

## BIN Novo Mesto 2025 Think Tank: Education Systems for the Future of Jobs

# Beyond AI Literacy: Integrating Remote & Immersive Technologies into the Foundations of Engineering Education

# The Future of Jobs Report 2025 Al Takes the Spotlight... But What's Missing?

Al and Big Data identified as the most transformative technologies (86%), Robotics & Automation (58%), and energy generation, storage and distribution (41%)

The way we work, learn, make decisions, and solve problems will be different

Why are Remote and Immersive Technologies absent from the report?

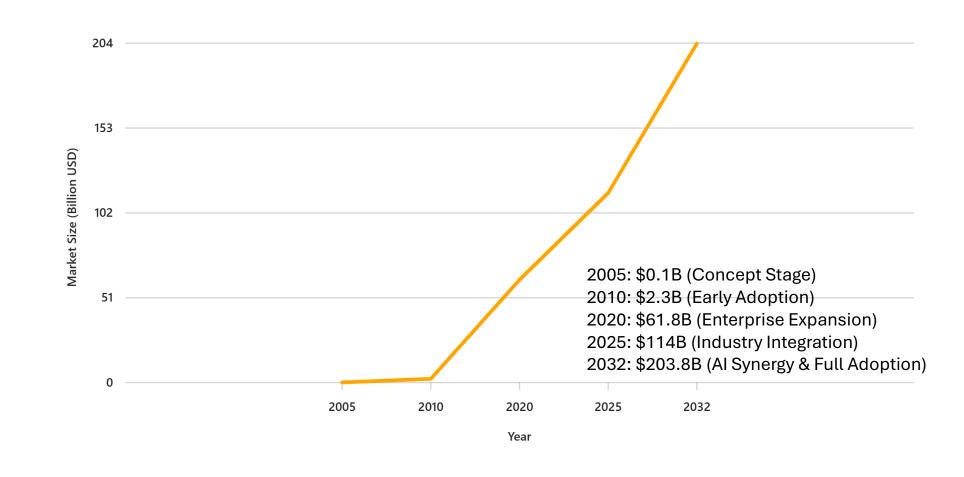
### The Silent Players: Remote & Immersive Tech

Al systems can learn, reason, and make decisions: process, predict, and optimize Big Data contains massive volumes of data (Volume, Velocity, Variety, Veracity, and Value)

AR and VR, MR, Digital Twins: create embodied, spatial, and interactive experiences that are essential for training engineers in complex, real-world environments

### Not in the Report, But Everywhere Else

Manufacturing and Industrial Design, Training, Healthcare, Automotive, Aerospace and Defense, Construction and Infrastructure, Mental Health, Therapy, and Rehabilitation, Gaming and Entertainment, Real Estate and Architecture, Retail and E-commerce, ...



Examples: Automotive Industry (BMW, FORD, Porsche, ...), Aerospace (NASA, Boing, Airbus, ...), CERN

### Al Got the Invite... Remote & Immersive were Left Out

#### **Although**

AI can enhance immersive systems through adaptive feedback, intelligent agents, or datadriven personalization

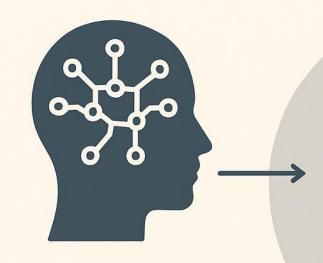
#### it cannot

replace the sensory, spatial, and experiential dimensions that AR/VR ... provide

### The Missing Link in Future Skills

## AI & BIG DATA TECHNOLOGIES

# REMOTE & IMMERSIVE TECHNOLOGIES



# CONVERGENCE ZONE

Al-driven personalization real-time analytics adaptive immersive experiences

## AI & BIG DATA TECHNOLOGIES

- Automation
- prediction
- intelligent systems



# REMOTE & IMMERSIVE TECHNOLOGIES

- Virtual collaboration
- AR/VR
- telepresence

### What does this mean for Engineering Education?

If these technologies are shaping industry, they must also shape how training students to be future engineers, not being itself "the solution", but a powerful complement to hands-on practice

Bridge Theory and Practice

Risk-Free Experimentation

No Theoretical Limits

Sustainability & Resource Efficiency

## **Expanding Students Access and Engagement**

Global Collaboration

Accessibility for All

**Engagement Through Immersion** 

Cognitive and Emotional Engagement

Fostering Interdisciplinary Learning

### **Democratizing Education & Providing Future Skills**

**Human-Centric Learning** 

Assessment and Feedback

real-time analytics, adaptive feedback, competency-based

Democratization of Education

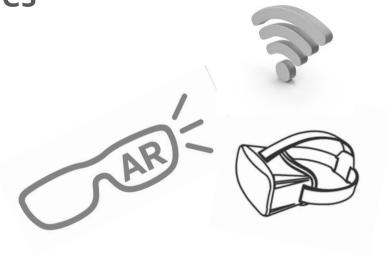
Alignment with Future Skills

Scalable Lifelong Learning & Upskilling

### Hands-On vs. Remote & Immersive

**Complementary Roles** 





Develop tactile and physical skills

Democratize learning

Provide real-world experience

Empower cooperation and adaptability

Build professional judgment

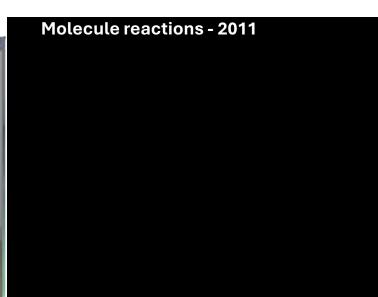
Develop skills for tomorrow

## **Learning Without Limits**















## **Expanding Students Access and Engagement**

Engineering education cannot be reduced to market trends - it must be a commitment to our collective future. This is not about jobs that generate income but build nothing, like the influencer phenomenon.

**It's ALSO about values**: sustainability, ethics, critical thinking, and the democratization of education through inclusive and accessible learning technologies









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### online experimentation @ FEUP for all @



Remote Experiments



Virtual Experiments

**Instrumented Devices** 



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