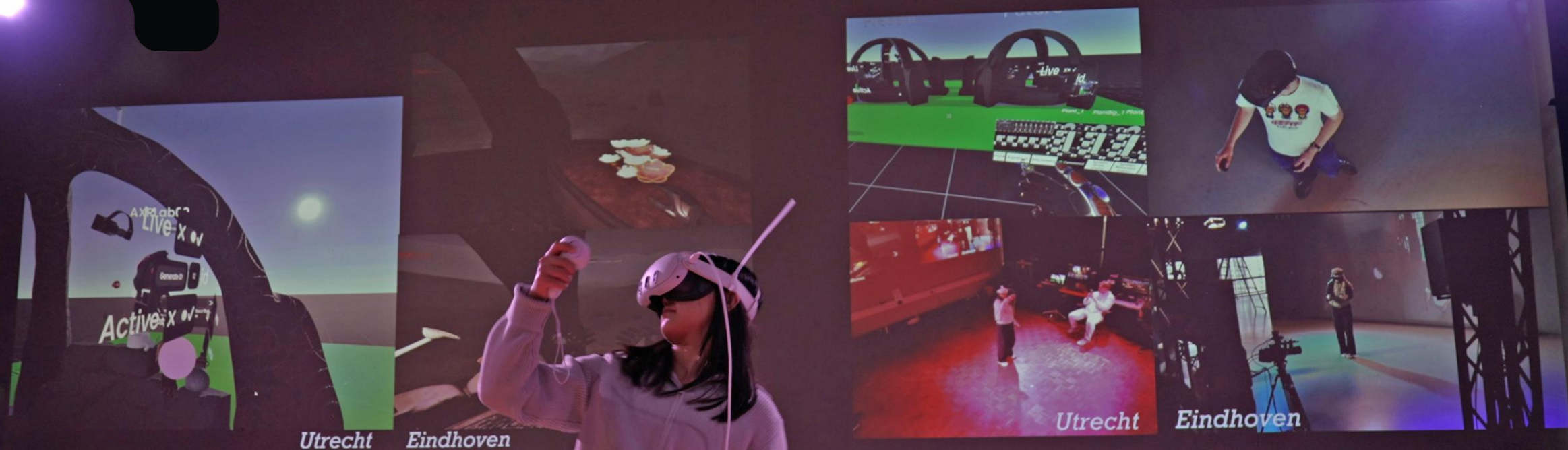


SURF



Designing the education area of the future

Case study: collaborative co-creating in networked XR-environments

Sjiewke Dankert | Program manager Futuring in Education | SURF
Chantal van Zeeland | Project lead Future Campus | SURF

June 17th, 2026
Media & Learning conference 2026

| Collaborative ICT organisation of Dutch education and research institutions



- Cooperative / collaborative association
- Over 120 members
- >900 staff
- National IT services for research & education
- All research domains
- Many large projects - funded by Dutch Research Council, public & private grants

| Who is SURF?



Association for education & research

Our members include Dutch universities, universities of applied sciences, MBO colleges and research institutions working together on ICT.

SURF



Services & procurement

Developing and delivering reliable state-of-the-art ICT services or purchasing them centrally at favorable conditions for our members.

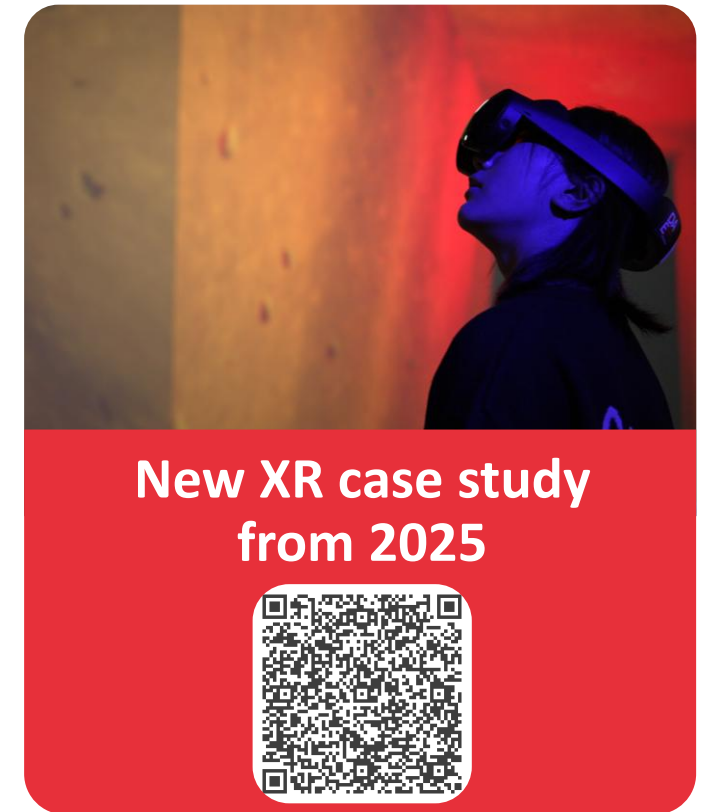


Innovation space

Working on innovative applications of ICT in education and research. Bringing institutions together to share knowledge, vision and expertise.

| The Future Campus project | Publications

Can tomorrow's education still be delivered on today's campus?



SURF

Goal: help institutions make future-proof choices about their physical and virtual campus.

| Trends found in Dutch campus innovations



1. Emergence of blended, hybrid and online education
2. Growing commitment to lifelong learning
3. Far-reaching flexibilisation and personalisation
4. Growing importance of wellbeing and inclusiveness
5. Development of smart buildings and infrastructure
6. Increasing focus on sustainability
7. Digitalisation and datafication
8. Ethical awareness around technology
9. Changing role of teachers
10. Low change capacity of organisations
11. Increasing interdisciplinary cooperation
12. Intensifying internationalisation and globalisation
13. Flattening population growth, increasing diversity, housing shortage and ageing population
14. Economic uncertainty and polarisation
15. Increasing pressure to perform
16. Changing labour market demand

| 4 Future scenarios for the campus in 2040



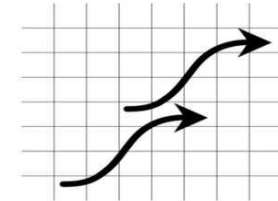
Growth

- Ultra personalization.
- Education without borders.
- Unlimited incremental innovation.



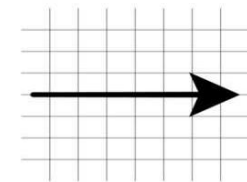
Discipline

- Extreme sustainability measures.
- Total government control.
- Social service obligation.



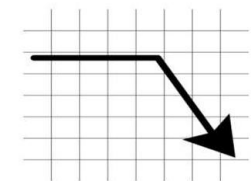
Transformation

- Brain chips for learning.
- Education without institutions.
- Hyperimmersive XR.



Collapse

- Zero privacy.
- Technological proliferation.
- Diplomas are worthless.





SURF

| What is networked XR?

Networked XR connects VR headsets and sensors across a network, enabling multiple users at different physical locations to collaborate in real time inside a shared virtual world.

Key distinction

Shared virtual space $\neq$ video call. Students physically present at different locations, collaborating as one team in one environment.



| 2025 Case study: Co-Located XR



Design Academy Eindhoven | Trans Realities Lab (TRL)

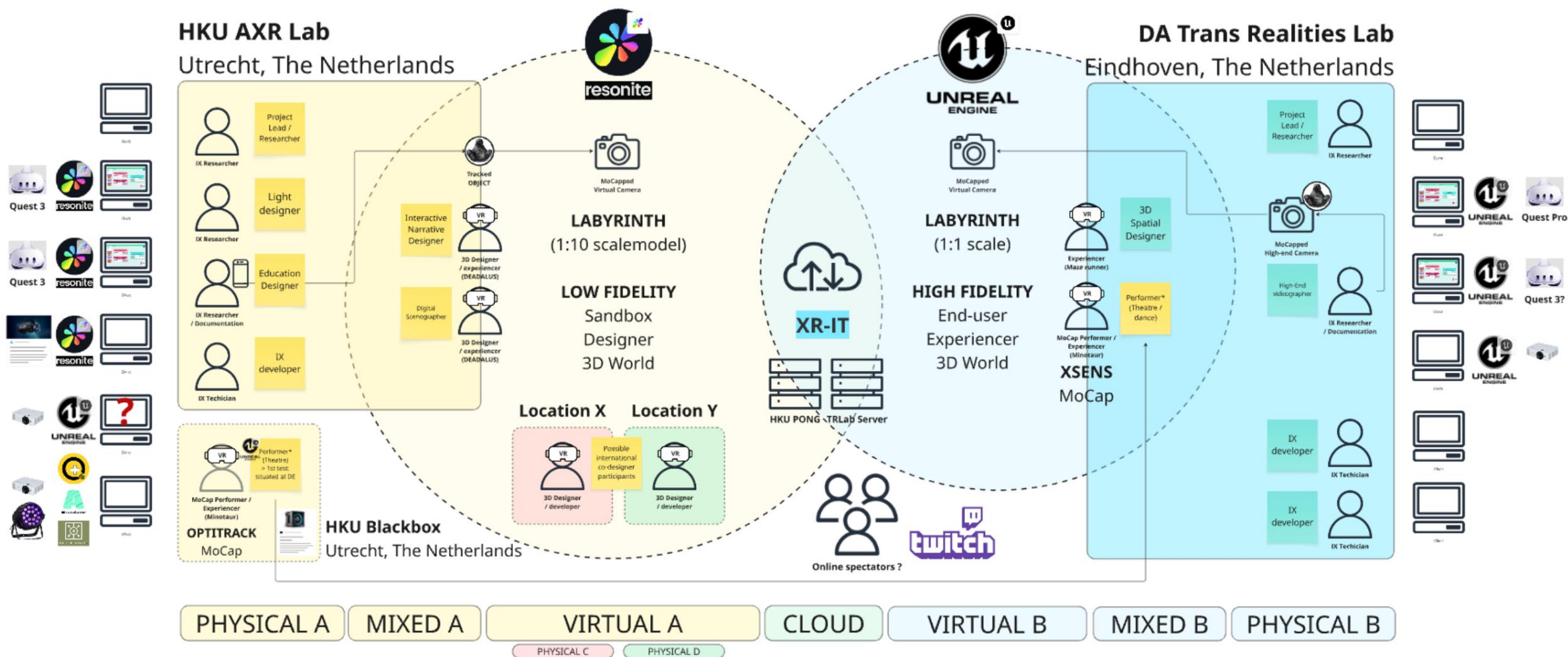
High-end anchor lab
~€600,000 investment
>400 m² | 10 Gbps network
4K projectors, LED wall, motion capture



Hogeschool voor de Kunsten Utrecht | Artistic Extended Realities Lab (AXR)

Mid-range lab
~€150,000 investment
150 m² | modular setup
Sandbox environment, multiple VR headsets

2025 Case study: Co-Located XR



| What students learned

Diverse expertise

Collaborating across disciplines was the biggest learning gain. Spatial designers, theatre makers and programmers had to truly understand each other's craft.



Technical translation

Negotiating what is technically possible, and communicating about this, across platforms and skill levels.



Cross platform limits

HKU students worked in lower resolution and couldn't see DAE's detailed lighting. Comm bridges (video streams, a 'bridge person') became essential.



Iterative thinking

In one month, students produced a first iteration. They saw what didn't work yet and that was the point. XR became a tool, not the goal.



| What didn't go so smoothly

Platform mismatch

Resonite and Unreal Engine use different coordinate systems. Walls didn't align, avatars walked through solid objects. Calibration required constant adjustment.

IT security barriers

Hogeschool Utrecht's PCs were so locked down that even authorised staff couldn't install software. They only joined the networked session on the last day, after a registry workaround.

Teacher preparation

"Bringing a technology into your classroom doesn't mean the teacher knows what to do with it." — Joris Weijdom (HKU). Training and didactic frameworks are non-negotiable.

Ongoing investments needed

Hardware ages within 4–5 years. One-off budgets are not enough. Labs need structural funding for maintenance, upgrades and middleware development.

| 10 tips for institutions starting with Networked XR

1

Start from educational needs, not technology

2

Start small and modular

3

Connect the lab to a research group (lectoraat)

4

Get institutional backing AND an operational team

5

Build a network, don't work in isolation

6

Invest in middleware, not just hardware

7

Train teachers, both technical and didactic skills

8

Stay flexible, expect to change course

9

Embed in curriculum, not as a standalone experiment

10

Involve IT from day one, plan for flexible access rights

● The potential: what's next?

Radical connectivity

Any institution in the world could be a potential collaborator. Inter-cultural collaboration without travel.

AI + 3D worlds

AI will let users generate and share 3D environments in real time via prompts, which could dramatically accelerate the creative processes.

Ethical tensions

Ongoing tension between dependence on commercial platforms (Meta Quest, Unreal) and institutional values around privacy, security and public interest.

| Over to you

Thank you for listening.

Are there any questions?

Resources

Learning in shared virtual spaces: Getting started with co-creation in XR labs (SURF, 2026)

Future Campus report: research into 14 campus innovations (SURF, 2025)

Future Campus scenarios report (SURF, 2023)

Find all these reports
on the SURF Future
Campus website



