National policy and R&D activities in Norway

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Outline

• **ICT National Policy in Norwegian Education - The Knowledge Promotion Reform**

• **The Norwegian Centre for ICT in Education**

• **The Monitor study– ICT in Norwegian schools**

• **Other R&D activities**
**The knowledge promotion reform**

- The latest reform regarding the education sector, from 2006.
- It introduces certain changes in substance, structure and organization in the 10-year compulsory school to the last grade in upper secondary education and training.
ICT – one of five basic skills

The ability to use Information and communication technology (ICT) became one of the five basic competences (skills) required in Norwegian schools.

These basic skills are:
1. The ability to express oneself orally,
2. The ability to read,
3. The ability to do arithmetic,
4. The ability to express oneself in writing,
5. The ability to make use of ICT.

These skills are described through competence aims in the curriculum
We have enough access and tools but what about digital literacy/competence?
The Norwegian Centre for ICT in Education

- Our main goals are to improve the quality of education and to improve learning outcomes and learning for children, pupils and students through use of ICT in education.

- An important task is to contribute to enhanced digital competence for students and teachers regardless of social background and residence.
**Monitor – a longitudinal study**

- Conducted every other year 2003-2011
- Questionnaires sent to 500 schools
- School leaders, teachers and learners in grade 7, 9 and 12
- Supplemented with a qualitative study
<table>
<thead>
<tr>
<th>Operational use of ICT</th>
<th>Digital information handling</th>
<th>Digital production</th>
<th>Digital judgment</th>
<th>Digital communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be able to use digital equipment, software and data safely and secure. Fostering of typing proficiency</td>
<td>Be able to use digital tools, media and resources to search for navigate and interpret digital information appropriate and critically</td>
<td>Be able to use digital tools, media and resources to put together, remix and develop digital elements into products like multimodal texts.</td>
<td>Be able to use digital tools, media and resources safely and to have a clear understanding of privacy and ethical use of Internet.</td>
<td>Be able to use digital tools, media and resources to collaborate in learning, self-representation on the Internet and presentation of knowledge and skills to different audiences.</td>
</tr>
</tbody>
</table>
Main findings

- Major differences between schools, teachers, and pupils
- Differences in perceptions of reality (SL vs Tch)
- New indicators for infrastructure and quality of use needed
- Usage measured in time less interesting than usage patterns and motivation
## Quality of computers

<table>
<thead>
<tr>
<th>Agrees to statements about the school’s computers</th>
<th>7. grade</th>
<th>9. grade</th>
<th>12. grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>The computers startup time is fast</td>
<td>48 %</td>
<td>36 %</td>
<td>44 %</td>
</tr>
<tr>
<td>The computers have equally good software as I’m used to from home</td>
<td>37 %</td>
<td>26 %</td>
<td>46 %</td>
</tr>
<tr>
<td>The computers are well suited for making presentations</td>
<td>85 %</td>
<td>73 %</td>
<td>80 %</td>
</tr>
<tr>
<td>The computers are well suited to edit movies</td>
<td>50 %</td>
<td>26 %</td>
<td>46 %</td>
</tr>
<tr>
<td>The computers are fast enough on the Internet</td>
<td>61 %</td>
<td>44 %</td>
<td>62 %</td>
</tr>
</tbody>
</table>
Trends in time used with computers at school

- 4 hours or more per week
Trends in time use (subject: Norwegian).
## Attitudes towards use of ICT at school

<table>
<thead>
<tr>
<th>Agrees</th>
<th>7. grade</th>
<th>9. grade</th>
<th>12. grad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers are useful for learning subjects</td>
<td>94 %</td>
<td>92 %</td>
<td>93 %</td>
</tr>
<tr>
<td>Using computers makes it more easy to learn subject content</td>
<td>89 %</td>
<td>87 %</td>
<td>85 %</td>
</tr>
<tr>
<td>Computers are disturbing at school</td>
<td>12 %</td>
<td>18 %</td>
<td>45 %</td>
</tr>
</tbody>
</table>
Teachers
Time used for teaching purposes. 4 hours or more per week
## Attitudes towards ICT in teachers' teaching practice

<table>
<thead>
<tr>
<th>agrees</th>
<th>7. grade</th>
<th>9. grade</th>
<th>12. grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>In my experience, ICT adds variation to my teaching</td>
<td>98 %</td>
<td>95 %</td>
<td>88 %</td>
</tr>
<tr>
<td>It is more easy to differentiate between pupils when I’m using ICT</td>
<td>89 %</td>
<td>83 %</td>
<td>74 %</td>
</tr>
<tr>
<td>I use ICT to stimulate the pupils’ curiousness for subject learning</td>
<td>95 %</td>
<td>94 %</td>
<td>87 %</td>
</tr>
<tr>
<td>It is more easier to activate the pupils when using ICT</td>
<td>91 %</td>
<td>83 %</td>
<td>80 %</td>
</tr>
<tr>
<td>It is consuming to use ICT in my own teaching practice</td>
<td>62 %</td>
<td>66 %</td>
<td>51 %</td>
</tr>
</tbody>
</table>
Different types of CPD activities and percentage of teachers that agree that it had effect on their ICT skills/competence

<table>
<thead>
<tr>
<th></th>
<th>External courses</th>
<th>Internal courses</th>
<th>Trial and error</th>
<th>Peer learning</th>
<th>Selfstudy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 12</td>
<td>29 %</td>
<td>31 %</td>
<td>92 %</td>
<td>58 %</td>
<td>95 %</td>
</tr>
<tr>
<td>Grade 9</td>
<td>31 %</td>
<td>39 %</td>
<td>99 %</td>
<td>65 %</td>
<td>91 %</td>
</tr>
<tr>
<td>Grade 7</td>
<td>32 %</td>
<td>34 %</td>
<td>91 %</td>
<td>50 %</td>
<td>85 %</td>
</tr>
</tbody>
</table>
Main findings

- Teachers are positive to ICT use
- More time spent with computers
- ICT helps differentiate and motivate students
- Lack of pedagogical support
Priorities of resources (lower secondary school)
Teachers’ CPD and use of Internet

Ved vår skole har vi gjennomført kompetanseheving knyttet til bruk av Internett i undervisning og læring

- Videregående skole:
  - Helt enig: 52%
  - Delvis enig: 39%
  - Delvis uenig: 9%

- Kombinert skole:
  - Helt enig: 22%
  - Delvis enig: 37%
  - Delvis uenig: 23%
  - Helt uenig: 12%

- Ungdomsskole:
  - Helt enig: 31%
  - Delvis enig: 45%
  - Delvis uenig: 20%

- Barneskole:
  - Helt enig: 18%
  - Delvis enig: 46%
  - Delvis uenig: 22%
  - Helt uenig: 10%
  - Vet ikke:
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