Teaching and learning with ICT

Acknowledging diversity

Finland, 10-2013

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Research Centre for Quality of Learning
Today’s presentation

- Introducing CLC: Community Learning Centre
- Research on teaching and learning with ICT
  - Context: HAN university of applied sciences / teacher education
- Centre of Expertise Teaching & Learning with ICT
- iXPERIUM: collaborative lab
- Discussion
CLC: who are we?

- Community Learning Centre Arnhem
- 3 primary school boards Delta, Fluvius, Basis
- Faculty of Education HAN:
  - Primary teacher education
  - Research centre

*CLC is aimed at school development and educational innovation with a focus on the use of new technologies for learning, teaching and organizing.*

- Idea for collaboration
- Visits to England
- Business case
- Start CLC Arnhem 2010
- Start iXPERIUM as a collaborative lab in 2011
Development
teacher education

School development

iXPERIUM
research/innovation
/inspiration/staff
development

Infrastructure

Media coaches
HAN University of applied sciences

- App. 30,000 students & 3,000 staff members
- Two campuses in Arnhem and Nijmegen (15 km apart)
- Bachelors (65) and masters (21)
  - Economics
  - Engineering
  - IT and Communication
  - Health & Social Studies
  - Education
- 40 research groups & centres of expertise

www.han.nl
Faculty of Education

• B.Ed. Primary Teacher Education (two campuses)
• B.Ed. Lower Secondary (12-16) Teacher Education:
  Dutch, English, French, German
  Maths, Chemistry, Physics, Biology
  History, Geography, Economics
• M.Ed. Upper Secondary (16-19) Teacher Education:
  Dutch, English, Mathematics, Economics
• B. Ed. Training and Human Development studies

• Research Centre for Quality of Learning
• Centre of Expertise Learning and Teaching with ICT
Research in the Faculty of Education

• Since 2002: embedding research in higher professional education → universities of applied sciences
• Research Centre for Quality of Learning
• 8 professors, about 20 researchers and 8-10 PhD-researchers
• Practice-based research programme aimed at school development and development of teacher education
• Collaboration, teacher education, work field and research
• Research as part of major, minor and masters programmes
• Staff development in schools and in the faculty
Research Group Teaching & Learning with ICT

Integration of ICT and media in education in order to
→ enhance pupil learning
→ acknowledge diversity
→ teach for the 21st century

Practice based & design based research

Research questions:
- How can ICT enhance learning? (when, what, context, whom etc)
- How can we teach digital literacy?
- What competencies do teachers need?
- How can (student-)teachers develop these competencies?
- What conditions are needed in and around the school?
Learning and teaching with ICT

- Our educational system is under pressure: growing diversity in learner population, demands for excellence, more quality and more efficiency (lower cost)
  \(\rightarrow\) technology can enable diversity in learning routes, personalized learning and efficiency

- ICT influences our ways of communicating, gathering information and learning
  \(\rightarrow\) demands a redesign of pedagogical approaches

- Digital literacy as a foundation for 21\textsuperscript{st} century skills; there are huge differences between young people (the new digital divide)
  \(\rightarrow\) digital literacy as an educational goal
Media use of young people

<table>
<thead>
<tr>
<th></th>
<th>traditionalists</th>
<th>gamers</th>
<th>networkers</th>
<th>producers</th>
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</thead>
<tbody>
<tr>
<td>interacting (mail, www, sms)</td>
<td>x</td>
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<tr>
<td>exchanging (social media)</td>
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<td>playing (online, console)</td>
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<td>creating (media content)</td>
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Van den Beemt, 2010
<table>
<thead>
<tr>
<th></th>
<th>Primary education (N=640)</th>
<th>Lower secondary vocational education (VMBO) (N= 496)</th>
<th>Secondary education (HAVO/VWO) (N=679)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditionalists</td>
<td>16.7</td>
<td>33.8</td>
<td>41.6</td>
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<tr>
<td>Gamers</td>
<td>52.5</td>
<td>4.5</td>
<td>6.4</td>
</tr>
<tr>
<td>Networkers</td>
<td>24.7</td>
<td>52.0</td>
<td>46.5</td>
</tr>
<tr>
<td>Producers</td>
<td>6.1</td>
<td>9.7</td>
<td>5.6</td>
</tr>
</tbody>
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Van den Beemt, 2010
Why does ICT not lead to new practices?

• Teacher level:
  • a lack of pedagogical knowledge and skills
  • beliefs
  • (experienced) lack of time
  • lack of good practices, materials and evidence

• School level
  • a lack of shared vision about future education
  • no learning organisation
  • a lack of alignment
  • ‘one size fits all’,

• Teacher education level
Design principles

- Teacher (future teacher) as key performer
- Educating teachers so that they can bring about innovation and school development
- Research based and results-oriented
- Competencies and beliefs
- Ownership, concept driven
- Multidisciplinary teams
- Expansive learning (new practices, individual → collective)
- Boundary crossing (collective learning cross systems)
Centre of Expertise Learning and teaching with ICT
Key objectives and programme
Centre of Expertise Learning with ICT

- Developing education that facilitates diversity and meets the demands of individual learners with ICT
  1. Facilitating diversity in learning with ICT
  2. New models for school organization and scenario’s for organizational innovation

- To educate digital literate learners and workers for the 21st century knowledge society
  3. ICT-literacy as an educational goal

- Regional knowledge infrastructure involving education – teacher education - research
iXPERIUM: collaborative lab

Inspiration
Experimenting
Designing
Research

Learning Community
Location and methodology
iXPERIUM as a ‘changelab’
How does iXPERIUM work?

1. Practice-based question
2. Working hypothesis
3. Experience results
4. Research question
5. Design learning arrangement
6. Perform and research
7. Design requirements
   - question
   - context
8. Existing applications (Bespoke)
   New applications
Results

- Field-tested, pedagogical ict-based learning arrangements;
- Knowledge and examples about what works, for who and under which conditions.
- Teachers / teacher educators with the attitude and competencies to continually improve their practice, research-based by using new technologies;
- School improvement
- New insights for curricula of teacher education and professional development;
Research programme

Staff development, inspiration sessions, school visits

21st century teacher education:
- Redesign curriculum learning & teaching with ICT including teacher as designer and digital literacy
- Minor, Honoursprogramm
- Staff development teacher educators

Scaling up to secondary education, iXPERIUM Nijmegen
Dillemas

- Formulating the right questions
- Design competencies
- Quality of student-led research
- ‘Sense of urgency’ Teachers’ College
To learn more:

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www.ixperium.nl