Why is an important subject an unwelcome stranger in Icelandic compulsory schools?

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Creative and innovative thinking

• The world is changing rapidly
  – Social issues
  – Economic issues
    • Expansion and globalisation
    • Now the credit crunch
  – Sustainability

• Important skills
  – the skills to create your own identity and be an active participant in democratic society.

• Icelandic leaders praise creativity and innovation
• EU declared 2009 the year of creativity and innovation
Innovation education

In Iceland it is a school subject similar to ‘design and technology education’. A new subject in the curriculum in 1999 about:

• Inventing new objects or redesigning things that already exist
• Building for change to enhance and improve the conditions of social life
• Searching for needs that are important to students
  – Solve needs or problems
  – Find solutions that can become
    • Every day solutions, new designs, technological innovations or social innovations and business ideas.

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The purpose of this study

- To identify where innovation education is located within Icelandic compulsory schools
- Is innovation education to be found within or in relation to science, arts and crafts?
Method and data collection

• Main data gathering 2006 – 2007, additional data in spring 2008
• Interviews
  – Eighteen teachers in all
    • woodwork, science, arts, textiles and innovation (12)
  – Five administrators
  – Students – five focus groups
• Official documents
• Questionnaire about science, technology and innovation education (19 schools, 105 teachers)
Analysis

• Analysis of transcriptions, themes and issues identified

• Inductive
  – Constant comparison as data was gathered
  – Cross referencing emerging themes
  – Discourse analysis

• Deductive
  – Using Bernstein’s theories and concepts to understand and explain some of the data
The internal rules of the pedagogic device

- **Regulative discourse (RD)**
  - order, relation and identity
  - appropriate values for behaviour, conduct, ethics, manner, character and criteria of knowledge.

- **Instructional discourse (ID)**
  - competences relative to a given discipline
  Who controls
  - Selection, sequence, pacing and criteria of knowledge

- **RD is the dominant discourse**
  and produces *the order* in the ID

This is who we are – traditions in a subject or school – this is what we emphasize – these are the kind of students we want – the culture of a subject or a school

This is the kind of skills and knowledge our students should acquire – that is the way we arrange teaching to get this knowledge and skills across – in this order/sequence - and this is how we evaluate the knowledge and skills.
Bernstein´s concepts

- **Classification** – strong or weak
  - defines the construction of a social space (i.e. school subjects) – indication of power

- **Framing** – strong or weak
  - Who controls: the selection, sequencing, pacing, and criteria of knowledge and control over the social space (communication)

Framing is strong when the teacher has explicit control e.g. the pedagogic practice is visible. Weak framing is when the student has more control and pedagogic practice tends to be invisible.
Innovation education
weak classification and framing

• Classification weak
  – IE brings in elements of many subjects
  – IE can be a special subject and/or a method

• Weak framing
  – Students are expected to have a lot to say and have control over content and pacing and are considered specialists in their ideas
“Did you realise we changed the rules?”

- Two kinds of rules
- **Recognition rules**
  - understanding of “the rules of the game”
- **Realisation rules**
  - The ability to realise the necessary skills to produce the legitimate communication - to behave, write or speak correctly in a given context
Findings

Who teaches innovation education?

- Science and arts and crafts teachers do not generally include innovation education in their lessons
- Woodwork teachers – or so it seems to the administrators
  - Some teachers want more time and cooperation with other teachers in their schools
- Innovation education is seldom found, is limited in scope, is not found in school policies, and is unfocused and generally unknown
  - It seems to be “someone else's business”!
Distribution of classification and framing in IE by different teachers

Kiera

Sedna

Paul

Gunnar

Hanna

Sunny

Sigurdur

Runa

Anna

Rosa

Hanna

Gunnar

Sunny

Sigurdur

Runa

Anna

Rosa

Kiera

28.11.2008

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Two teachers with weak classification and framing

• They mix science and innovation education
  – IE as a subject with a focus on science
  – IE as a tool in science itself
• Kiera – in a small rural school
  – Flexibility is a characteristic of the RD
  – Children have a lot to say about selection, sequence and pace
• Rosa – in a large urban school
  – Environment more restrictive e.g. timetable
  – Children control selection and sequence but have less influence on pace
Attitudes towards and presentation of innovation education

• Attitudes of teachers influence how innovation education is offered
• School culture can also influence how innovation education is offered
• Holistic and integrating views (arising from weak classification and framing) most supportive
Students’ views

• Some have no experience of IE, not familiar with the concept/approach
• Those who know it usually enjoy it but it depends on the teacher
• Students
  – Want more hands-on, less paperwork
  – See it as a subject that integrates “everything”
    “It was arts and crafts, it was just related to everything, it was related to technology, science and mathematics, it was related to arts and woodwork, just all in one.”
Why is innovation education so “patchy”?

• Teachers and administrators lack knowledge of IE
  – Teachers lack skills for teaching IE
  – Teachers call for support and cooperation from administrators and other colleagues
  – IE needs time and enthusiasm (the right kind of attitude)

• Strong classification and strong framing is inhibiting
  – Teachers seem to prefer strong classification and strong framing
Why is innovation education so “patchy”? 

- The ability and views to override strong classification and framing (integrate, mix and co-construct) is supportive of a weakly classified and framed ‘innovation education’.
  
  - IE needs this holistic view.

  - The different recognition and realisation rules needed for IE need to be created and supported at different levels.
What is the way forward?

• Now what?
• Can we deliver IE through the system teachers know and are comfortable with?
• Do teachers and administrators in general (students and the public) need a special introduction to the ideology and approaches of IE? Does it matter?
  – influences of classification and framing and their role in IE
• Should we include IE in education for all teachers and as a specialisation? (similar to NZ in technology education)