Cultivating social-creative knowledge practices: Educational transformations in the digital age

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Contrast between traditional school learning and digital knowledge practices

Traditional educational practices

Acquiring basic knowledge and skills

- Teacher-centered, textbook-driven
- Externally regulated individual learning
- Reproduction of simplied and outdated textbook knowledge

Gaps between super social informal activity and individual learning at classroom

Focused digital practices of learning

Application and creation of knowledge

Collaborating for solving complex problems

- Deliberate building and creation of knowledge
- Appropriating scientific, engineering, design and entrepreneurial practices

Network of research projects regarding technology-mediated learning

- ■Future Learning Environments (FLE, 1999- 2000, 2000-2001)
- European Collaborative Learning Networks (CL-NET, 1998-1999)
- Innovative Technology for Collaborative Learning (ITCOLE, 2000-2002)
- Integrated Knowledge Practices Laboratory (KP-Lab, 2005-2009)
- Mind the Gap between digital natives and educational practices (2011-2015)
- Laboratory of Co-design, Co-inquiry, Coteaching and Co-regulation (Co4-Lab, 2015- involve iterative efforts of 2019)
- Growing Mind: Personal, social, and institutional renewal at the digital age (Strategic Research, 2018-2023)

- Digital technologies and associated practices function as agents of educational change
- Research and development of technology-mediated learning environments by multi-disciplinary collaboration
- Design experiments that experimenting with innovative ways of learning and teaching at the field

Challenges of integrating digital technologies with educational practices

- After 20 years of efforts, digital technologies did not root as a part of Finnish schools.
- Digitalization of the matriculation examination changes the situation considerably
- Emerging socio-digital ecology (Mobile and wireless technologies, thousands of adaptable applications, new generation of teachers, and new institutional commitment
- Schools tend to reduce new (disruptive) innovations to ones sustaining their prevailing practices (research-practice partnership)



Educational innovations require systemic change that involves cultivating new practices of working with knowledge and media (knowledge practices)

Growing Mind: Personal, social, and institutional renewal at the digital age

(Strategic Research Programme of the Academy of Finland (2018-2023)

WP5. Promoting systemic educational transformations

- Research-practice partnerships for supporting school improvement
 - Professional development for supporting teachers' epistemic flexibility

WP1. Longitudinal development

- Learning, engagement, and socio-digital participation of 10/15 -years olds)
 - Impacts of digital activity on
- adolescents' brain functioning (risks and creative possibilities)

WP6. Co-creative interaction in

context of researcher-practice partnership

WP2. Growing Mind interventions

-Interventions empowering learning and development (growth mindset; grit, social belonging; peer learning, shared purposes)

WP4. Digital analytics for future learning

- Digital tools tracing personal and social learning processes
- Empowering learners to utilize learning data and formative assessment
- Assessing 21st century social learning in knowledge creating learning

WP3. Pedagogic innovations for epistemic flexibility

- Learning by making interventions based on scientific, engineering, design and entrepreneurial practices
 - Learning by gaming and game making

Multi-disciplinary network of educational research, craft science, developmental psychology, computer science, game studies, and neuroscience

Growing Mind consortium

- PI Kai Hakkarainen (education, University of Helsinki)
- Co-PI Erno Lehtinen (education, University of Turku)

Research partners:

- Kimmo Alho (Neuroscience, University of Helsinki)
- Tapio Salakoski (computer science, University of Turku
- Jari Lavonen (science education, University of Helsinki)
- Frans Mäyrä, game research, University of Tampere)
- Kirsti Lonka (interaction coordinator, University of Helsinki



Strategic Research Council of the Academy of Finland (Keys to sustainable growth program 2018-2023)

- Tiina Korhonen, Innokas network)
- Liisa Pohjolainen & Pasi Silander (Helsinki City Department of Education)
- Growing Mind Academic Network extending to all continents
- Growing Mind Business Network consisting of big and SMS enterprises and startups