Norway

Country Report on ICT in Education

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1 THE EDUCATION CONTEXT

1.1 EDUCATION REFORM

New national curriculum

Knowledge Promotion is the latest reform in 10-year compulsory schooling and upper secondary education and training. It was set up in the autumn of 2006 and introduces certain changes in content, structure and organisation. The aim of this reform is to help all pupils to develop fundamental skills that will enable them to participate actively in the knowledge society. The following are the most important changes in the Norwegian school system that stem from the Knowledge Promotion reform:

- Basic skills are to be strengthened;
- Reading and writing are emphasised from the first grade;
- New subject syllabuses in all subjects, clearly indicating what pupils and apprentices are expected to learn;
- New distribution of teacher hours per subject;
- New structure of available choices within education programmes;
- Freedom at the local level with respect to methods, teaching materials and the organisation of classroom instruction. Local freedom also with respect to distribution of lessons and topics within and among subjects.
- Knowledge Promotion is first and foremost a curriculum reform, but should also be regarded as a more comprehensive shift in education policy.

National assessment system

As part of the education reform, a national quality assessment system is being established with the aim of improving the quality of education. It will be the most important instrument for quality development in basic education, based on systematic assessment and analysis of input, process and output factors. Relevant elements of the national quality assessment system are: pupil’s achievement, school resources and the learning environment, information transparency and accountability in order to make information available to schools, local and central authorities.

http://www.udir.no/skoleporten.

The Government will also have a stronger focus on quality and making municipalities and counties better at developing a good education system. In fact, another important objective is to turn schools into learning organisations. The Directorate for Education and Training is responsible for the national quality assessment system. It has the overall responsibility for supervising and supporting all school owners in their work with quality development. Its main tasks are: assessment and analysis; development, guidance and support; supervision and administration.

Revised teacher education programme

The Government is proposing a new teacher education programme for primary and lower secondary education with a stronger emphasis on subject knowledge and teaching skills, quality of studies and research orientation. Its principal elements are as follows:

- Two equal programmes geared to the different levels of schooling (primary and lower secondary)
- Pedagogy and pupil-related skills (PPS) – a new, expanded educational science subject
- Improved quality of practical training
- Mentoring for all newly qualified teachers
- Increased recruitment – new paths to the teaching profession
- Centres of teaching excellence
- National research school

School management training for headmasters

In order to strengthen the headmasters’ management and leadership competence, several education institutions are offering training for newly employed headmasters, and in time, for more experienced headmasters who lack this kind of education. The Directorate for Education and Training funds and coordinates this programme.

1.2 KEY CHALLENGES /PRIORITY FOR EDUCATION

The Government emphasises early intervention as a main strategy to ensure high educational quality for everyone, and to prevent dropout. This entails both intervening at an early age and taking action at an early stage when problems arise during the course of
the education. As bullying seems to have increased over the last few years, new initiatives are being taken to deal with this situation. Another related problem concerns discipline and lack of efficiency in learning. Classroom leadership is seen as an important area of effort for all these problems. Finally, programmes for school leadership and improved teacher training should be mentioned.

2. ICT POLICY

2.1. RESPONSIBILITIES

The Ministry of Education and Research has the overall responsibility for administering the educational system and for implementing national educational policy. The Directorate for Education and Training is the executive organ of the Ministry and is responsible for the development of primary and secondary education.

In each of Norway's 19 counties, the County Governor represents the central government at regional level, contributing to the implementation of national education policies in schools on all levels. The County Governor ensures that appropriate schooling is provided for young people in compliance with regulations, also ensuring the provision of adequate adult education facilities. Municipalities are responsible for the running and administration of primary and lower secondary schools, while counties are in charge of upper secondary school administration. In January 2010 a new agency, the Norwegian Centre for ICT in Education, was established. This is a merger of the Network for IT-Research and Competence in Education (ITU), Utdanning.no, and Uninett ABC. Some of the responsibilities of the Directorate for Education and Training have also been transferred to the new agency. The centre is intended to play an important role in research, networking, development of various services and policy-making³.

2.2. ICT POLICIES FOR SCHOOLS

In the new national curriculum, digital literacy is defined as a basic skill, and because the national curriculum is regarded a legal directive, it becomes the most important ICT policy for schools. The Knowledge Promotion defines goals generally and specifically in each subject and for each key stage. Key stages are defined after year two, four, seven and ten thirteen. As understood in the Norwegian national curricula, the use of digital tools also includes the skills to apply critical assessment and use of sources, exercising digital judgment.

There are government initiatives regarding digital exams and tests, as well as initiatives on eSafety. These are described in more detail in another section of this document. There are also a number of local initiatives. However, the Government's policy is to reduce the number of national strategies. Instead, a number of National Centres have been established and given responsibility for developing initiatives in various areas of the education system. As mentioned, at the start of 2010 a Norwegian Centre for ICT was also established.

2.3. ICT PRIORITIES

³ Sources: http://odin.dep.no/kd/
http://www.udtanningsdirektoratet.no
http://www.iksenteret.no
3. THE CURRICULUM AND ICT

3.1. THE CURRICULUM FRAMEWORK

The national curriculum is issued as a directive and is a legal obligation for local authorities, schools and teachers all over the country. However, there is room for individual choice and adaptation regarding methods and activities. For each subject the learning goals and the annual numbers of lessons are well defined, but with scope for local adaptation. A school curriculum adapted from the national curriculum and based on local authority priorities is the operative document from which most other plans derive. Typically, the school curriculum has detailed descriptions of learning goals, methods, teaching materials and evaluation.

3.2. ICT IN THE CURRICULUM

ICT in the Norwegian curriculum is defined as “the ability to make use of information and communication technology”, and is one of five basic skills together with the abilities to read, write, perform basic mathematical operations and express oneself orally. Through this the Ministry of Education and Research has placed a strong emphasis on ICT as part of learning activities in schools. ICT should be an integrated part of learning activities among all students, at all levels of primary and secondary education and in all subjects. The actual implementation of ICT for the promotion of learning differs between syllabuses. The major change from former plans on ICT in education is the specific educational use of ICT in different subjects, often with specific learning goals for digital literacy itself.

3.3. STUDENTS’ ICT COMPETENCE

Targets set for students’ ICT competence are mainly related to the use of digital tools and information assessment and management skills. In the national curriculum the use of various digital tools like word processor, spreadsheet and presentation applications is, together with the use of the internet, the most frequently mentioned targets. In addition, digital tools in subjects like arts and craft, music and science are emphasised. Legal and ethical topics related to intellectual property rights and source criticism are also to some extent included in the national curriculum. Though not well defined in the national curriculum, eSafety is an important target defined in other policy documents.

3.4. ASSESSMENT SCHEME

As ICT is an important element in most subjects, ICT-related skills are assessed through tests and exams in the traditional school subjects. There is no separate national test or exam on ICT skills, but a few local initiatives has been taken in this regard. In Oslo and Bergen (the two largest cities in Norway), a test for assessing ICT skills has been established. This test is in its form quite similar to the national tests in the subjects Norwegian, English and mathematics, and there is an ongoing debate about making this an obligatory national test. A new national regulation related to assessment was issued in August 2009, and a more formalised system for evaluation and assessment is now in place. This system includes ICT as a basic skill.

3.5. ICT BASED ASSESSMENT

For the last few years computer-based exams have been an option for the final examination after year ten. In addition, some use of ICT has been obligatory independently of the choice of “analogue” or digital exam. This includes the use of spreadsheets and the internet. Digital exams are likely to replace the analogue ones within a few years. In addition to traditional exams, national tests in Norwegian, English and mathematics
are carried out yearly. These tests are digital. A common administration system organises all students’ data and tasks for traditional and digital exams and national tests. A yearly digital survey on the learning environment has also been established. This survey targets students, teachers and parents.

3.6. QUALITY ASSURANCE OF THE USE OF ICT IN SCHOOLS

In the Norwegian education system it is regarded a local responsibility to ensure high quality in education and to stimulate progression. Central authorities control quality and progress to a certain extent, but the focus has so far been primarily on special education. Through a national portal, www.skoleporten.no, key information about each school is collected and presented. A few variables on ICT tools are included, i.e. number of pupils per PC and connectivity.

Based on the British self-review framework on the use of ICT in schools\(^2\), an online tool is provided for schools where they can evaluate their achievement and status within six areas of ICT. ITU Mentor (www.itumentor.no) was launched in the late autumn of 2008. It is hoped that the service will help schools improve their “e-maturity”, and in this way achieve better standards in ICT.

4. DIGITAL LEARNING RESOURCES AND SERVICE

4.1. CONTENT DEVELOPMENT STRATEGIES

The Ministry of Education as a rule provides funding to local authorities (school owners), enabling them to choose and purchase learning resources and content freely. The aim is to contribute to a functioning market for learning content. However, the Ministry (through the Directorate for Education and Training) does fund the development of learning resources in those cases where the market is too small to sustain commercial development. This mainly concerns small subject areas in vocational education, minority languages and special needs education.

The Knowledge Promotion reform introduces the use of digital tools as one of five basic skills to be implemented across all subjects and levels. Also, as of the 2009-2010 school year, all pupils in upper secondary education are entitled to free learning resources. In connection with this, the Ministry has supported some development of digital learning resources to ensure an adequate supply (see below).

4.2. E-CONTENT DEVELOPMENT

As part of the strategy for implementing the Knowledge Promotion reform, a three-year plan for funding an upgrade of learning resources was set up. Schools can freely choose among available analogue and digital resources. Most municipalities have added local funding in this period.

For upper secondary school, eighteen of the nineteen county authorities (all except Oslo) have come together to establish a digital learning resource portal, NDLA (National Digital Learning Arena). The counties fund the initiative by allocating a portion of the funds they receive to provide pupils with learning resources free of charge. In addition, the Ministry has allocated funds for the development of a technical platform as well as learning resources. Some of the Ministry funds are earmarked for purchasing commercial content for the portal. The remainder of the resources are developed by teachers and moderated by universities and colleges. The content provided is freely available to all. NDLA aims at providing high quality digital learning resources in all upper secondary subjects, but there is still a long way to go before this goal is achieved.

4.3. USER-GENERATED CONTENT

There are few widely used resources of this kind. Different projects around the country do have an impact at local level, but on national level there are few to point out.

4.4. WEB 2.0

There are some initiatives based on Web 2.0 technology; a site for stimulating content sharing is one example, http://delogbruk.no (Norwegian only). There is no

\(^2\) http://schools.becta.org.uk/index.php?section=srf
national initiative that addresses the use of Web 2.0 technology in teaching or education.

4.5. CONTENT SHARING

There are two national education portals: http://skolenettet.no for primary and secondary education and http://utdanning.no for the entire education sector. Both portals collect, index and make available digital content for schools. The National Digital Learning Arena (NDLA) initiative, described in more detail above, provides learning resources for some central subjects in upper secondary school. The resources are freely available to all.

The two main national broadcasting companies, NRK and TV2, both offer digital content aimed at the education sector. NRK is the state broadcasting company. Its resources consist of historical and contemporary video and audio clips linked to curriculum goals, and are freely available at http://nrk.no/skole. This service is developed with public funding. TV2’s service allows for content from TV2 to be integrated in the “it’s learning” learning platform. This is a commercial service which can be found at http://skole.tv2.no.

Diglib (http://www.diglib.no) is a content portal developed in cooperation between the learning platform it’s learning and several leading publishers. Their ambition is to create a viable commercial solution for simple access to digital learning resources, and to simplify the distribution of digital learning content for primary, secondary and higher education. The portal’s distribution solution can be accessed by all content vendors and learning platforms.

FEIDE (Common Electronic Identity) is one important initiative related to content sharing. This project sets out to implement a system for identity management and single sign-on for the entire educational system. The project is about halfway through its implementation phase. Once completed, FEIDE will enable students to easily access available learning resources and other school-related sites.

Through EUN-projects like Calibrate and Celebrate, digital learning resources have been made available to other European countries. At the moment, Norway participates in the Learning Resource Exchange project, eQNet, which targets the use of digital content across borders. The project also evaluates resources from the different national initiatives to find “resources that travel well” and if possible add these to the LRE.

4.6. LEARNING PLATFORMS

Almost all schools, both in primary and secondary school, use a learning platform. The most widely used platforms by far, are Fronter and it’s learning. Microsoft’s Learning Gateway and Pedl have smaller shares of the market. Although they are well developed systems, digital learning platforms have limitations and bottlenecks that hinder use. Transport of information and resources in a simple, yet safe, manner is a challenge that applies to all systems. Security has been criticised by some relevant authorities, although security within the systems has improved over time.

5. TEACHER EDUCATION FOR ICT

5.1. ICT COMPETENCE TARGETS

There are targets set for ICT competence for teachers related to use in subjects. There is no standard or target aiming at teachers’ overall competence.

5.2. ASSESSMENT SCHEMES

There is no assessment or accreditation scheme for teachers’ ICT competence.

5.3. ICT IN TEACHER EDUCATION

ICT is not taught as a separate subject in initial teacher education, but should be integrated in relevant subjects. Schools as well as authorities have expressed concern that ICT is not sufficiently integrated in initial teacher training, and that newly educated teachers lack the ICT competence they need for working in schools. A revised curriculum framework for initial teacher training is currently being developed. It is hoped that the revised framework will address this challenge.

There is no compulsory in-service training for teachers. Nearly all in-service training is initiated locally and provided by universities, colleges or private companies on a commercial basis. There are courses on the pedagogical use of ICT available both as e-learning/blended learning and traditional courses, but
how much and what kind of training a teacher receives varies greatly and depends on local priorities and choices.

5.4. TRAINING THE TEACHER TRAINERS

Teacher education is still struggling to adjust to the new national curriculum and the use of digital tools as a basic skill in all subjects. It is likely that the training of teacher trainers in digital literacy will improve as institutions adapt to the national curriculum. Today, the training provided for teacher trainers differs between institutions, and it is difficult to make general comments.

5.5. INCENTIVES

The most important incentive is the national curriculum, which includes digital literacy as one of five basic skills. This makes it compulsory for teachers of all subjects and levels to integrate ICT in their teaching. There are a number of government-initiated as well as private websites and services directed at teachers, providing inspiration, ideas and support. The newly established Norwegian Centre for ICT in Education will have a central role in developing incentives and resources for motivating teachers and schools to integrate ICT in their work.

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