Competence Renewal, RDI and Industry

Co-Operation in Higher Education
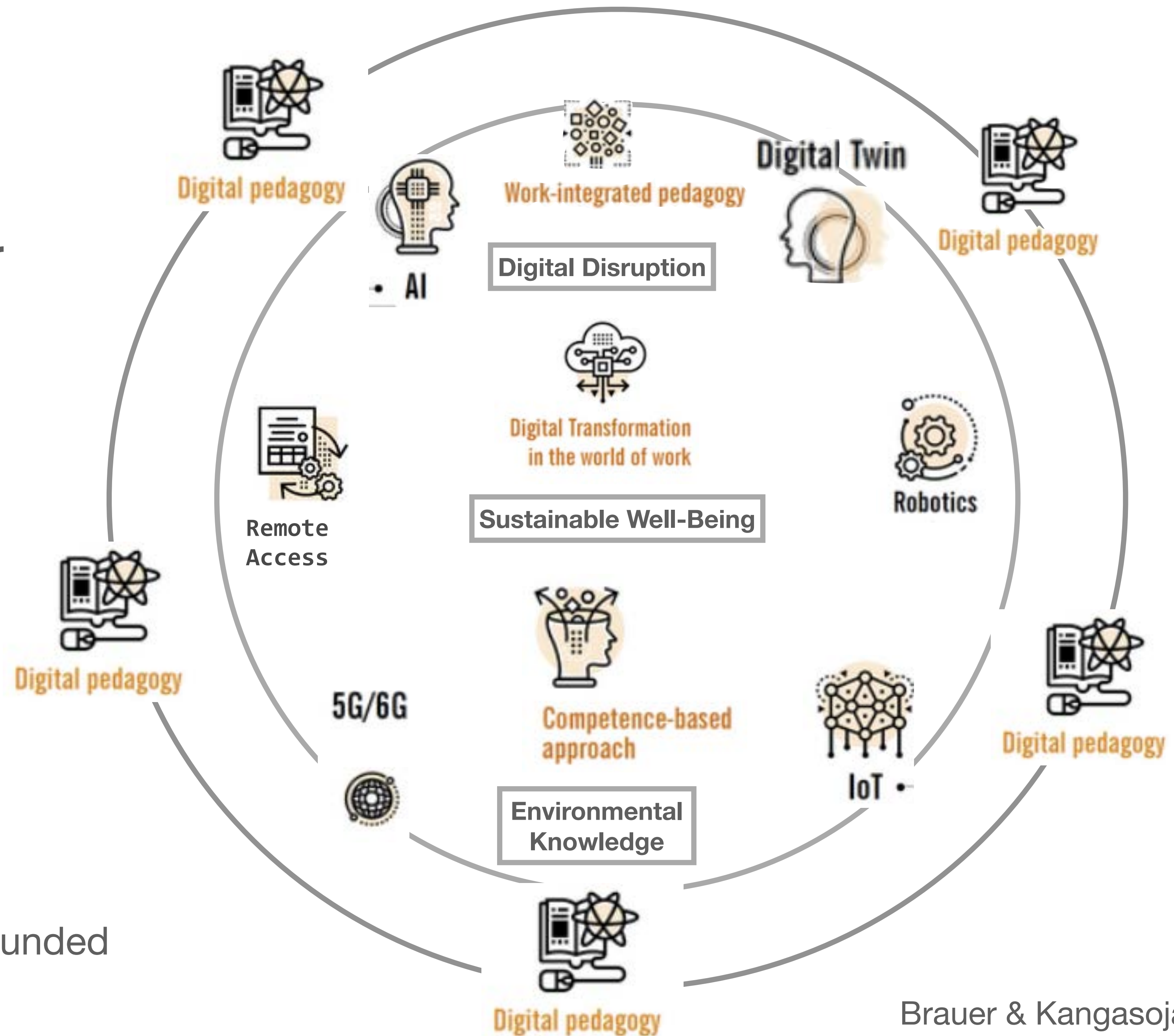
Smart Campus

OAMK

6.5.2021

Dr Sanna Brauer

Media&Learning

SMART CAMPUS

A platform and partnership model for innovation collaboration with SMEs, accelerating the digitalisation of society.

Brauer & Kangasoja, 2021

Finnish Higher Education

Before the Age of COVID-19

- The era of strategy work and discipline specific piloting

- Early adopters - various development initiatives

- Some university level breakthroughs

- Ministry funded national programmes for digital pedagogy and online learning environments

- National and European level guidelines and frameworks

2016

Acta Universitatis Tamperensis 2181

ILKKA HAUKIJÄRVI

Strategizing Digitalization in a Finnish Higher Education Institution
Towards a thorough strategic transformation

Since 2015

Flipped Classroom
University of Eastern Finland

https://www3.uef.fi/en/web/ameba/fc-uef

UEF FLIPPED

#FLIPPEDCLASSROOM#SMARTVERSITY#UEF2020

UEF's strategic aim is to be the best Finnish academic learning environment by 2020. In addition to innovatively transforming our physical and digital learning environments, we are embracing a student-centred didactical-pedagogical culture.

1 A one-year programme to support UEF teachers to start implementing the flipped classroom.

100 teachers are using the flipped classroom method in their courses.

8,000 students participate in Flipped Classroom courses by the end of spring 2018.

FLIPPED MODEL FOR TEACHERS

- Individual support on how to flip the classroom
- Support from a pedagogically oriented research team (team Ameba)
- Practical support and research relating to flipped courses
- Support for reporting on the results
- Three seminars organised by the Ameba team
- Technical support
- Self-study materials in a digital platform
- Peer support: a Yammer group for discussion
- Local peer groups and a mentor network
- Lighter teaching load

TRADITIONAL CLASSROOM

- Students (passively) listen to the teacher and take notes (if they can).
- More challenging content is studied independently (without peer or teacher support).
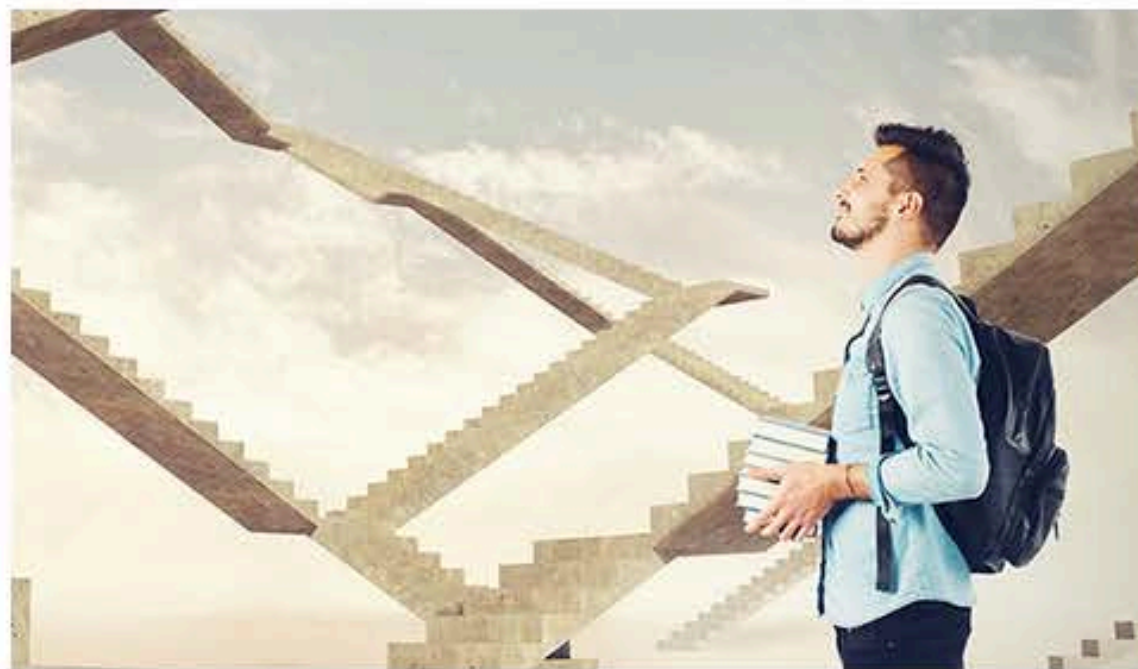- Teacher-centred.

FLIPPED CLASSROOM

- Students study the material before class via digital platforms (flexibility).
- In class, students work together with their peers and the teacher. Time can be used for more complex issues and problems, and for putting theory to practice.
- The teacher can be a real pedagogical expert who masters the content. Class time allows for the use of a wide spectrum of learning-centred approaches.

eAMK: Digitalisation of the University of Applied Sciences' Pedagogy

> Digital pedagogy training programme

A digital pedagogy training programme for teachers was implemented during the eAMK project. The outline and materials of the training programme provide higher education institutes with a model of how to implement digital pedagogy training based on the quality criteria for online teaching.

> eAMK Open Badge Family

The eAMK project has created an Open Badge family that has been designed together with experts from different universities of applied sciences. The Open Badges created in the eAMK project are linked to the project's content and are based on the online implementation quality criteria created in the project.

> Online Degrees

The objective of the eAMK project is to ensure that students have access to smooth digital learning paths, which can be supported by enabling cross-institutional studies between universities of applied sciences, also in studies aimed at online degrees.

> Digital Guidance

The 'Digital guidance path' image supports both the student and those providing students with guidance in grasping an overview of the different stages involved and the needs that may arise during studies.

> Quality criteria for digital guidance

The digitalisation of teaching and the diversification of learning environments require high-quality guidance that is readily accessible for everyone also in digital environments.

> Digital Guidance Application Experiments

The intention of experiments is to share experience-based information on various applications' usage and purposes of use, encourage teachers and students to utilise new tools and methods in guidance and gather experience-based information on the use of these tools.
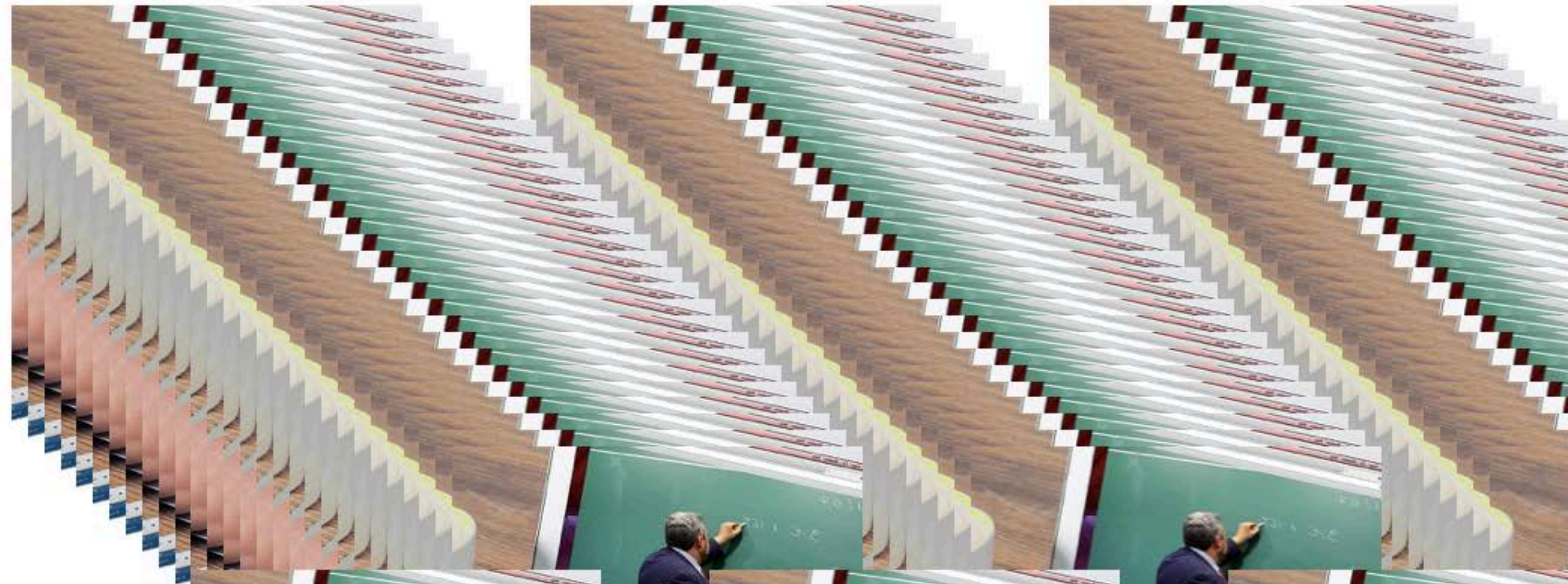
https://www.eamk.fi/en/pedagogy2/

The Big Leap

Education in the Age of COVID-19

- Teaching and guidance has been organised as widely as possible in alternative ways, including distance learning, various digital learning environments and, where necessary, independent learning.
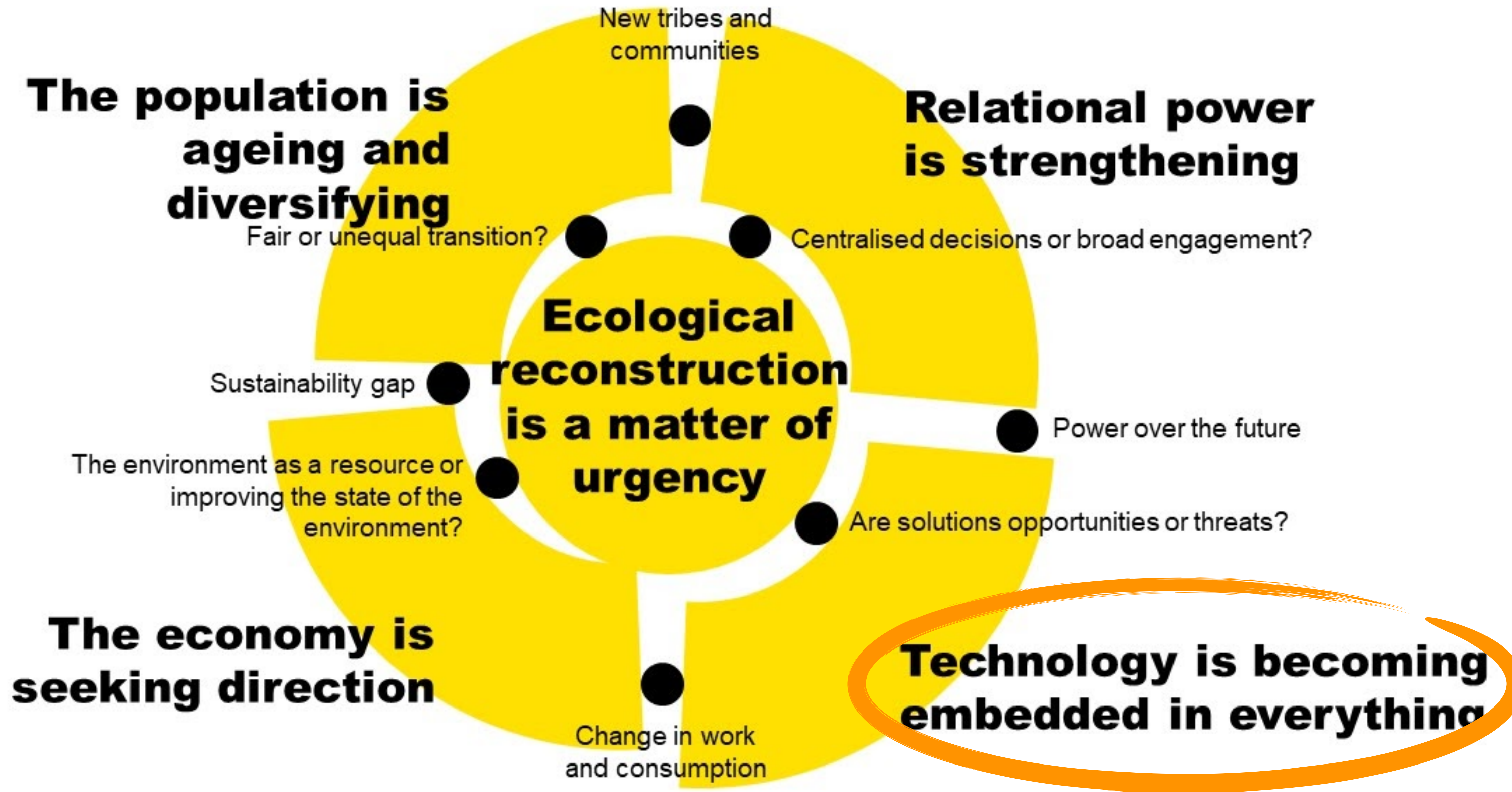
- First days, weeks and months were ok, but…
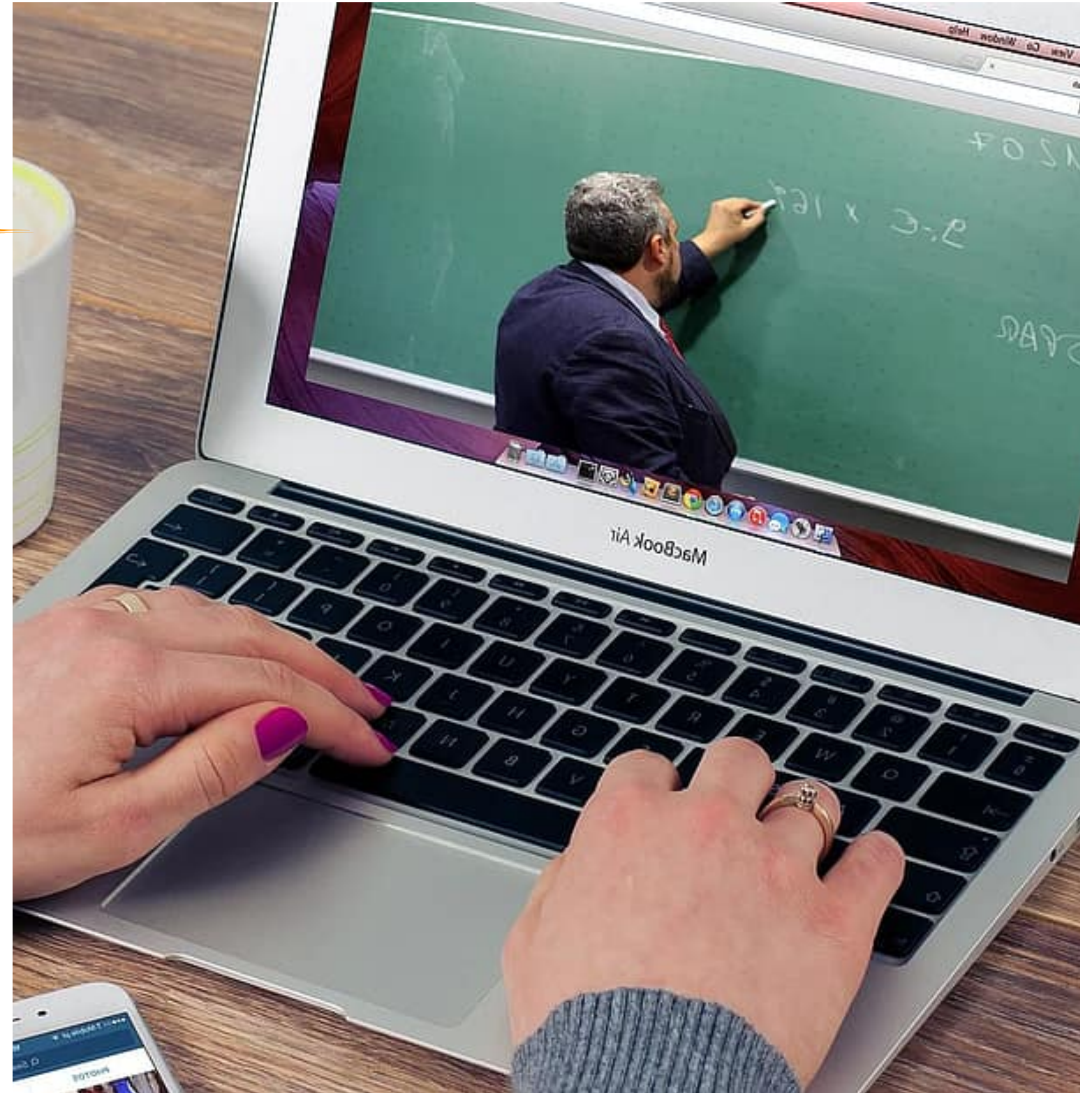
How can we do better?

Digital Disruption
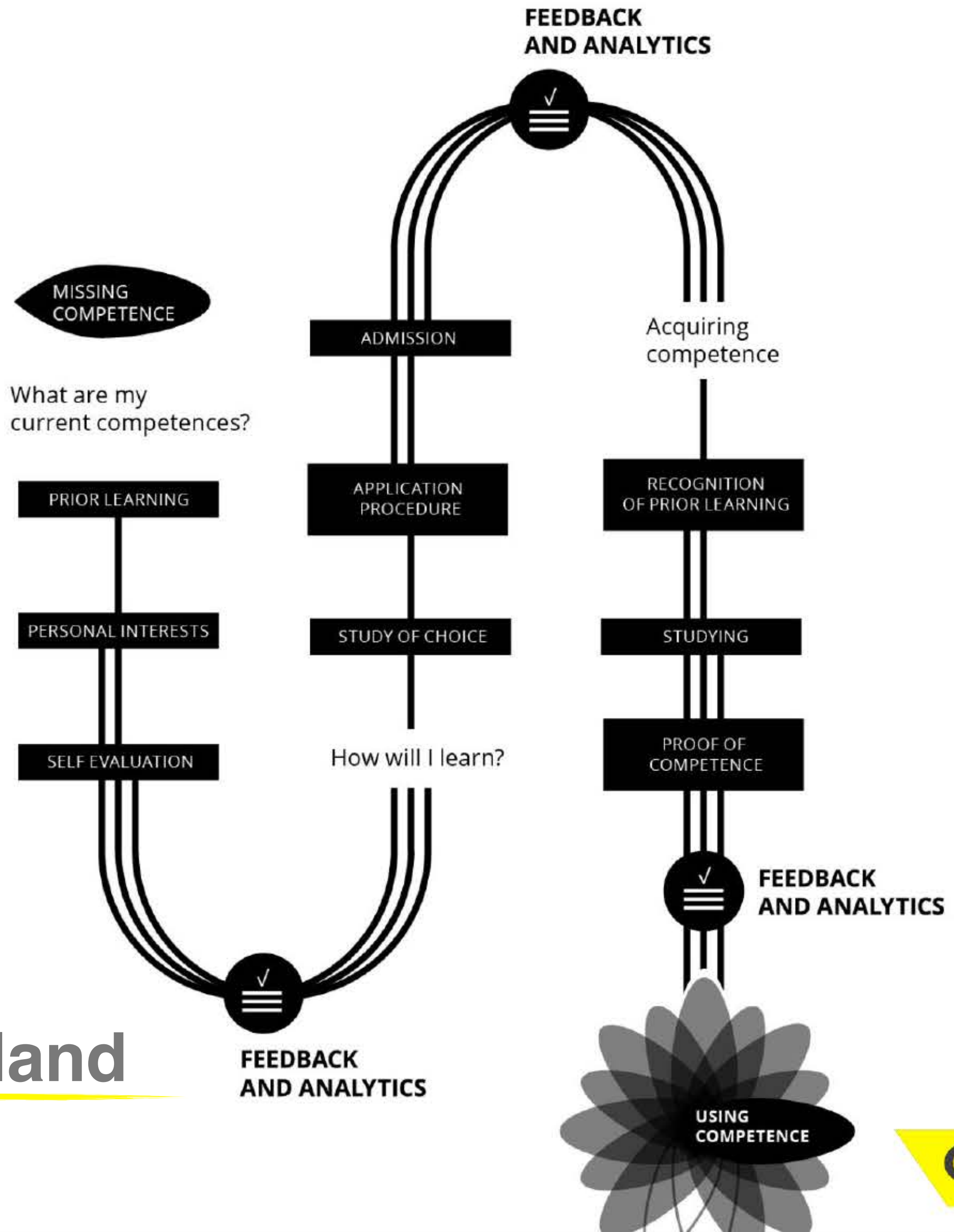## Digitization & Digitalization

- Digitalisation refers to a process in which **analogue information and processes are converted into digital format** (Brenner & Kreiss, 2014).

- The metaphor of digitalisation in education emerged during a period when phenomena such as **budget cuts and privatisation**, layoffs and outsourcing of labour marked the ethos of the twenty-first century. During this time, digitalisation was constructed as **an ultimate purpose and an all-encompassing matter in education**. (Vivitsou, 2019)

- **Digitization** in higher education means activity, for example **implementing education technology to learning design in order to improve pedagogics and learning outcomes** –and/or the accessibility and scalability, or implementing information systems to streamline business processes and practices. (Haukijärvi, 2016)

- **Digitalization** of higher education is ultimately about **the transformation of the surrounding environment and the field of higher education in general.** Digitalization of a higher education institution is a strategic organization-wide transformation and learning process, linked to the acknowledgment of the thoroughness of the megatrend: how it affects and what threats and possibilities it may deliver to our competitiveness now and in the future, and how it therefore must be grasped from multiple perspectives. (Haukijärvi, 2016)

- **Digital disruption** leads to transformations through new technologies, to environmental turbulence capable of producing **industry-level upheaval**. (Skog, Wimelius, & Sandberg, 2018)

SITRA'S MEGATRENDS 2020

New tribes and communities

The population is ageing and diversifying

Relational power is strengthening

Fair or unequal transition?

Centralised decisions or broad engagement?

Ecological reconstruction is a matter of urgency

Sustainability gap

Power over the future

The environment as a resource or improving the state of the environment?

Are solutions opportunities or threats?

The economy is seeking direction

Change in work and consumption

Technology is becoming embedded in everything

Sitra's Megatrends 2020 https://www.sitra.fi/en/topics/megatrends/#what-is-this-about

EU LEARNER

SKILLS AND COMPETENCES

MISSING COMPETENCE

What are my current competences?

PRIOR LEARNING

PERSONAL INTERESTS

SELF EVALUATION

ADMISSION

APPLICATION PROCEDURE

STUDY OF CHOICE

How will I learn?

FEEDBACK AND ANALYTICS

Acquiring competence

RECOGNITION OF PRIOR LEARNING

STUDYING

PROOF OF COMPETENCE

FEEDBACK AND ANALYTICS

FEEDBACK AND ANALYTICS

USING COMPETENCE

DIGITAL LEARNER PATH

#AuroraAI programme Finland
– life-event ecosystems

COMPLEAP

Digital strategy on an individual, organizational, industry or societal level

- **Competence-orientation**
- **Ongoing Professional Development / Development Plans**
- **Organisational Strategies**
- **Digital Transformation in the World of Work**

RadSim offers various opportunities to simulate, test and train the safe use of medical radiation, while utilising diverse imaging methods.

The Full Power of Digital Transformation

It is not enough to be pedagogically effective while providing meaningful digital learning; **we also need to promote digital competences to remotely access and operate the machines and equipment** needed in different disciplines to ensure excellent learning experience when students are at home or at work.

Virtual Visits
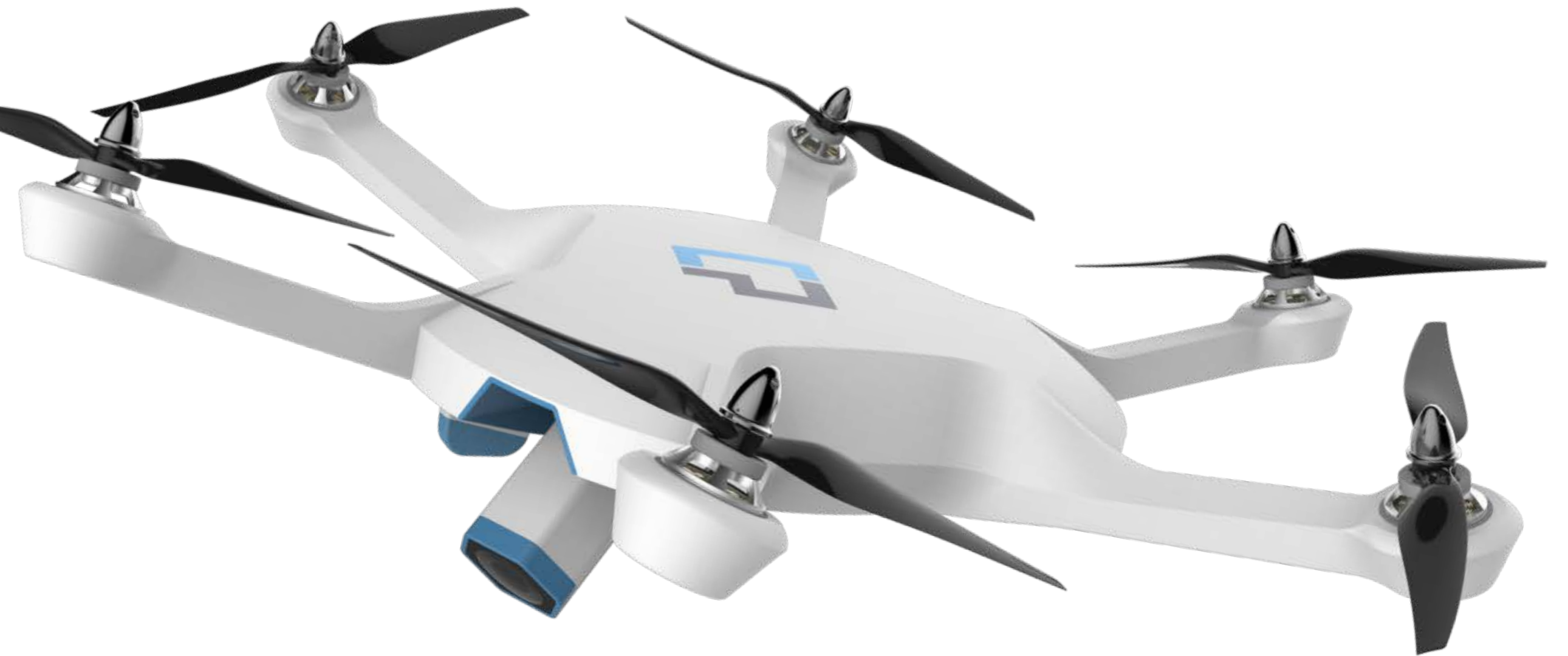
Simulations, robots and drones,

Internet of Things, Augmented Reality,

Virtual Reality, wireless technologies, 5G, 6G….

Digital Twins

A digital twin is a digital replica of a living or non-living physical entity. Digital twin refers to a digital replica of potential and actual physical assets, processes, people, places, systems and devices that can be used for various purposes.
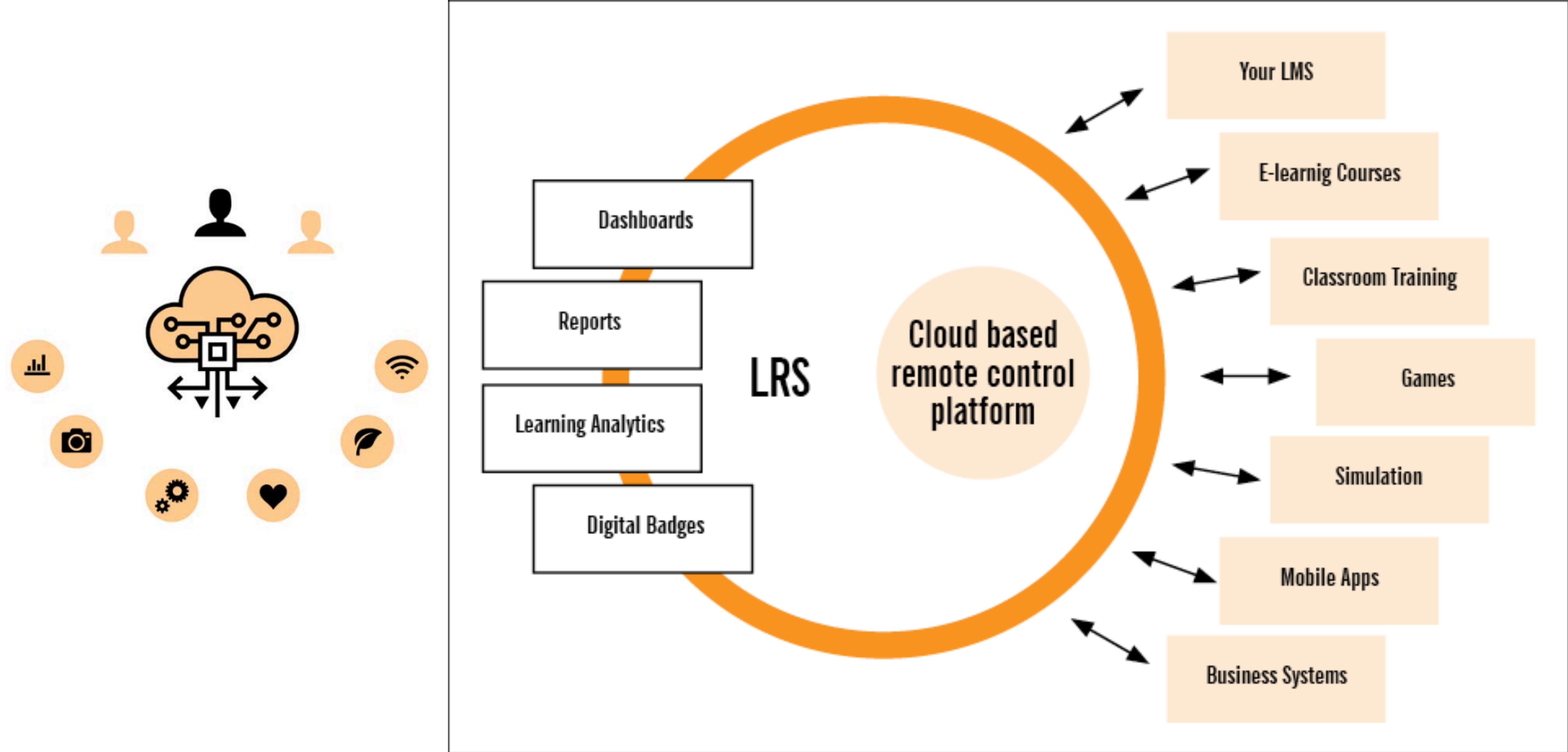
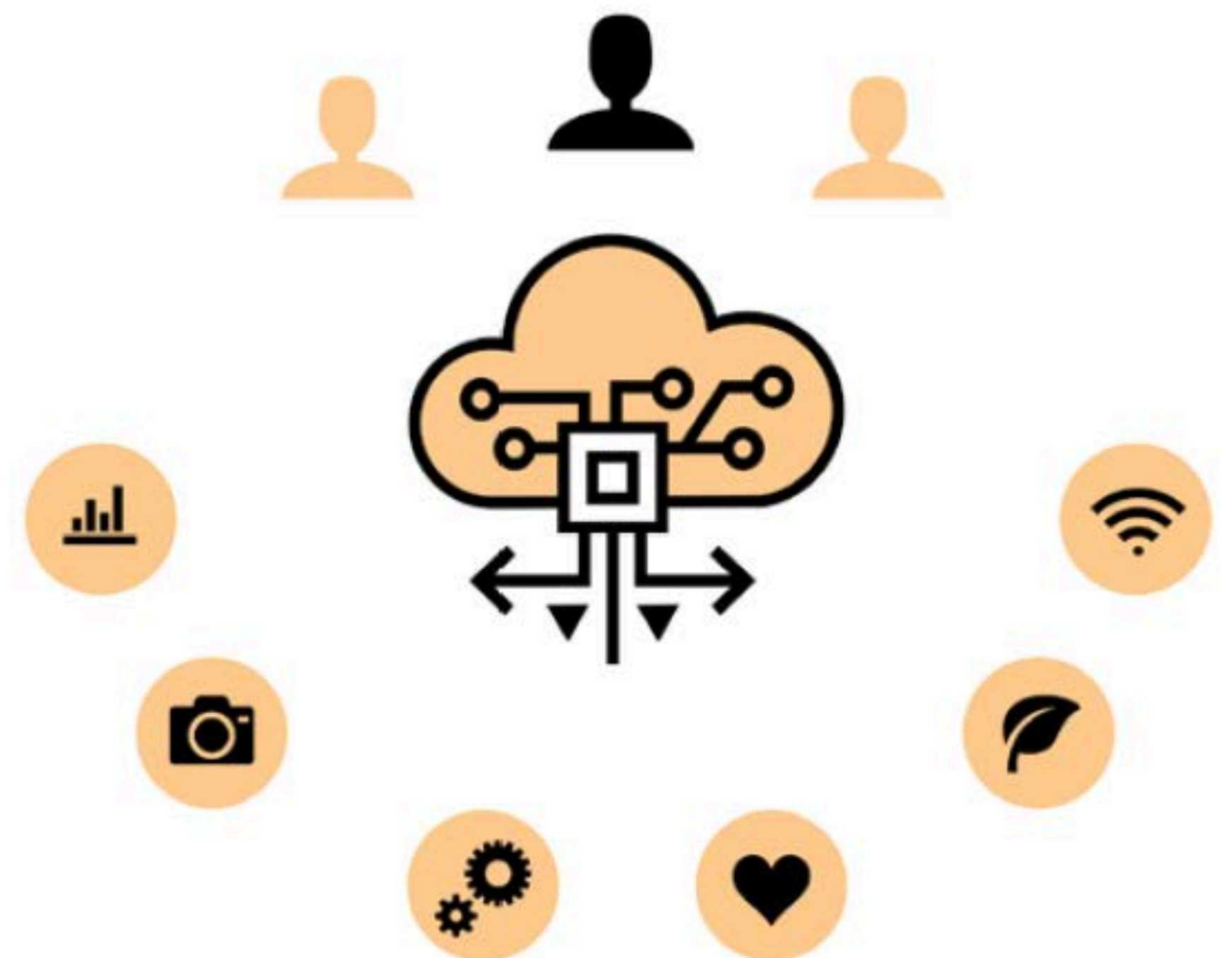

Photo: Kati Mäenpää

Digital Twins -
A hybrid laboratory

a) EaasLab for Energy

b) CloudFront for Mechanical Engineering

c) Virtual Musical Instrument Education Environment

d) Remote Patient Examination and Monitoring Solutions
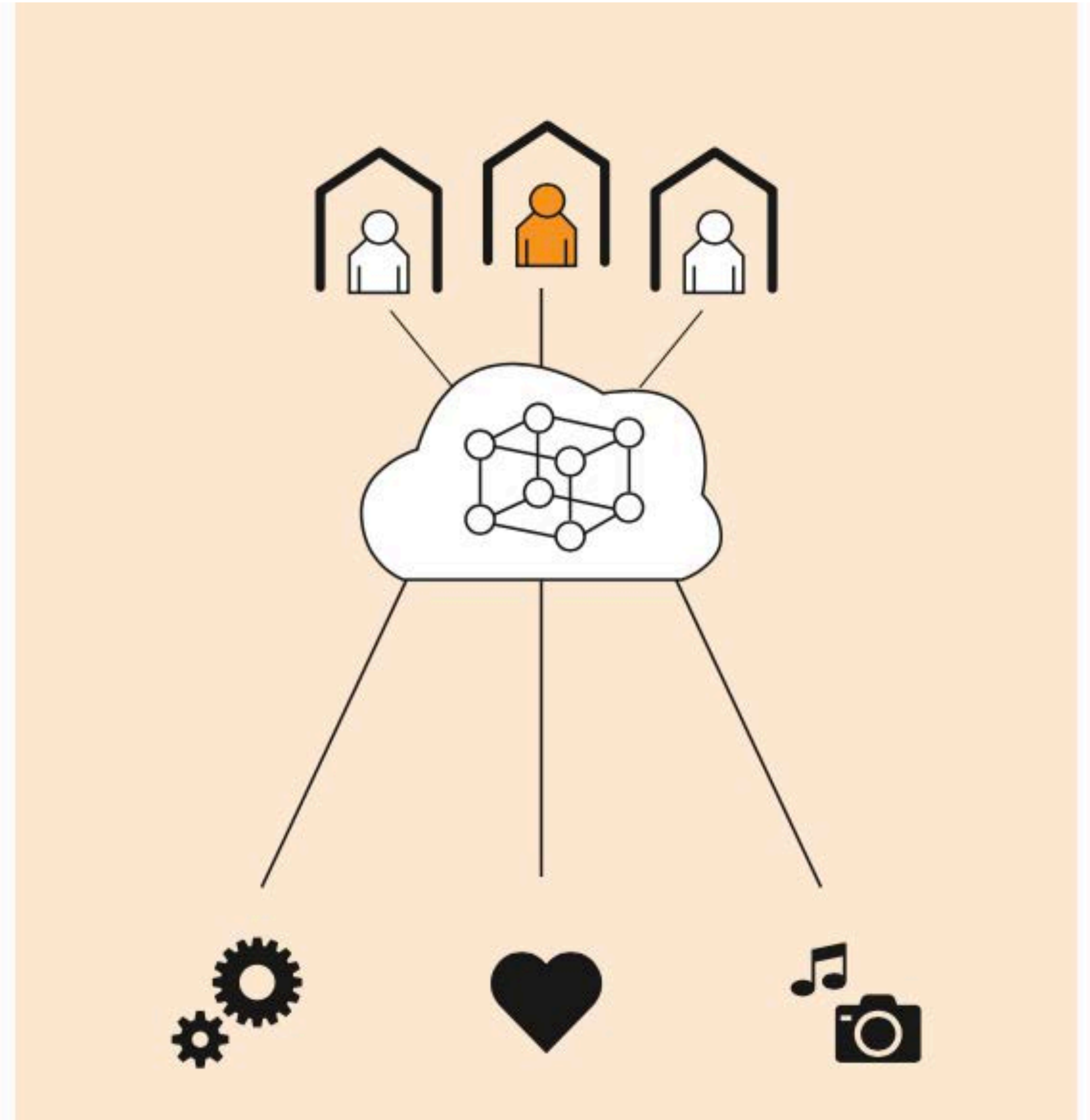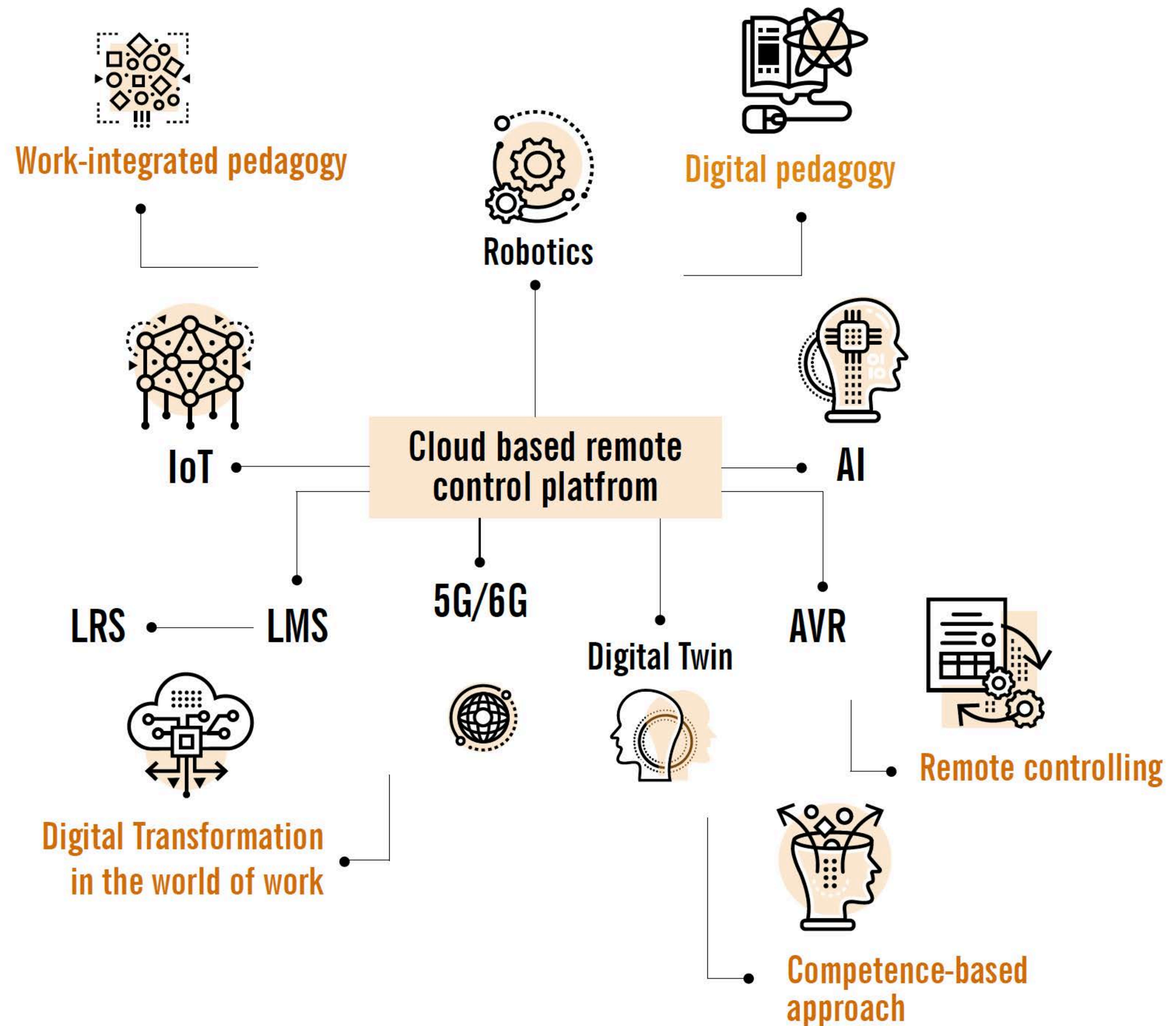
Beyond Learning Management Systems

Smart Campus - How it could and should work?

Connection Of Digital Pedagogy And Technology

Competence-based education is challenged by complex, collaborative and technology-driven thinking that requires pedagogical competences in terms of deep learning (Ruhalahti, 2019).

Work-integrated pedagogy

Robotics

Digital pedagogy

IoT

Cloud based remote control platfrom

AI

LRS • — • LMS

5G/6G

AVR

Digital Twin

Digital Transformation in the world of work

Remote controlling

Competence-based approach

Digital Transformation

in the World of Work - How can we respond?

- **HYBRID TEACHING, EXPERT SUPPORT**
- **HYBRID LEARNING, Learning to learn in new environments**

- Strengthening the working life perspective
- Upskilling, reskilling the individual competences needed in professional life
- Research-based but competence-oriented education and training
- Integrating theory and practice, RDI activities and education
- Collaborating in digital environments and developing customer oriented services
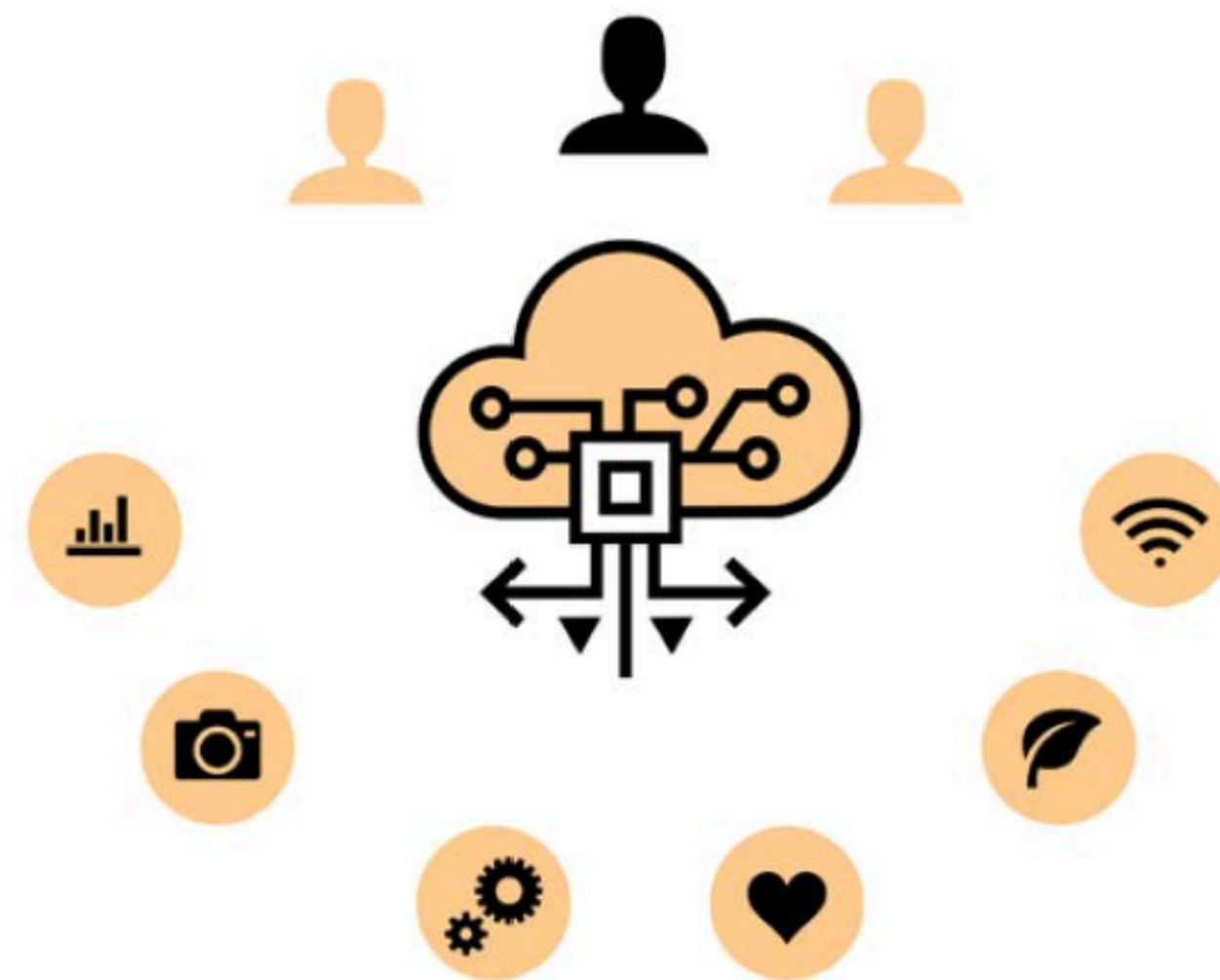
Solution

**Research Framework
Theoretical Framework**

Hyper learning experiences at home, work or school

Interested in partnering?

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https://www.researchgate.net/profile/Sanna_Brauer

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SMART CAMPUS

https://smartcampus.fi/