How to engage the learner - and what is the role of technologies in innovative pedagogy?

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The structure of this presentation

1. Setting the Context: Teachers’ Academy
2. Mind the Gap – digital natives and educational practices
   
   *Your questions, a brief discussion*
3. Rym.fi - reconstructing the space
4. Some theoretical ideas:
   - Flow
   - Interest
5. New pedagogical models
   - engaging learning environment
   - flipped classroom
   - towards blended learning

*Your questions, discussion*
University of Helsinki invests in education

Late evening
In August, 2013

16.6.2014
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TEACHERS’ ACADEMY

provides opportunities to earn merit and reward members of the academic community for their teaching qualifications and expertise

In 2013, the 30 founding members were elected from all 12 faculties

In 2014, new 20 members were elected

http://www.helsinki.fi/opettajienakatemia/eng/index.html

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In general, we aim to

• promote the quality of teaching and improve its status in the academic community
• improve the quality of learning and learning results among students
• be an important step in an excellent teacher's career
• improve the status of teaching qualifications and create more comparable documentation
• provide a multidisciplinary community for teachers, that provides collegial support in the development of teaching and learning and promotes good practices at the University
We have an executive board that covers all the four campuses:

**President**

Kirsti Lonka,
Professor of Educational Psychology

**Vice Presidents**

City Centre Campus

Kumpula Campus

Vilkkki Campus

Meilahti Campus
We obviously share at least ONE COMMON PASSION:

Wordle.net – text source: http://www.helsinki.fi/opettajenakatemia/eng/academy_members.html
Mind the Gap Research Network funded by Academy of Finland Mind Program 2013-2016

Professor Kirsti Lonka (PI) & Co.
Educational psychology, University of Helsinki

Professor Kimmo Alho
Brain, attention and memory, University of Helsinki

Professor Katariina Salmela-Aro & Co.
Development and well being, University of Jyväskylä

Professor Kai Hakkarainen
Technology-mediated collaborative learning, University of Turku
Big science calls for creative collaboration

• Natural sciences involve complex equipment, laboratory work and socially distributed intelligent activity
• Physical spaces and external tools regulate our activities
• Knowledge practices are personal, social or institutional routines that are related to knowledge

How do our practices, tools and pedagogical models support deep-level learning in science and maths?

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Digital natives are assumed to have thoroughly intellectually socialized to use ICTs.

Digital immigrants, in contrast, use ICTs as weakly integrated external tools.
The generation of young people, who were born around 1990s, may be called "digital natives", since they were born together with Internet and mobile technologies (Prensky, 2005; 2012).

Typical knowledge practices for this generation are multi-tasking, reading from the screen, being fond of computer games, using social media extensively, and chatting.

Young people outsource many cognitive functions to different technological tools – this may unload your memory

- Digital natives (baby reading): http://www.youtube.com/watch?v=aXV-yaFmQNg
- Digital immigrants (medieval helpdesk): http://www.youtube.com/watch?v=pQHX-SjgQvQ
Putting students ideas in the centre

The “copernican revolution” that puts pupils’ ideas and products into the centre of educational activity.

Putting social practices to the centre

Technology enhances learning only through changed social practices

Knowledge Building approach

Knowledge-practice Approach

Technology-mediated collaborative learning
(Kai Hakkarainen, 2009)
Gap between diginatives’ and educational practices

**Diginatives’ practices**
- Flexible use of digimedia
- Multi tasking
- Intellectual ICT protheses
- Internet searches
- Working on screen
- Making and sharing in groups
- Extended networks
- Knowledge creation

**Educational practices**
- Traditional media
- Linear and sequential
- Pure mental performance
- Limited textbook content
- Paper and pencil
- Individual performance
- Closed classroom community
- Knowledge transmission

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Are there digital natives in Finland?

• Yes, but only a small part of the population.
• Real readiness for advanced use of technology appears to be quite rare among students.
• Our preliminary results from Finnish 6th graders in 2013 (n = 687)
  – Basic users (44%), below mean in all aspects
  – Social media users (23%), mostly only social media
  – Basic gamers (20%), typically mainly gaming, but less than active gamers
  – Active gamers (5%), mostly activity games, part of the gaming community
  – Creative participants (6%), advanced group in using technology, especially in creative activities

(by Lauri Hietajärvi, doctoral dissertation in progress)
Who liked school the most?

• Can you guess?
  – Basic users had little knowledge of technology – they liked school the most
  – Social media users expressed fears of failure
  – Basic gamers, active gamers and creative participants were the most advanced in using technology - they did not like school as much, also often expressed a cynical attitude
  – Social media users and creative participants reported fatigue – did they get enough sleep?
Your reflections?

- How to adjust the environment and create new knowledge practices? Or is it even necessary?
Also teacher students are digital natives – what about them?

www.indoorenvironment.org  rym.fi

New solutions for designing university spaces

Prof Kirsti Lonka et al. 2011-2015
WP4 Task 1.1 Learning Environments
UH, Aalto, HYKOY, SYKOY
DESIGNING SOCIETY THROUGH THINKING

PASSION TO LEARN

Adapting new ways of collective learning for better results.

UNIVERSITY OF HELSINKI
Active learning presupposes new knowledge practices

What is the knowledge practice here?

VS.

What is the nature of interaction here?

VS.
The History of Minerva Plaza in a nutshell

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Combining pedagogy and technology in Finnish teacher training

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Collaborative knowledge construction by using Flinga.fi
Blended learning environments combine physical, virtual, social, mobile and mental spaces of learning - beyond classroom!
THE FOUR-CHANNEL MODEL OF FLOW (Csikszentmihalyi, 1993)

- ANXIETY
- APATHY
- RELAXATION/BOREDOM
+ FLOW

CHALLENGE

COMPETENCE

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What is optimal motivational experience (flow)?

• High challenge combined with feeling of competence
• Engagement
• Absorption, loosing sense of time
• Promotes intellectual evolution
• Part of normal daily experience
Measuring optimal motivational states with CASS mobile apps
STUDENT EXPERIENCES (Muukkonen et al., 2008) – DATA COLLECTED BY USING A MOBILE PHONE SYSTEM (CASS)
A mathematical model of flow and affects
Positive affects vary as a function of flow (Inkinen et al, 2013)
Turning the classroom upside down

A timelapse video from Minerva Plaza – Engaging Learning environment for teacher education:

Vimeo.com/60818003
The four-phase model of interest  (Hidi & Renninger, 2006)

- **Situational interest (CATCH)**
  1. triggered
  2. maintained
- **Personal interest (HOLD)**
  3. emerging
  4. well developed
Developing new pedagogical models

(Lonka & Ahola, 1995; Lonka & Ketonen, 2012; Lonka, 2012)

Assessing change, deepening interest
– what new was created?
– what should be developed?

Diagnostic evaluation, feed forward

1. DIAGNOSE ACTIVATE

Activating and diagnosing, catching interest,
setting context and goals, starting the process.

2. FOSTER LEARNING

Fostering the learning process and reflective thinking, maintaining interest,
(face to face, P2P, virtually etc.), creating new knowledge or new practices

3. OBSERVE CHANGE

Fostering the learning process and reflective thinking, maintaining interest,
(face to face, P2P, virtually etc.), creating new knowledge or new practices

Feed forward

Diagnostic evaluation, feed forward

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FLIPPED CLASSROOM AND MOOC? WHAT ON EARTH

• Flipping classroom upside down by making used of social and technological (material) resources

• The valuable time we spend at school is not meant to be used for knowledge transmission

• Much more engaging to study contents in an engaging way and then elaborate on them and create knowledge in the classroom

• There is so much global knowledge and wisdom, easily accessible, that the teacher can focus on their basis task – fostering student learning!
Flipping Department of Mathematics upside down!
We are available for you, when you need help in problem solving!

These are your supervisors.
THIS IS NOT A HIGH-TECH SOLUTION 😊

You may develop knowledge practices that are not even expensive!
Pedagogical Models and Blended Learning Environments?

Research and theory

Pedagogical ICT Support, Learning Culture etc

Developing, testing and implementing new educational practices in a collaborative network

Agile learning environment http://vimeo.com/60818003

Motivated staff and empowered students
Vision for Future?

Pedagogical, P2P, F2F, virtual ja mobile combined.
Flexible physical spaces and variety of pedagogical scripts
Children have a role of an active agent, but the teacher is central actor in the process too
Teachers (and students and parents) collaboratively create new knowledge practices
Pedagogical leadership develops to support engaging learning solutions
Transgenerational and intercultural learning flourishes


Search by name Kirsti Lonka from Youtube, slideshare.net and visit vimeo.com/hufbs

Prof Kirsti Lonka
Enjoy the white nights in Finland!

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