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ERASMUS+ Innovation Alliance «Business Model Innovation with Artificial Intelligence for Urgent Green Agenda»

Metaverse as a Learning Surrounding

What makes immersive learning valuable for sustainable business innovation?

Literature review and expert interview findings

Dmytro Mamchur

HOW DID WE INVESTIGATE IT?

The findings combine literature-based analysis with exploratory expert evidence.

RESEARCH LITERATURE

23 cited sources

Systematic reviews · empirical studies
standards · accessibility · governance

- ① Immersive learning
- ② Educational Metaverse
- ③ AI-supported learning
- ④ Adoption and barriers
- ⑤ Sustainability and standards



EXPERT INTERVIEWS

7 interviews · 5 countries

Education · AI · Business · Engineering

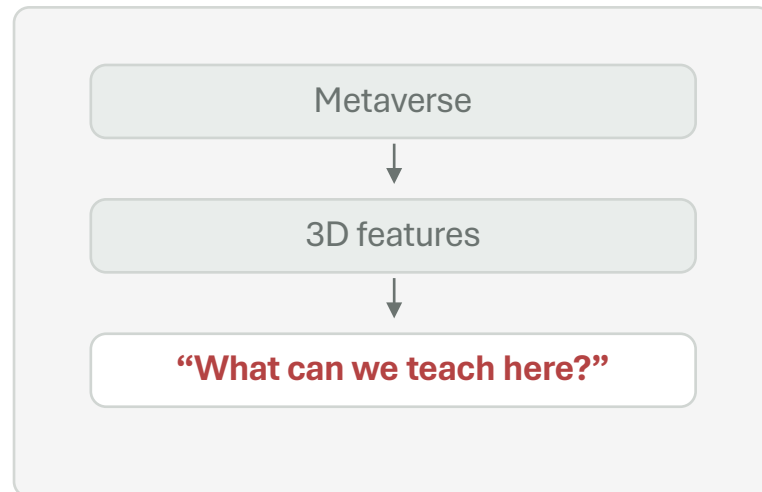
- RO Romania
- SE Sweden ×2
- LV Latvia ×2
- DE Germany
- FR France

Literature × expert experience → AI4GreenBus design implications

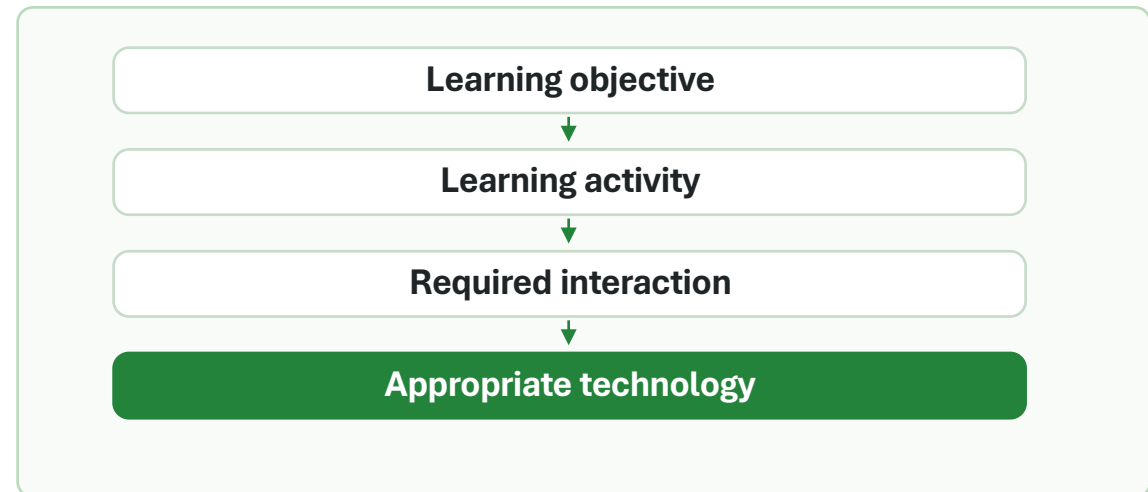
1. PURPOSE BEFORE TECHNOLOGY

Immersive technology adds value only when it improves the learning task.

Technology-first



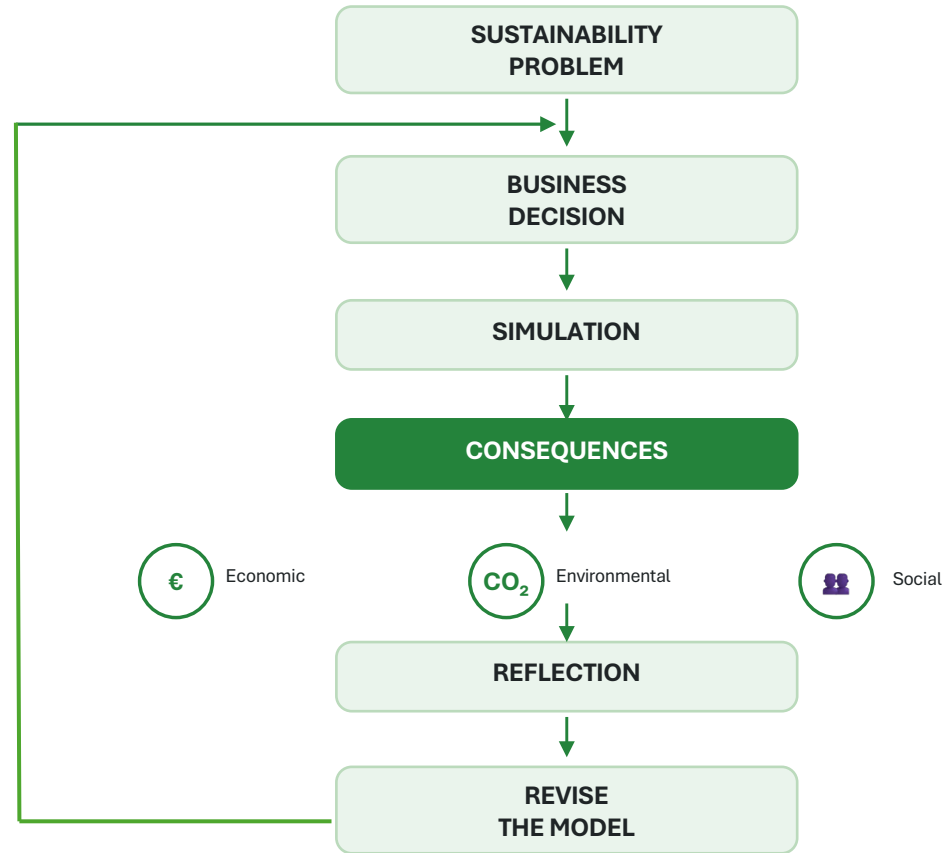
Research-supported direction



Start with the learning problem – not with the Metaverse.

2. LEARN THROUGH DECISIONS AND CONSEQUENCES

The strongest opportunity is simulation: learners can test choices before real-world implementation.



Illustrative learning scenario

A student team changes one business-model decision and compares outcomes.

Option A

Lower cost
Higher material use

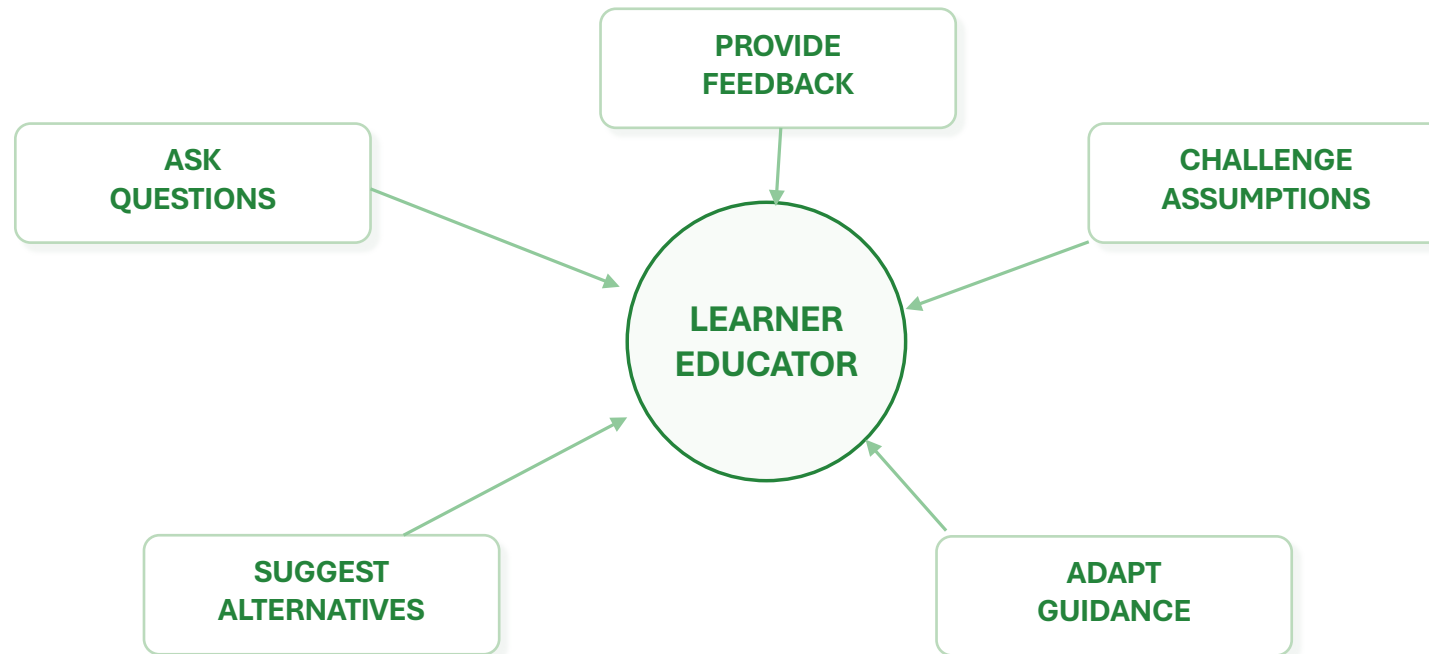
Option B

Higher cost
Lower waste

Experiment safely. See consequences. Improve the decision.

3. AI ASSISTS. THE LEARNER DECIDES.

AI is most valuable as a learning partner that strengthens judgement and reflection.



AI supports judgement – it does not replace it.

4. IMMERSIVE WHEN USEFUL. ACCESSIBLE BY DEFAULT.

Adoption depends on access, usability, teacher capacity and sustainable implementation.

01 ACCESS

Desktop · Browser · VR
Non-headset routes

02 USABILITY

Simple onboarding
Clear navigation

03 CAPACITY

Teacher support
Maintainable content

04 SUSTAINABILITY

Benefit vs.
cost & resources

VR-enhanced ≠ VR-exclusive

Maximum immersion is not the objective. Meaningful participation is.

WHAT DOES THIS MEAN FOR AI4GREENBUS?

Research findings become practical design principles for the Guidebook and future Metaverse Incubator.

01

**START WITH
THE LEARNING
OBJECTIVE**

02

**LET LEARNERS
EXPERIMENT WITH
CONSEQUENCES**

03

**KEEP HUMANS
IN THE DECISION
LOOP**

04

**DESIGN FOR
ACCESSIBLE AND
SUSTAINABLE USE**

Research findings → WP2 Guidebook → Sustainable Business Metaverse Incubator

The Metaverse is the environment. The decision–feedback–reflection cycle is the learning mechanism.



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THANK YOU!

Questions and discussion

www.ai4greenbus.eu

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