



UNIVERSITY OF ICELAND
SCHOOL OF EDUCATION

OECD/CERI Digital learning resources as systemic innovation: some results from Iceland

http://www.oecd.org/document/47/0,3343,en_2649_35845581_38777391_1_1_1_1,00.html

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Structure of presentation

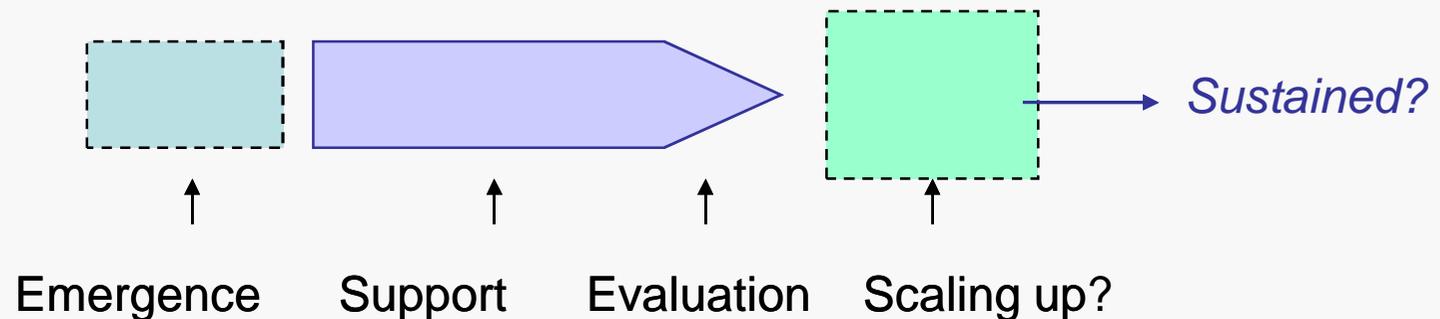
- The DLR project 2007-2009
 - Aim and definitions
 - Outline
- National policy
 - The Information Society
 - Developments in education
- Educational policy
 - ICT in the curriculum
- Examples of innovations
 - System-wide curriculum-related innovations
 - Innovations in digital resources for language learning
- Emerging issues

Aim – systemic innovation in education

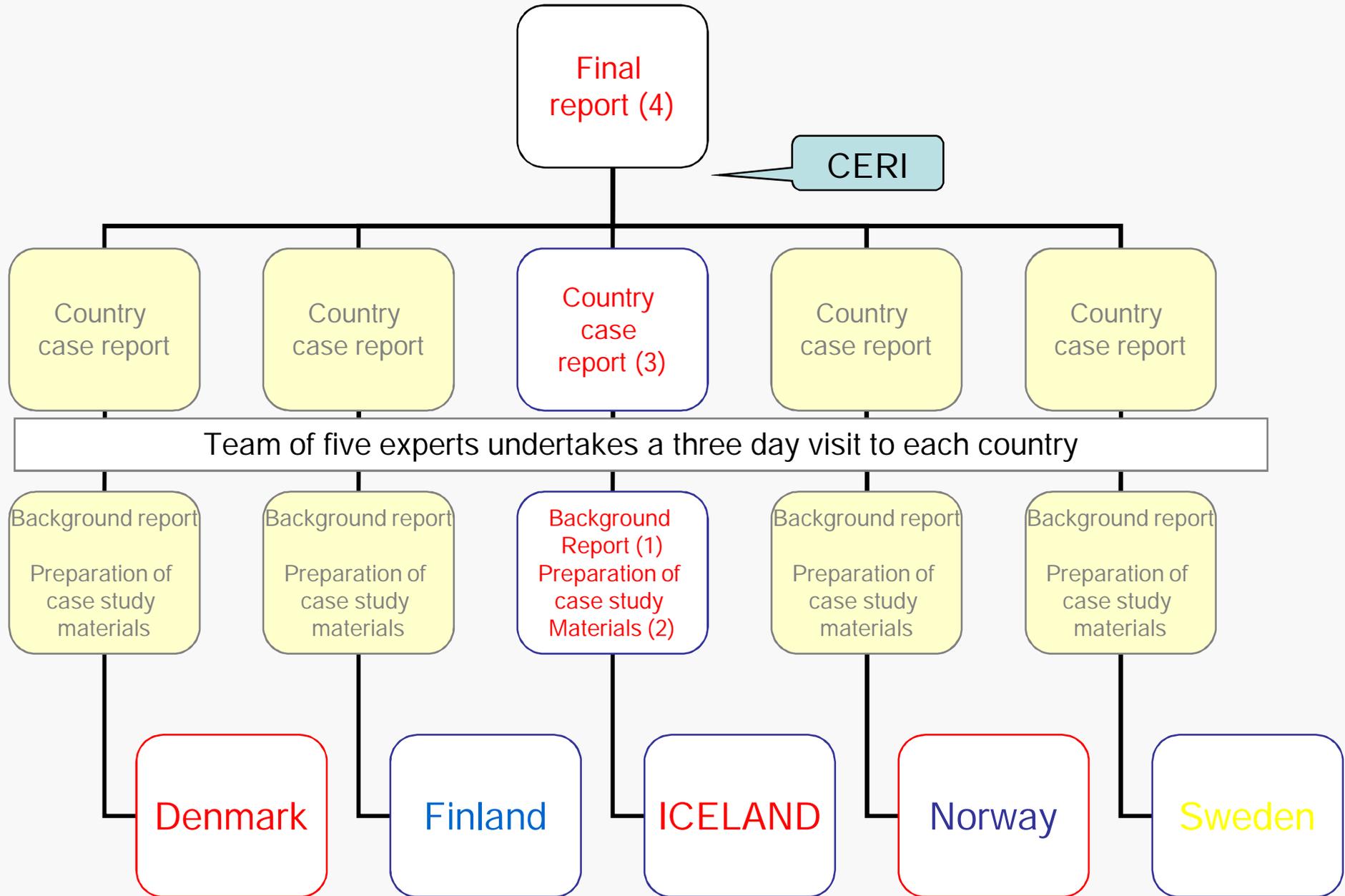
- The aim was
 - to review and evaluate the process of innovation involved in policies and public as well as private initiatives designed to promote the development, distribution and use of digital learning resources for the school sector.
- Systemic – where are innovations found in the system and why?
 - Top-down initiatives
 - Bottom-up initiatives
 - Interactions
- Compulsory school system (grades 1-10)

Digital learning resources and policies

- By “digital learning resources” we understand any digital resource that is **actually** used by teachers and learners *for the purpose of learning*.
- **Policies** can be designed to:
 - Promote the emergence of DLR innovations.
 - Support existing processes of DLR innovation.
 - Evaluate the impacts of DLR innovations.
 - Scale DLR innovations up.



Project on DLR as systemic innovation



DLR in Iceland

Project coordinators

- Sigurjón Mýrdal, Ministry of Education, Science and Culture
- Allyson Macdonald

Working group in Iceland

- Guðbjörg Sigurðardóttir, The Information Society, Office of the Prime Minister,
- Jóna Pálsdóttir, Ministry of Education, Science and Culture,
- Björg Pétursdóttir, Ministry of Education, Science and Culture,
- Sigurbjörg Jóhannesdóttir, Ministry of Education, Science and Culture,
- Sigurður Davíðsson. Ministry of Education, Science and Culture,
- Sólveig Jakobsdóttir, University of Iceland,
- Þuríður Jóhannsdóttir, University of Iceland.

Reports

1. Background report

- OECD/CERI project. Digital learning resources as systemic innovation. Background report. Iceland.
http://bella.stjr.is/utgafur/oecd_ceri_iceland_final_backg_report_des_2008.pdf

2. Case study information

- OECD/CERI project. Digital learning resources as systemic innovation. The Icelandic case studies. Background information. <http://bella.stjr.is/utgafur/.....>
(to be published on the Ministry site)

3. Country report (analysis of the Icelandic cases)

- OECD study on digital resources as systemic innovation: Country case study report on Iceland <http://www.oecd.org/dataoecd/10/7/41848715.pdf>

4. A synthesis report (all five countries)

- prepared by CERI brings together findings from all five countries, which will appear on the project website. CERI - Digital learning resources as systemic innovation. <http://www.oed.org> to be published by June 2009

Policies and strategies

The most commonly used policies or strategies are:

- Specific **programmes** mainly aimed at supporting DLR innovations by funding them or providing external support.
- **Agencies**, usually with a strong involvement both of the research and the professional community, which can provide an array of programmes, but work also as brokerage agents.
- **Networks** of DLR innovators, be these institutions, groups of educators or individuals.

Research questions

- What was the process for identifying key areas for DLR innovation and who was involved?
- How were bridges between stakeholders brokered to allow for exchange of knowledge and practice?
- What were the principal knowledge sources and types drawn on in preparing the DLR innovation?
- How was the process of DLR innovation development implemented?
- How was the process scaled up (e.g., from local to national/regional level)?
- What were the criteria used for evaluating the DLR innovation, and how were these applied?
- What were the positive and negative lessons learned, with respect to both process and outcomes?

The information society in Iceland 1

- *Vision of the Information Society, 1996*
 - From the Office of the Prime Minister
 - Driving spirit and openness to innovation
 - Cultural uniqueness
 - “The mission of education in the new type of society will therefore never be overestimated.”
 - Two key words: guidance (of government) and vigilance (of government)
 - Difficulties of remoteness and language and culture will be addressed by IT

The information society in Iceland 2

- *Iceland and the Information Society, 2003*
 - Status report
 - Policy from 1996 evaluated
 - Objectives had been met and funding used to good advantage
 - Need to create a taskforce to formulate a new policy

The information society in Iceland 3

- *Resources to serve everyone*
 - Policy 2004-2007
 - Four themes
 - Opportunity
 - Responsibility
 - Security
 - Quality of life
 - Less emphasis on the role of government cf. guidance and vigilance than earlier
- Information portal <http://island.is>

The information society in Iceland 4

Iceland the e-nation, 2008

- The policy builds on three pillars: *service, efficiency and progress*.
 - The service pillar - self-service for e-citizens, where on-line requests and information services are readily available.
 - Efficiency builds on the idea that data and not people should travel from one public body to another.
 - Competitiveness is linked to progress, building on innovation, research and education, which in turn must be supported through IT applications.
- Measures to be taken in education include:
 - Increasing the use of IT e.g. by supporting IT leaders in schools,
 - personalised online examinationa with an examination database, and
 - digital educational materials for compulsory and upper secondary schools.

Developments in education

Decentralisation – law from 1995

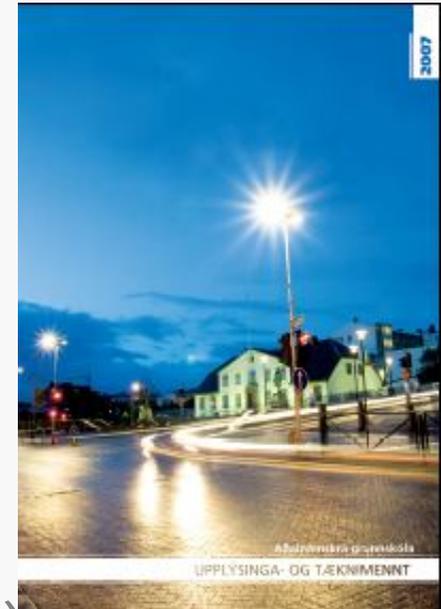
- Management of compulsory schools moved to local authorities in 1996
 - Effect on infrastructure – buildings and facilities
- School principals had increased professional responsibility for:
 - Continuing professional development plan
 - Self-evaluation scheme
 - Preparation of a school curriculum
- Curriculum materials still produced by National Centre for Educational Materials
 - Recently opened up avenues for competition

Education policies and ICT

- Emphasised in national policy since 1996
- Three policies on ICT in education
 - *The power of information* 1996-1999
 - Digital learning resources (software)
 - *A head start to the future* 2001-2003
 - Distance learning emphasised
 - *Risk with responsibility* 2005-2008
 - Digital content, ethics and safety, infrastructure, access

The national curriculum in ICT

- Previous editions
 - 1989 (2 pages on computer education)
 - 1999 (37/87 pages, one of twelve booklets)
- Major revision 1996-1999
 - Two new subjects – ITE and life-skills
 - ITE – Information and technology education
 - Information studies, innovation education, design and crafts
- Revision 2005-2007 (34 pages)
 - Design removed, much of the rest unchanged



General ICT situation in schools

- Typically one or two computer classrooms
- Often one to two computers per classroom
 - Not necessarily connected to the net
 - Data projectors still few in number
- In some schools teachers have laptops
 - Not all ICT teachers are ICT specialists
- In some schools
 - Laptop sets for use in whole class lessons
 - Workstations have been set up outside classrooms
- About 95% of homes with children have computers and about 85% are connected to the internet (highest in Europe)
- School curriculum varies between schools

Selection of cases for study

- National portal
- Innovations in digital resources for language learning or science or to reflect diversity
- Choice
 - System-wide curriculum-related innovations
 - Innovations in language learning

Examples - cases

NCEM
(national funding,
learning resources)

The Educational
Gateway
(national portal,
information,
resources)

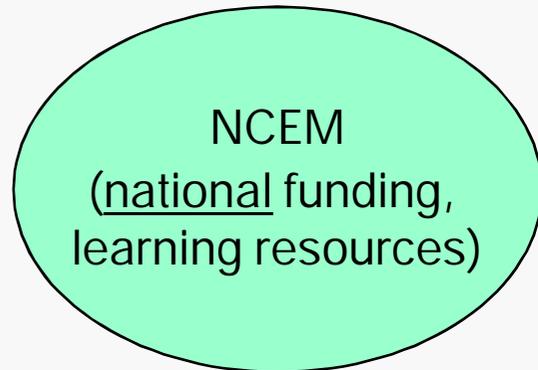
The School Web
(subscriptions,
resources)

The Language Studio
(Swedish, Norwegian,
English and more)

Katla
(language resources
for foreign students)

IceKids
(language resources
for Icelanders
living abroad)

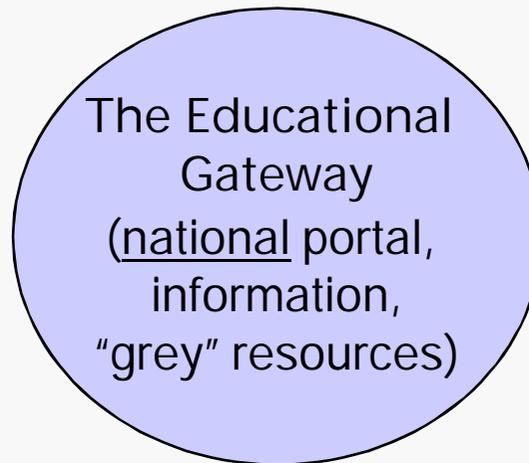
Digital learning resources Linked to the general curriculum



High quality, edited, often linked to printed materials

Disappointed with number of visits, but increasing

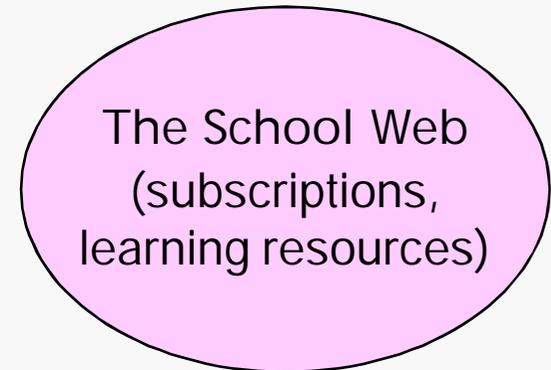
Built into policy since 1999; will face increasing competition



Some editing, not always linked to printed materials

Disappointed with number of visits, but increasing

Development – interest 😊, aligned with policy; out-sourced; not sustainable



Edited, not necessarily linked to printed materials

A large number of school subscribers, 4000 homes

Bottom-up development, then commercial; appears sustainable

Digital learning resources

Evaluation and knowledge base

NCEM
(national funding,
learning resources)

Some formal evaluation
from teachers by editors
and contracts

Professional development
of editors; attendance at
conferences

The Educational
Gateway
(national portal,
information,
"grey" resources)

Not much information
available for monitoring

Staff member works in a
private company

The School Web
(subscriptions,
learning resources)

Some evaluation in
schools, subscriptions
measure success

Contact with users is
considered important

Language and migration

Bottom-up; alignment with policy changes

The Language Studio
(Swedish, Norwegian,
English and more)

Started by a teacher
with secondary school
experience and
language skills

Housed within the system

Katla
(language resources
for foreign students)

Started by two teachers with
school experience

Response to changes in
schools/society in Iceland

IceKids
(language resources
for Icelanders
living abroad)

Project team both
technical and
educational

Response to increasing
interest in using the net

Development has relied on grants i.e.
indication of willingness of policy-makers

Summary

Information – evidence, feedback, evaluation

- Pilot projects are seldom used
- Research evidence is rarely used in development but new ideas are gathered at exhibitions, conferences or courses
- Feedback from or about users is important
- Formal evaluations are rare
- Issues of scaling up are not really relevant in Iceland and/or in DLR (cf. open source material)

Resources and commitment

- Funding characterised by grants rather than budget allocations
- The commitment of individuals has been crucial to innovation
- Development of DLR generally begins bottom-up though perhaps in alignment with policy and emerging practice

Emerging issue 1

- What types of learning can be justified in terms of investment?
- What sort of learning does the use of DLR encourage?
- What role does/could systemic innovation have in changing classroom practice?

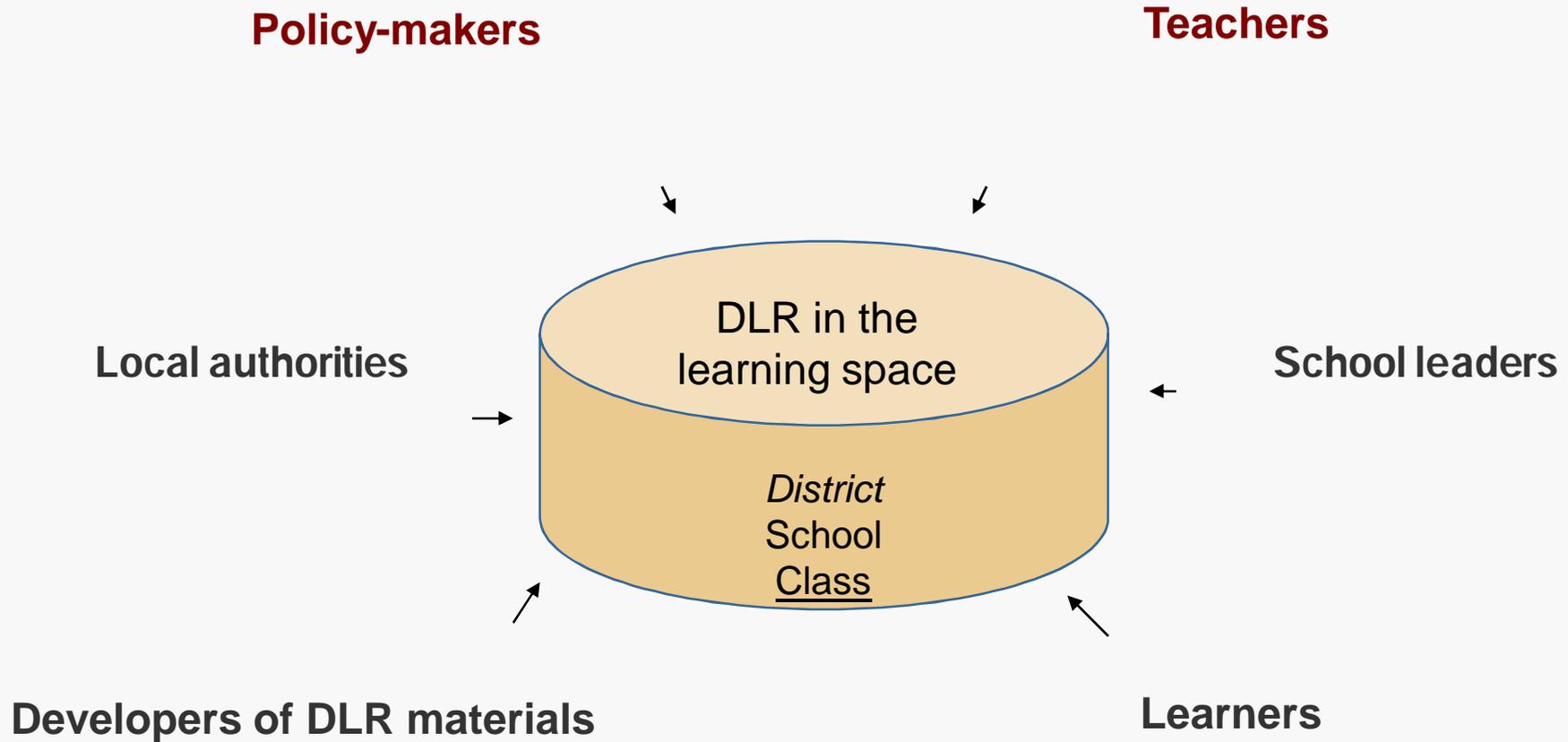
Innovation, learning and use of DLR

- Learning issue: for example, pdf or interactive?
- DLR for learning (Twining 2002)
 - Support; same content and process, could be more efficient but doesn't change the content
 - Extension: new content and process but not really necessary to use a computer
 - Transformation; new content or process but essential to use a computer; learning experience is transformed
- When can innovation support **transformation**?

Emerging issues 2

- What role does systemic innovation have in aligning policy and practice in schools?
- Where does/could development of DLR optimally arise?
- What forces operate in the learning space?

Competing forces in the learning space



Competing forces in the learning space

Policy-makers

Consider ICT to be fundamental to education and preparation for work; implementation support for DLR sporadic

Teachers

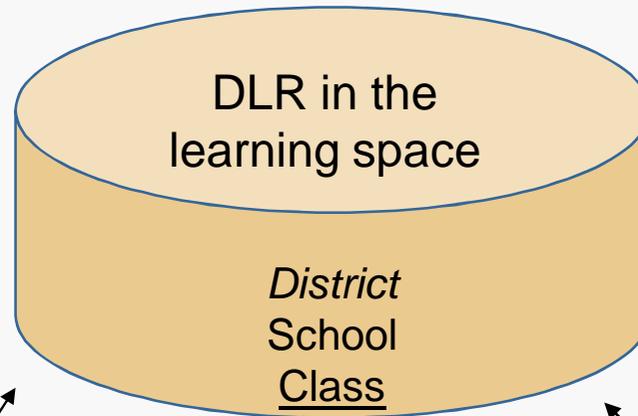
Many lack ICT expertise; May use ICT in preparation of lessons; May be difficult to use in ordinary classes

Local authorities

May support school development in ICT if schools/principals are willing

School leaders

Curriculum leadership matters; only some principals actively promote using ICT/DLR



Developers of DLR materials

Follow the national curriculum closely; variable standards; web-based material

Learners

Generally familiar with ICT; do not necessarily find ICT skills lessons motivating; DLR possibilities?

Emerging issues 3

- Are schools open or closed systems?
- How and why do schools resist or accept innovation?

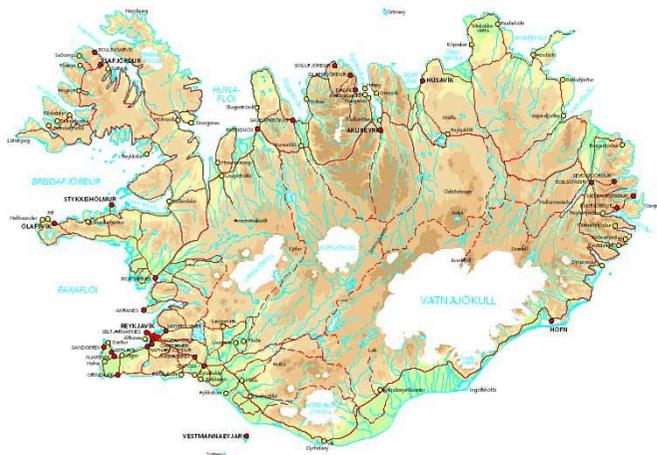
Schools and systemic innovation

- Schools find ways to resist innovation e.g. buffering, protection of core activity.
- School leaders have a key role in promoting (curricular) change.
- Alignment of instructional practice (discourse) with the dominant forms of (regulative) discourse.

Emerging issues 4

- The role of individuals in innovation – seems important in a small country
 - Sustainability of innovations vs a policy of competitive grants
 - Effects of decentralisation – where are the risks? Where are the responsibilities?
 - Aligning national policy with educational policy

Thank you!



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