The Netherlands
ICT in Education - Country Report
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# TABLE OF CONTENTS

1 THE EDUCATION CONTEXT ................................................................................................................................. 1
   1.1 Education Reform .......................................................................................................................................... 1
   1.2 Key challenges / priorities for education ...................................................................................................... 1

2. ICT POLICY ..................................................................................................................................................... 1
   2.1 Responsibilities .......................................................................................................................................... 1
   2.2 ICT policies for schools ................................................................................................................................. 2
   2.3 ICT priorities .............................................................................................................................................. 3

3. THE CURRICULUM AND ICT .......................................................................................................................... 3
   3.1 The curriculum framework ............................................................................................................................ 3
   3.2 ICT in the curriculum .................................................................................................................................... 3
   3.3 Students’ ICT competence ............................................................................................................................. 4
   3.4 Assessment scheme ...................................................................................................................................... 4
   3.5 ICT based assessment .................................................................................................................................. 4
   3.6 Quality assurance of the use of ICT in schools ............................................................................................ 4

4. DIGITAL LEARNING RESOURCES AND SERVICE ....................................................................................... 5
   4.1 Content development strategies .................................................................................................................. 5
   4.2 E-content development ................................................................................................................................ 5
   4.3 User - generated content ............................................................................................................................... 5
   4.4 Web 2.0 ...................................................................................................................................................... 5
   4.5 Content sharing .......................................................................................................................................... 6
   4.6 Learning Platforms ..................................................................................................................................... 6

5. TEACHER EDUCATION FOR ICT .................................................................................................................. 6
   5.1 ICT competence targets ................................................................................................................................. 6
   5.2 Assessment Schemes .................................................................................................................................... 6
   5.3 ICT in teacher education ............................................................................................................................... 6
   5.4 Training the Teacher Trainers ........................................................................................................................ 6
   5.5 Incentives .................................................................................................................................................... 7

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1 THE EDUCATION CONTEXT

1.1 EDUCATION REFORM
Dutch national education policy for 2007-2011 consists of policy plans that are formulated together with sector organizations. Compared with the previous period, the major educational changes are:

**Curriculum reforms**

In the Netherlands there is no national curriculum. The structures as well as the content of school curricula are the responsibility of the schools themselves. The Ministry of Education, Culture and Science only sets the final objectives students should achieve. At national level it has been agreed that in the future schools need to modify their curriculum due to the changing population of students, representing a broader ethnic diversity. New curricula should include lessons for “citizenship”, as well as an increased focus on language and mathematics. Schools are also asked to develop excellence programmes for students with high potential.

**Institutional reforms**

Since 2007, Dutch education policy has been the result of a process of increased collaboration within the field of education as represented by sector organizations. The national government makes policy and budget agreements with these organizations according to the formulated sector policy plans. Sector organizations also take the lead in proposing innovative initiatives to reform education in the Netherlands.

**Reforms affecting teachers**

Due to the growing shortage of teachers in primary and secondary education in the last few years, in 2008 the Dutch Ministry of Education signed a covenant, “Teacher of the Netherlands”, which proposes measures to improve the working conditions and remuneration of teachers. More services are offered to assist the further professionalization of teachers in 21st century skills through public ICT organizations and pedagogical centres. In addition, more training programmes are offered to university graduates working in various domains (outside schools), to attract them into teacher training.

1.2 **KEY CHALLENGES /PRIORITIES FOR EDUCATION**

The first priority of current educational policy is to find and employ skilled teachers on a more permanent basis to teach at schools. The need is both quantitative and qualitative. Therefore, several policy measures have been introduced (as indicated above).

The second priority is about formulating measures to “tailor education” in accordance with the personal ability, social network and interests of the student. Teaching programmes that use ICT to enable tailored education are being developed and promoted by various institutions. The Ministry facilitates open learning resources (e.g. Wikiwijs) to assist teachers to develop digital learning materials for students with different educational talents and needs. To assist the teacher to develop individual learning models, virtual learning communities of teachers are being built (Leraar24) that facilitate the exchange of ideas and experiences between teachers.

Thirdly, the Dutch Ministry of Education finances extra programmes and activities for both weak and excellent students. The OECD report (OECD, 2008) shows that Dutch Education is doing well for middle-range students but scores inadequately for students at the bottom and at the top of educational achievement. Accordingly, new additional programmes focus more on language and mathematic lessons serving weak students and excellence programs serving top talents.

Last but not least, the Dutch Government stimulates the innovative power of the educational field by inviting tenders for innovative projects. Schools can submit an innovative proposal to solve key educational challenges, such as “finding skilled teachers” or “stimulating ICT use in education”.

2. **ICT POLICY**

2.1 **RESPONSIBILITIES**

Schools in the Netherlands are themselves responsible for the implementation of ICT in education. There is a national support structure set up for the integration of ICT in the curriculum and the implementation of ICT in daily school practices. This support structure consists of projects, programmes and learning communities conducted by education supporting organizations such as the Kennisnet Foundation (for primary, secondary and vocational education) and Surf Foundation (for higher education) with the aim of providing the necessary support to meet the existing needs in this field. Furthermore, it is the responsibility of the schools to
design a vision, mission and strategy around the im-
plementation and the use of ICT in schools. The sector
organizations play an increasing role in assisting man-
gagers and teachers in formulating their ICT vision and
policy. Some sector organizations in secondary educa-
tion and vocational education build up service clubs
and innovation platforms to this end.

2.2. ICT POLICIES FOR SCHOOLS

ICT policy for education in the Netherlands is set out
by the Ministry of Education, Culture and Science. The
Kennisnet Foundation supports schools in primary,
secondary and vocational education in implementing
ICT in their school policies.

The developments in ICT policy have evolved into a
strategic approach to ICT as a means of stimulating
and supporting the learning process. This instrumental
approach is aimed at understanding the effects of ICT
in relation to educational/pedagogical use to ensure
the effective and innovative use of ICT throughout
learning. Currently, a lot of attention is directed to-
wards the integrated use of ICT in the primary (teach-
ing) and secondary (administration) educational proc-
esses. The character of ICT policy is, therefore, much
more focused on understanding and describing ICT as
an instrument that could be efficiently woven or
blended as well as anchored into teaching and learn-
ing processes and creating a knowledge society.

Consequently, ministerial policies in the last few years
have been geared towards the optimal integration of
ICT in innovative learning processes. ICT and ICT
policies are seen as a part of educational policy and no
longer as a separate policy. Executive organs like the
Kennisnet Foundation and Surf Foundation, national
pedagogical centres and sector organizations set up
programmes, projects and action plans to serve the
needs and demands of the schools. These plans focus
on three main issues:

- professionalization of the teacher;
- the school as an organization with an overall view
  concerning the integration of ICT;
- optimal use of digital learning material.

Specific ICT programmes

Although the Dutch Ministry of Education and Culture
no longer considers ICT to be a separate policy, it
supports specific ICT multiannual national pro-
grames. These programmes aim to provide a broad
impulse regarding specific ICT issues as formulated by
the schools themselves or sector organizations. Some
examples of these programmes are:

Media literacy

In 2007 the Ministry of Education, Culture and Science
set up an expertise centre for Media Literacy. This
centre works together with more than 140 organiza-
tions, varying from publishers to libraries and broad-
casting institutions. The objective of this programme is
to increase knowledge of and the necessary compe-
tences in the prudent use of new media.

Stimulating the use of digital learning material

This programme was initiated in 2008 to stimulate
increased use of digital learning material in primary,
secondary and vocational education. An important part
of the programme includes activities to form a well
functioning market of digital learning materials. To this
end, the available digital learning materials are as-
sembled and connected to portals and platforms that
are easily accessible for teachers. Through public
platforms, demand for and supply of the digital learning
materials are matched and the materials made readily
available for a specific target audience. The pro-
grame also provides research information available
about the popularity, user-friendliness and efficacy of
different digital learning materials.

Stimulating learning platforms for teachers

In order to support teachers in their professionalization
with the use of ICT, an online platform was created in
2009 (www.leraar24.nl). The platform includes files
and videos on various educational subjects supplied
by teachers themselves. At this platform teachers can
learn from each other’s experience, share their meth-
ods and discuss the key issues that they are con-
cerned with.

Stimulating digital learning environments

Dutch schools make increasing use of digital learning
environments. The Ministry of Education, Culture and
Science initiates digital learning environments for spe-
specific target audience. In 2009 a learning environment for excellent (gifted) pupils in primary education was set up (www.acadin.nl). This learning environment provides information about giftedness for parents, pupils and teachers. Pupils and teachers also use the environment as part of their teaching and learning programme.

**Innovation programmes**

SURFnet and Kennisnet have been collaborating in the SURFnet/Kennisnet Innovation Programme since 2004. The project aims to enrich education through innovative and practical ICT applications relevant to the entire educational process. Within this framework a variety of products and services have been developed, including Make a-Game, Expert op Afstand (remote expert), Teleblik, Video portal, and Expose Your Talent.

**2.3. ICT PRIORITIES**

**3. THE CURRICULUM AND ICT**

**3.1. THE CURRICULUM FRAMEWORK**

The curriculum is open and goal-oriented which means that there is no national curriculum in the Netherlands. The Ministry of Education, Culture and Science sets out educational criteria or goals called “kerndoelen en eindtermen”. It is up to the school to design a school curriculum that meets these educational criteria.

For more information about the Dutch education system, see the information file on Eurydice, the European education information network. The file provides a general introduction to the education system in the Netherlands. It also gives information about the Dutch political system and economy.

The International Review of Curriculum and Assessment Frameworks (INCA) provides descriptions of the education systems for pre-school, primary and secondary education in the Netherlands (www.inca.org.uk).

**3.2. ICT IN THE CURRICULUM**

ICT is not a compulsory element within the school curriculum. However, various organizations such as

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1 [http://tinyurl.com/37ve9ga](http://tinyurl.com/37ve9ga)
the Kennisnet Foundation stimulate schools to integrate ICT in their education. The form and extent of ICT integration in the curriculum are in most cases described in the “ICT vision of individual schools (annual school plans). It is the responsibility of schools to formulate an ICT vision, which results in a wide range of variation between schools with respect to the extent of ICT incorporation in the curriculum. Schools consult various public institutions like Kennisnet Foundation and pedagogical centres for assistance in formulating this vision.

ICT is easily incorporated into the curriculum where traditional “frontal” teaching makes use of interactive whiteboards. Additionally, student group work on individual assignments in specific curriculum profiles is also supported by ICT (Kennisnet, 2008).

3.3. STUDENTS’ ICT COMPETENCE

All schools in the Netherlands set “core educational targets” and “final achievement targets” for their students. These targets are subject-oriented. ICT competences are included within these targets and are not set or measured as a separate competence. These targets describe the competences of students. There are no goals or targets that specifically describe ICT competences such as the criteria for basic ICT skills. ICT is an instrument for learning and, therefore, ICT is mentioned within these educational criteria as the means to meet competences, such as information processing or language skills.

The targets are set by the Ministry of Education, Culture and Science in cooperation with a national curriculum organization (SLO) for primary, secondary and vocational organization. For higher education, the Dutch Accreditation Organisation (Dutch acronym: NAO) is responsible for setting the targets for students in higher education (see further under 3.6).

3.4. ASSESSMENT SCHEME

How students’ ICT competence is currently assessed is related to “core educational targets” and “final achievement targets”. A national examinations office, CITO, provides testing material and takes care of the organisation of examinations, analyses tests and helps improve the quality of tests, examinations and examination systems, including online exams.

3.5. ICT BASED ASSESSMENT

Schools at secondary, vocational and higher education increasingly use ICT-based assessments. Due to their autonomous status they decide for themselves when and how they start with digital examination. Since October 2009 the central examinations office (CvE) has been responsible for informing and supporting schools regarding the digitalizing of their exams. CvE provides information about the implementation of digital exams (phases for integration etc.) but also about the regulations concerning the use of digital exams (purchasing digital exams, standards and safety regulations).

3.6. QUALITY ASSURANCE OF THE USE OF ICT IN SCHOOLS

Measuring quality of learning at schools

In the Netherlands the Education Inspectorate is responsible for supervising the education system as a whole and the performance of the individual schools and educational institutions. All institutions in primary, secondary and special education, as well as in vocational and adult education are regularly visited and evaluated. The inspectorate applies the same standards for schools with a public board and schools with a private board, the latter of which are the vast majority in the Netherlands.

The basis for the supervision is a rating framework consisting of the thirteen quality aspects named in the Education Supervision Act and the attached indicators and points of attention (www.onderwijsinspectie.nl). The use of ICT is integrated within these indicators. These frameworks are set up in consultation with representatives of the education sector and require the approval of the Minister of Education (article 12 of the above-mentioned Act). A distinction is made between quality aspects that concern the results of the education provided and those that concern the teaching-learning process. Within the framework, indicators are designated that measure the core elements of education quality. These “key indicators” form the basic set for the so called Periodic Quality Assessment (PQA). This model of supervision is conducted once every four years at all educational institutions.

Measuring progress with ICT
The Ministry of Education regards monitoring the development of ICT in education as very important and requires this process to be conducted annually. The annual ICT monitor (Kennisnet 2008 and 2009) collects data on key factors or indicators that are known to influence the efficient and effective use of ICT in education. The conceptual framework for the monitor is derived from the so-called Four in Balance model, which reflects a research-based vision of the introduction and the use of ICT in education. The core premise underlying the Four in Balance model is that use of ICT for educational purposes in schools depends on maintaining a balance between four building blocks: the vision relating to education and ICT; knowledge and skills of teachers; educational software (including content); and ICT infrastructure. Data for this monitor is collected from a representative sample of school boards, school management, teachers and students by both the Dutch inspectorate for education and several research institutes.

4. DIGITAL LEARNING RESOURCES AND SERVICE

4.1. CONTENT DEVELOPMENT STRATEGIES

The Dutch government has set up various strategies to stimulate open source software and standard learning material. In 2008 an action plan, “the Netherlands in open connection” (NOiV), was introduced. The main motivation for this programme is the belief of the Dutch Parliament that the use of open standards and open source software can contribute significantly to a better performance and a better service from the Government.

For 2009 the focus of NOiV was on municipalities, ministries, counties and regional water councils. In addition NOiV has focused on organisations active in care and education.

Starting in 2010 the programme office will expand its efforts towards other sectors like health care, while 2011 will be the year of consolidating the efforts made and securing the progress in the daily activities of these (semi-) public sectors.

Parallel to an action plan that focuses on open source software, in 2008 the Council of Education advised the Ministry to develop open learning material that can be easily used by teachers. As a result a big initiative has started: Wikiwijs. This initiative aims to give an impulse to the use and the development of digital learning material by teachers themselves. Teachers have open access to these digital learning material banks. The available material is easily searchable, retrievable and usable due its classification according to the target pupils (primary, secondary or vocational education), to subject (mathematics, language, etc.) and to popularity. Both initiatives also provide discussion forums. Teachers rate the existing material and advise one another about its use.

4.2. E-CONTENT DEVELOPMENT

The use of multimedia educational content in lessons is very popular in the Netherlands. The most important initiative to provide multimedia education content is Teleblik. Teleblik is a website that assembles thousands of hours of educational television and makes these available online, free of charge to schools (www.teleblik.nl). Teachers can download and upload films and animations and give their opinion about particular material, after logging in with their school accounts.

4.3. USER - GENERATED CONTENT

In the Netherlands there are approximately ten educational portals used by teachers who actively generate, review and rank digital educational content. Some of these portals have been initiated by the Ministry of Education, others by sector organizations^2.

4.4. WEB 2.0

The use of Web 2.0 tools for teaching and learning is constantly increasing in the Netherlands. Schools themselves have taken several initiatives to introduce Web 2.0 tools. To promote and support the initiatives of the schools Kennisnet Foundation provides “Innovation incentives”. These incentives include delivering both expertise and financial support.

4.5. CONTENT SHARING

The Netherlands has advanced facilities for sharing digital content within the country. All relevant digital learning resources are aggregated in 40 repositories, including metadata according to open standard (IEEE-LOM). At this moment there are dozens of search portals, including SharePoint Edurep-widget and an HTML Edurep-widget. All portals are connected through a central index called “Edurep”. Edurep offers a single point of contact to any search portal for discovering, delivering or sharing digital learning resources intended for special target groups. Teachers use one account (Entrée account) to log in to these portals.

In order to exchange digital content and also experiences of content sharing, the Netherlands participates in the Learning Resources Exchange network of European Schoolnet (LRE). The Netherlands is also an active member of EDRENE network and has bilateral cooperation with Klас cement (Belgium) and BECTA (England).

4.6. LEARNING PLATFORMS

In the Netherlands there are several successful learning platforms used by teachers, managers and educational policy makers. The most popular platforms are:
http://communities.kennisnet.nl/.

Platform where teachers can find learning material and communicate with each other through Facebook. A community leader who is a teacher him/herself acts as the coach of the community. http://www.leraar24.nl/

An online platform where teachers can find films and textual information about a particular subject in order to improve their professional careers. They can discuss virtually about the effects of a particular pedagogical method or instrument (http://learn.org/circles/).

Several Dutch schools cooperate in learning circles. Learning circles are highly interactive, project-based partnerships among a small number of schools located throughout the world. There are two sessions each year, September-January and January-May.

5. TEACHER EDUCATION FOR ICT

5.1. ICT COMPETENCE TARGETS

The quality of education is measured annually in the Netherlands by the Education Inspectorate. One of the variables measured for the quality of education is the competence of the teacher. The necessary competencies of the teacher are defined in a law, the BIO. This law determines seven required competences that teachers should possess. ICT competences are integrated within this.

5.2. ASSESSMENT SCHEMES

The boards of schools are responsible for assessing teachers’ competences (including ICT competences), following the directives of the BIO Law. These assessments take place during the annual performance appraisals and through interviews of teachers by the management of the school.

5.3. ICT IN TEACHER EDUCATION

Institutions that provide initial teacher training are very well aware of the importance of building competences which enable integration of ICT in teaching. However, ICT is not compulsory in teacher education. At this moment several institutions for teacher education are working together to define a “formal notation” of what the basic ICT competences are that initial teachers should possess. Boards of schools intend to use this notation as standard for future competence overview.

Teachers in training undergo extensive internships at schools and are exposed in this way to the ICT systems available at the school in question. They are frequently required to undertake ICT-related projects at their internship school. ICT is not a compulsory element in teacher education3.

5.4. TRAINING THE TEACHER TRainers

In order to integrate ICT in teacher training, in 2007 the Kennisnet Foundation started the programme “Samen

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3 http://edusummit.nl/furtherreading
deskundiger” (meaning “More expert together”). This programme sets out the following goals:

- Strengthening the relationship between the demand of schools and support by teacher training institutes in the area of organization and use of ICT in daily school practice;
- Organizing and arranging effective sustainable cooperative practice between schools and teacher training education;
- Supporting the creation of the added value of future primary-school teachers;
- Supporting professional teacher education with public ICT products and services;
- Developing a certified pedagogical standard for ICT use by pupils in accordance with the competences of trainee teachers.

Throughout the programme students from different schools interact with each other and with teachers at four regional meetings and through a community. The method of the programme is based on facilitating peer learning with an optimal integrated use of ICT tools such as online workshops, communities, and physical meetings.

5.5. INCENTIVES

In 2009 the Ministry of Education, Culture and Science published a plan called “Agenda for innovations in education”. The plan includes financial incentives for motivating teachers to present innovative suggestions to solve the main problems of Dutch education. Greater attention is devoted to innovation in the education process, the reduction of teachers’ workload, and participation by various groups. The use of ICT is mentioned here as an important method to consider while formulating their suggestions.