Beyond Textbooks
Digital Learning Resources as Systemic Innovation in the Nordic Countries

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Aim of the study

Review the process of systemic innovation:

• How countries initiate ICT-based innovations related to DLR

• What factors influence the success of policies aimed at promoting such innovations

• Commercial and user-driven innovations related to DLR

• Comparative study involving Denmark, Finland, Iceland, Norway and Sweden
Methodology

• Background report from each country

• Review visit by experts

• Review report by experts

• Comparative and synthesis report
What is Digital Learning Resources?

Learning Resources

Text books

Dig. Text books

Digital Learning Resources
Definition of innovation

• "Innovation" is change introduced with the aim of improving the education system

• Radical or incremental innovations

• Innovation occurs on many levels – we studied the systemic level

• Four phases have been studied:
  - initiation phase,
  - implementation,
  - scale-up,
  - monitoring and evaluation
Main findings

- **Initiation phase**
  - Minimal involvement of stakeholders
  - Limited use of research

- **Implementation phase**
  - No use of pilots – instead incremental development
  - In comparison to VET – no organisational issues

- **Scale-up**
  - Marginal cost for one extra user close to zero
  - Sustainability key issue – easy to initiate DLR, more difficult to sustain
  - Several started with public funding but turned into commercial players (sometimes unwillingly)
Main findings

• Monitoring and evaluation
  • Monitoring done by web statistics, user feedback mostly non-systematically gathered and market statistics
  • Formal evaluations are rare

• Use of knowledge base
  • Little use of research and "explicit" knowledge (weak knowledge base)
  • Limited efforts by public and private players to strengthen the knowledge-base
  • Resulted in peer learning and policy borrowing
Enablers

• Political interest in ICT in education
  • High interest in all countries in mid 1990s
  • Faded in some countries, but remained strong in others

• National ICT and DLR policy

• Digital competence seen as key skill

• ”Digital commons”
### Political interest influences teacher’s motivation

<table>
<thead>
<tr>
<th>Country</th>
<th>Access</th>
<th>Competence</th>
<th>Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>71.3</td>
<td>93.3</td>
<td>70.9</td>
</tr>
<tr>
<td>Finland</td>
<td>63.3</td>
<td>84.9</td>
<td>57.8</td>
</tr>
<tr>
<td>Iceland</td>
<td>58.8</td>
<td>88.2</td>
<td>29.4</td>
</tr>
<tr>
<td>Norway</td>
<td>68.1</td>
<td>90.9</td>
<td>72.8</td>
</tr>
<tr>
<td>Sweden</td>
<td>67.9</td>
<td>93.3</td>
<td>41.4</td>
</tr>
<tr>
<td>EU 25+2</td>
<td>60.7</td>
<td>82.0</td>
<td>68.4</td>
</tr>
</tbody>
</table>

Source: Empiricia 2006
Enablers

• Political interest in ICT in education
  • High interest in all countries in mid 1990s
  • Faded in some countries, but remained strong in others (De, No)

• National ICT and DLR policy

• Digital competence seen as key skill

• "Digital commons"
Barriers

• Lack of resources

• Teachers lack of know-how on how to evaluate DLR

• Lack of overview of on-going innovation

• DLR cannibalizing on textbooks (?)
### Growth-Share matrix from BCG

<table>
<thead>
<tr>
<th>RELATIVE MARKET SHARE</th>
<th>RELATIVE GROWTH SHARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>HIGH</td>
</tr>
<tr>
<td>Stars</td>
<td>Question Marks</td>
</tr>
<tr>
<td>LOW</td>
<td>LOW</td>
</tr>
<tr>
<td>Caws Cows</td>
<td>Dogs</td>
</tr>
</tbody>
</table>

- Stars: High growth, high market share
- Question Marks: High growth, low market share
- Caws Cows: Low growth, high market share
- Dogs: Low growth, low market share
Drivers

• Effective demand from schools

• Public funding to development projects or as public tenders to publishers

• Intrapreneurs

• Information on available DLR

• Promote dialogue fora for stakeholders
Create enabling conditions

• Governments should:
  - Establish a coherent vision and strategic approaches to digital competence
  - Making publicly funded information freely available
  - Support the building up of a formal knowledge base
  - Facilitate access to DLR
  - Provide support services, e.g. uni-login, NORLOM…
  - Increase awareness among teachers
  - Initiate and maintain public debate on use of DLR and textbooks
  - Invest in training in fair use
Foster innovation

• Governments should
  • Supplement seed money with development and transition funds
  • Promote cooperation between public and private partners for DLR development
Being leaders of innovation

• Governments should:
  • Consider when to act as a leader or support others initiative?
  • Rethink governments role towards communities – ”delivery strategy” or ”engagement strategy”?
Conclusions

• Successful ICT-based innovations spread fast – individuals can have systemic impact

• Difficult to plan scale-up: end-users decide

• Limited knowledge-base is not a barrier (same with stakeholders) – but important to have peer learning and policy borrowing
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Soon at a web site close to you...

www.oecd.org/edu/systemicinnovation/dlr