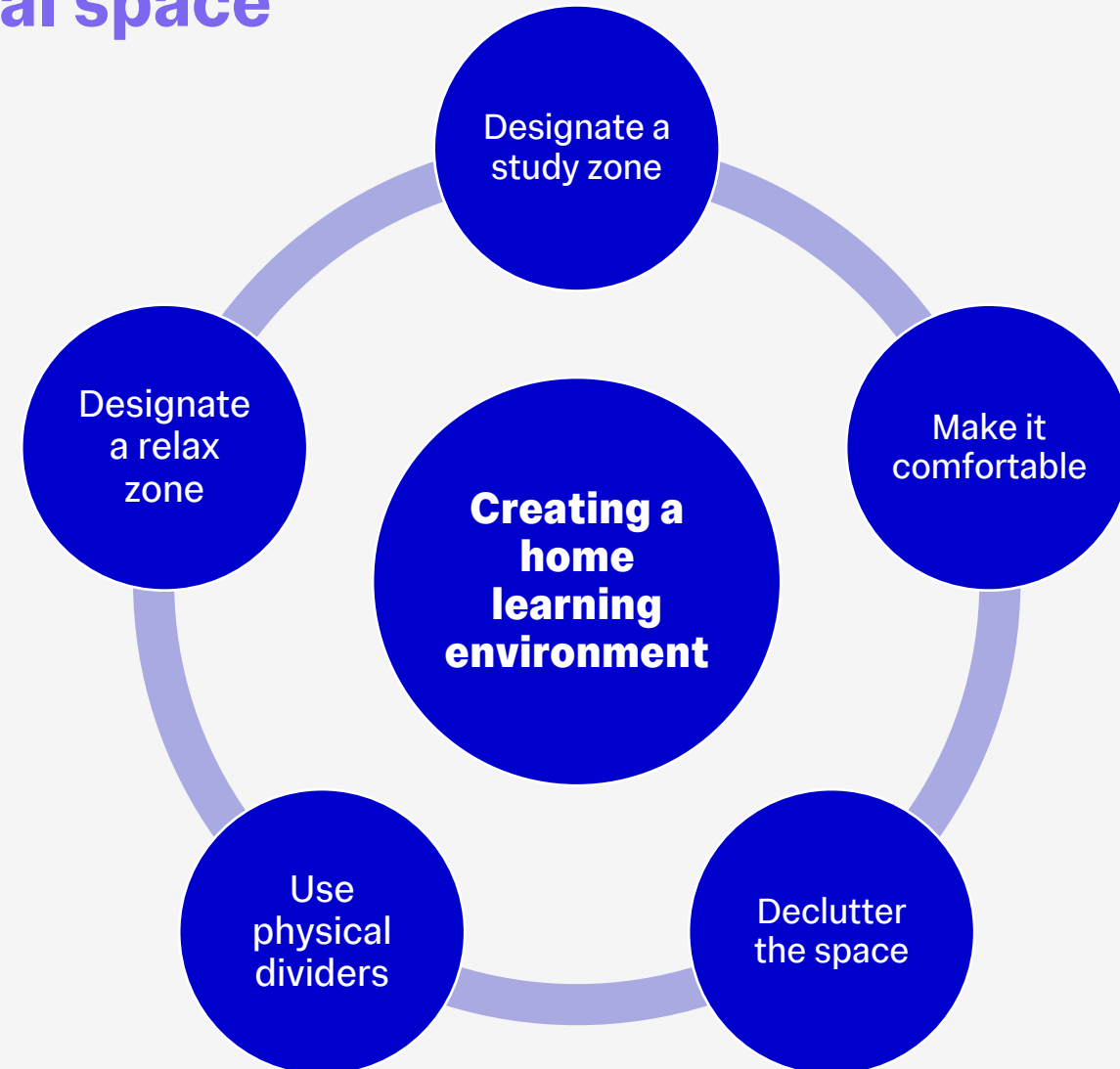
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Breakout activity 2: Design your ideal learning space

- In small groups, revisit key concepts:
  - Active learning
  - Transitional spaces
  - Liminal spaces
  - Focused and diffuse thinking

| Work together to imagine your ideal learning space | → | Which features are most important? | → | How does your space incorporate key concepts from this workshop? |

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Thinking ecologically

- We might think about our lives and Imperial as an interconnected ecosystem

- This ecosystem contains...
  - Resources
  - People
  - Potential

- ...and embraces ecological principles like:
  - Interdependence
  - Diversity
  - Resilience

- How can we develop a more effective learning ecology?

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Developing your learning ecology: Checklist

- ✓ Reflect on your experience in existing spaces

- ✓ Experiment with and understand your optimum conditions

- ✓ Use at least one new study space per month or term

- ✓ Be more willing to share your learning confusion with others

- ✓ Think about your study clothing and what makes you 'feel' focussed

- ✓ Divide your home space into study (focused) and relax (diffuse) zones
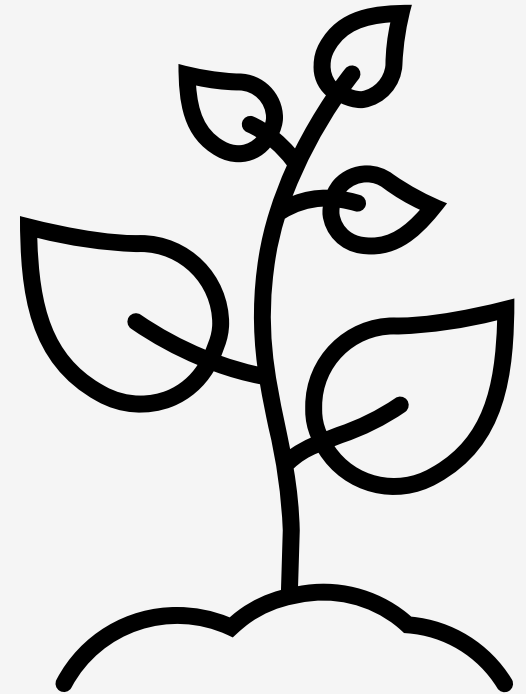
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Post-session Reflection

Imperial students -
To help you maximise this learning opportunity, this activity is designed to support you to reflect on what you've learnt and to consider what you can personally take away from this session.

- Your responses will be submitted anonymously.
- There are no right or wrong answers.
- This exercise should take no more than 3mins.
- We hope you find this activity helpful.

Learning Well Programme: Post-session Reflection Activity (THURSDAY)