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# The paradigm of change from education to learning

## The Netherlands

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# 1 Introduction

This report contains the Dutch country study for Work Package 4 of the Socrates/Nesor project on social risks in a globalizing knowledge society and the role of higher education. The central theme of Work Package 4 is the paradigm of change from education (teaching) to learning, as it evolves in the higher education systems of the partner countries in the project. The main objectives are to describe 1) the attitudes of key policy actors with regard to support and opportunities for change in this direction and 2) the practical activities of different actors, aimed at changes in the HE system in relation to the Lisbon and Bologna recommendations.

Here, we focus on the situation in the Netherlands. First, we describe basic elements of the policy debate as far as it refers to the support and opportunities for change of the (higher) educational systems and arrangements related to Lisbon and Bologna priorities. Then, we continue with a description of some basic strategies at local institutional level aiming at the further evolution of educational practices in the direction of life wide and life long learning:
a) dual learning, as it has been introduced in academic education; b) competence oriented learning, as it is practiced in higher professional education; c) digital learning or e-learning, which is gaining popularity in higher education, connecting in-house and distance learning. We conclude with a short summary and some issues for further debate.

The activities for Work Package 4 are coordinated by the Institute of Sociology of the University of Lodz in Poland. This report is elaborated according to the guidelines for the national country reports which were provided by the coordinator.

# 2 Policy measures related to Lisbon and Bologna recommendations

In this section we describe recent developments in Dutch (higher) education policy related to the rise of a knowledge society, as they have been inspired for a part by European educational policy and the Lisbon and Bologna declarations. We will place them within the context of recent legal and political changes in the regulation of Dutch higher education. We will give special attention to life long learning as an element of the reforms. Before doing so, however, we will first introduce the major actors involved in HE reforms related to the development of a knowledge based society.

## 2.1 Actors involved

Actors from different subsystems are involved in the Dutch debate on reforms in higher education in relation to the rising knowledge society, in particular the educational and the economic subsystem. Several platforms and committees exist where actors from both sides regularly consult each other on HE policy programmes and proposals. Representatives from the field of science often participate in these platforms.

*At the side of education*

At the side of (higher) education major policy actors are:
- the Ministry of Education, Culture and Science, responsible for higher education (*OCW*);
- the Dutch Foundation for Scientific Research, responsible for the funding of fundamental scientific research (*NWO*);
- the Association of Collaborating Universities (*VSNU*), representing the 14 Dutch research universities and polytechnics;
- the Council for Higher Professional Education (*HBO-Raad*), representing the around 110 institutes for higher professional education;
- the Councils for Secondary Education (*VO-Raad*) and Secondary Vocational Education (*MBO-Raad*), representing the schools for secondary education;
- the Dutch-Flemish Accreditation Organization (*NVAO*), responsible for the accreditation of (new) study programmes in higher education.

- policy advisory boards of the government like the Council for Education and the Council for Science and Technology; both act on national level.

Furthermore, there are some commercial institutes for higher education in the Netherlands, which are not represented by the councils mentioned above. They have no joint body thus far, but they are represented in the branch organization for private training institutes, the *Paepon*.

*At the economic side*

At the economic side, the Ministries of Economic Affairs and Social Affairs and Employment are usually consulted in policy issues of higher education when they have wider implications for the economy and the labour market. Consultations can take place bilaterally, but it can also be formally arranged in special advisory boards and committees, like for instance the Scientific Council for Government Policy (*WRR*); the Social-Economic Council (*SER*), an advisory board of social partners and independent experts on issues of social and economic policy; the Council for Work and Income (*RWI*), an advisory board of social partners, local communities and employment offices on labour market issues; and the Innovation Platform *(IP),* an expert think-tank for policy issues related to science, technology and innovation. These boards have published several advices on higher education recently, linking it to socio-economic aspects of the knowledge society and stressing among others the need for life long learning. More information on this can be found in the Dutch WP2 and WP3 country reports.

## 2.2 Legal and institutional changes

*Adaptations of existing legislation*

In the Netherlands, major elements of the Bologna declaration were incorporated in the HE system at a rather early state. Shortly after the declaration, the Law on Higher Education was adapted to introduce the Bachelor-Master structure, the ECTS based credit points system and the Diploma Supplement, describing learning outcomes and qualifications in a common EU standardized format. These changes covered the HE system as a whole. Both universities and professional HE institutes could apply the new BaMa-structure, and many institutes actually did so. Within a few years after the start in 2002-2003 more than 80% of all HE programmes were rearranged in the BaMa structure, according to the progress report of the Ministry of Education (OCW, 2006). Bologna recommendations regarding quality management were all incorporated in the quality control procedures of the NVAO, the national accreditation body.

*Actual intransperancies*

However, the early adoption of these elements does not mean that full transparency from an international perspective has been established already. According to promoters of the Bologna process, improvement is still needed with regard to issues like: a) procedures for admission of students from other EU countries; b) procedures for the evaluation of qualifications of foreign students; c) recognition and validation of qualifications attained outside educational contexts, for instance at work, in work experience periods; d) description of learning outcomes; in practice, HE institutes use various standards, in stead of the common standards of the diploma supplement format; e) the way study credit points are counted and related to students work loads; f) the relationship between credit points and competences, as defined for various parts of the study programmes. These issues are still debated in the Netherlands, actually.

Another point relates to the fact that the new structure was implemented within the existing Dutch binary HE system, with its separate segments for scientific (WO) and professional education (HBO). Formally, both WO and HBO have introduced the bachelors and masters degrees but titles are not comparable and, in practice, transition from HBO to WO is difficult or not really possible, without extra transition courses. Although the Netherlands is ahead in the EU as regards the implementation of the Bologna recommendations, this also hinders full transparency from an international point of view.

*New law on higher education*

The Bologna based measures described above fitted well with the trends of deregulation, decentralisation and standardization, which were already visible in Dutch higher education. These trends are reflected also in the recent new Law on Higher Education. With the new law the government wants to increase the autonomy of the HE institutes, to strengthen influences from the market and the demand side (students, stakeholders) on educational programmes and to introduce new forms of governance, with new checks and balances within and around the institutes. The government withdraws from the primary process of education – this fully becomes the domain of the institutes themselves - while maintaining its responsibility for quality, accessibility and efficiency of the system (OCW, Memorie van Toelichting, 2006).

Important components of the new law, relevant here, are the following (OCW, 2006):
- Increased *autonomy* for the HE institutes; the law becomes a kind of framework act, with a general obligation of good governance as regards education in stead of detailed regulations regarding primary processes and supportive management.

- More *flexibility* for institutes with regard to the development of study programmes; the focus of accreditation will shift from the level of 'programmes' to the broader level of 'domains', within which a greater variety of programmes is possible.
- More opportunities for students to develop *tailored educational trajectories*; it is still debated whether of not this should also be facilitated with a financial system of 'learning rights' for students.
- More facilities for *life long learning*, especially by introduction of better procedures for recognition and validation of non-formal learning.
- More opportunities for *collaboration of institutes* in different HE segments, for instance between WO and HBO and between public and commercial HE institutes.
- Extension of scientific *research opportunities* in institutes for higher professional education, with the focus on applied scientific research as distinguished from the free, fundamental scientific research at the universities.
- More opportunities for *joint degrees*, among Dutch institutes but also with institutes in other EU countries; the binary system will be continued, however.
- Better *connections with stakeholders* on the labour market and a better organization of consultation with the demand side (employers, professions, branches) as regards the actuality and quality of study programmes.
- Coupled with greater autonomy: a greater focus on *accountability* of the institutes and on the monitoring of quality, especially with output indicators.

It is expected that in this way - through broader domains, flexible programmes, more choice opportunities for students, more autonomy of the institutes, opportunities for collaboration between institutes, a different system of governance – the student-centeredness of HE will be increased.

*Changes in preparatory secondary education*

During the past years several changes have been introduced in secondary education, aiming at an improvement of the links and transitions between secondary and higher education and at a better preparation of students for the new requirements of higher education, in order to prevent drop outs. The changes focused in particular at the greater flexibility and student-centeredness of HE and the competences of autonomy and self-management they require from students. The major changes are the following (compareVSNU, 2005):
- In the final years of general secondary education four *'basic profiles'* were introduced, each qualifying for a specific but still broad range of studies in HE:
  o the culture and society profile
  o the economy and society profile
  o the nature and health profile
  o the nature and technology profile

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Every profile has a number of obligatory subjects, others subjects are free to choose by students, within the range of their basic profile and without it. Every profile qualifies for a specific field of HE disciplines in the humanities and the sciences.

- The *content of subjects* was adapted to make a better fit with the corresponding study programs at the universities and the professional schools for higher education. Several new subjects were introduced, that provide scholars with a broad basic qualification in a range of previously separated disciplines. For instance, the new subject of 'nature, life and technology' was developed, a multidisciplinary subject that combines elements from the physical, chemical and biological sciences.

- A greater emphasis was laid on *basic skills*: being able to study independently, (study) planning skills, communicative skills, ICT-skills and basic research skills. These skills are considered to be essential in a good preparation for higher education. Didactical methods like self-study programs, team-learning, project groups, experiments, small-scale research, are promoted to teach the skills.

Furthermore, the system of information and counseling of pupils was improved. Universities and schools for higher professional education launched information campaigns and organized open days, study markets, tutor programs (students inform pupils) etc. to attrack pupils and give them a clear picture of the study programs they offer. The schools for secondary education also developed internal arrangements for counseling and guidance, with for instance study counselors, exchange programs with universities, meetings to get acquainted with life at HE institutes etc. Some introduced a new subject, called 'career orientation', which offers scholars the opportunity to explore their preferences in a better way already at their prep school.

## 2.3 Critical perspectives

The changes, introduced by the new regulations on higher education and the visions behind it, are not undisputed in the Netherlands. Especially from the academic community criticisms can be heard that the push towards a more demand-driven higher education will go at the cost of the classical values of academic freedom and professional autonomy. Critics warn for the negative consequences of market thinking in higher education (compare Lorenz, 2006):
- commodification of educational products and programmes;
- standardization of the educational processes;
- taylorization and deskilling of the professionals;
- the rise of managerialism at the cost of professional autonomy;
- counterproductive bureaucratic effects of (quantitative) output control.

Camouflaged by buzz words as 'knowledge society', 'modularization', interdiscipli-narity', 'stakeholders' etc. universities and faculties are fragmented and degraded into a kind of knowledge factories, with students as 'consumers' and managers dominat-ing 'production'. In this way, the shift from staff-centeredness to student-centeredness goes at the cost of quality, measured along traditional academic standards. Several critical observers plead for a restoration of small-scale educational practice, centred on communities of leading academics, active in specific professional fields. The professionals should be brought back in.

Although such criticisms can also be heard in professional universities - especially with regard to the issues of managerialism and professionalism - these colleges often appear to be more inclined to adopt to the 'market'-discourse and establish connec-tions with 'stakeholders' in the business community, the professional fields and the wider society. Probably, this has to do with their stronger involvement in the transfer of knowledge and the use of knowledge in applied research, which are services that particularly benefit local stakeholders. However, also in professional universities criticism of managerialism is fierce sometimes. The idea that the professional auton-omy of teachers is under threat and that the quality of education is under pressure, due to an overload of 'modern' managerial and bureaucratic practices, has gained more and more support during the past years.

## 2.4  Life long learning as element of HE policy

Introduction of more opportunities for life long learning has been promoted by social and economic policy actors in several recent advices to the government regarding the role and reform of higher education in the light of the rising knowledge society.

*Policy proposals and measures*

The Dutch Social and Economic Council - a national advisory board of the social partners - particularly stresses its importance for the labour market. Expected future shortages on the labour market ask for more efforts to increase the number of HE graduates and for more efforts to stimulate further education of the already active population. More facilities for life long learning are needed to upgrade the qualifica-tions of employees, to keep qualifications of (older) employees up to date and to retrain employees if changes in work and economy make a shift necessary. Further-more, stimulation of life long learning is needed to create better opportunities for 'second chance'-trajectories at later ages and later stages in peoples careers (SER, 2003).

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The Innovation Platform (IP) - a national expert think thank on innovation - elaborated several concrete proposals to stimulate life long learning in a strategic Knowledge Investment Agenda 2006- 2016. Apart from further differentiation of education programmes, levels and financial contributions, the IP proposes among other things:

a) accessibility of study grants up to the age of 30 years;
b) legal recognition of procedures for validation of prior, non-formal learning;
c) stimulation of dual learning in medium and higher professional education;
d) an individual financial facility for employees to stimulate investment in further training;
e) extra attention for groups lagging behind, like migrants, low income groups and 30+ age.

Furthermore, the IP would welcome initiatives to improve transitions from medium level to higher professional education and to develop shortened HE programmes for a better response to varying needs of students and varying labour market demands (IP, 2006).

Several of these proposals were adopted by the government. They have found their way in new legislation and/or policy programs. The system of study grants is accessible now for people up to 30 years. Programs for recognition of non-formal learning are running now. Several institutes have introduced shortened HE programs or transition courses to facilitate access for students to regular HE programs. The proposals regarding financial facilities for employees are still debated. However, despite these measures, all in all, life long learning has not the highest priority in Dutch HE policy at the moment (see also: WP2 country report).

*Recent initiative: second learning routes for adults*

Recently, a new action plan has been launched by the Council for Work and Income and the National Initiative Life Long Learning - a network of agencies for distance learning, like the Open University, SURF-foundation, the Television Academy - to realize an 'open and flexible infrastructure for Life Long Learning' (RWI, 2008). The action plan is widely supported, e.g. by the social partners, the local communities, the public and the commercial educational sectorial organizations. Participants are among others: the VSNU (universities), the HBO-raad (professional colleges), the MBO-raad (secondary vocational education), the VO-raad (secondary general education) and the Paepon (commercial training institutes).

The major objectives are to stimulate the creation of more demand-oriented 'second learning routes' and to stimulate actual participation of adults in these routes. As the plan states: '*In the longer run, the parties involved strive for a full, independent second learning route for adults, which provides them the opportunity to acquire profes-*

*sional qualifications by freely switching and linking informal, non-formal and formal learning in a way that fits best to their situation'.* To reach this objective, a further demand-driven development of the market for post-initial education is needed, with more tailor made trajectories for medium and higher qualified employees and better opportunities for the recognition and validation of prior learning e.g. learning outside the educational system.

The initiators have elaborated a number of measures to stimulate such an open infrastructure for life long learning (RWI, 2008):

- at the demand-side (companies, employees, unemployed): development of adequate provisions for career guidance of employees and unemployed; development of adequate facilities for training of employees, unemployed, special target groups;
- at the supply-side (education and training institutes): development of flexible qualifications and learning routes; development of collaboration with the demand side in open networks with innovative and flexible combinations of learning and work;
- mutual consultations between actors at the demand and at the supply side in regional and sectorial platforms; consultations should aim at a better articulation of the demand and at the initiation of new demand-driven life long learning trajectories;
- a national framework for the recognition and validation of prior learning and for vocational and professional qualifications, which supports the quality, transparency and compatibility of public and commercial education programs;
- financial arrangements supporting second learning routes for adults, for instance as proposed by the SER and the IP.

The initiators propose to establish close connections with ongoing initiatives.
In higher professional education a starting point can be a network of professional HE colleges, recently established by the Open University. The colleges collaborate to develop targeted HE programs for medium qualified employees with some years of work experience to qualify themselves further for a recognized HE bachelor or an associate degree. The programs use new didactical approaches, like blended learning, work-based learning, learning communities, open educational sources etc. Entrance levels are determined by validation of prior learning.
In academic education a starting point can be found in recent agreements between the universities about a further flexibilisation of learning programs, especially the master programs. However, the universities will stay responsible for initial education in the first place. The Open University already offers academic (second) learning programs for adults. (RWI, 2008).

# 3 Approaches to the change from education to learning

After having described the policy framework in the previous section, we now will discuss some approaches that have been used by Dutch HE institutes to reform their programs in the light of the paradigm of change from education to learning. We focus on two approaches: a) dual or work-based learning, as introduced in academic education; and b) compentence-oriented learning, as practiced in a number of professional HE colleges. Each of these approaches characterizes a shift from a more passive to a more active way of learning and from learning inside to learning outside specific educational contexts. In the next paragraph we will discuss a third approach which is relevant in this regard: digital learning or e-learning. E-learning is becoming increasingly popular in higher education at the moment.

## 3.1 Dual learning in higher education

Dual or work-based learning has a long tradition in the Netherlands, especially in the field of (medium level) *vocational education and training.* In the VET-system dual learning is one of the major qualification roads to assistant- of full fledged craftsmanship in different branches of industry, trade, technique, business administration, the services and the health and care sector. Specific for dual learning is that the study program has two components: a more theoretically oriented school-based component and a more practically oriented work-based component. The practical part of the program is usually organized by companies or by special practice training centers. There are two varieties of dual learning: a) the 'theoretical' variant, with a maximum of up to 40% of practice training, usually in the form of work experience periods; and b) the practical variant, with a maximum of up to 80% of practice training, usually at the workplace within a company itself, on the basis of a formal labour (and learning) contract. Dutch VET-programs are all organized according to one of these dual structures, actually.

During the nineties dual learning was also introduced in *higher professional education* in the Netherlands. It was promoted as a strategy to improve relationships between HE colleges and the business community, in particular small and medium sized companies (sme's); to create a better fit between educational programs and qualification demands at the labour market; to provide opportunities for students to qualify in a broader sense, in actual practice; to facilitate transitions of students from school to

work. Subsidy schemes were developed to stimulate the HE colleges to implement dual learning trajectories. An example is described below.

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**SME-Road**

The SME-road, introduced in the nineties in higher professional education, is a combined learning and work trajectory, in which a student first gets 3 years of fulltime education at the institute. In this period he can acquire the basic HE competences. After that, he can look for a job in a small or medium sized company and follow a 4th year in this company, with a program tailored to the demands of the job or company. He can save learning credits for this year. Students can for instance follow courses in logistics, company management or marketing, complementary to the technical tasks and projects conducted at the workplace. The SME-road was particularly promoted to improve the connections between HE colleges and SME's in their regional environments (Van den Tillaart, et al., 1995).

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In the late nineties dual learning was also introduced in *academic education*, firstly on an experimental basis, supported with extra grants. A number of universities actually took this opportunity to rearrange study programs on a dual basis. Dualization could cover complete programs, like for instance biology, informatics, geography and econometrics or certain doctorate specializations, like for instance a corporate training specialization in pedagogies, a labour law specialization in Dutch law and a minor in journalism and communication in language studies. Dual learning was promoted by experts and policy makers as a way to increase the flexibility and the variety of learning routes in academic education (compare Geurt & Meijers, 2003).

The introduction of dual learning was not undisputed in academic circles. A major concern was the quality of the practical component of the programs. It was questioned whether it was possible to uphold academic standards, if learning was organized outside the universities and opportunities for learning were partly going to be determined by the requirements of the workplace. For that reason, the experiments were evaluated by the Inspectorate for Education precisely with regard to this question: are academic standards guaranteed in dual learning? We will present the main conclusions, here, to illustrate how the universities dealt with this issue (OCW, 2002).

The Inspectorate investigated all the experimental dual programs that were offered by the universities and subsidized by the government by way of case studies, interviews with actors involved and (meta-) analyses of the self-evaluations of the faculties. To assess the question whether the programs complied with academic standards a list of quality criteria was developed. The instrument distinguished 4 dimensions: a) the curriculum (competences for work periods; connections of study and work); b) the didactical approach (overall concept, learning potential of the work place, guidance at work, assessment of work component); c) qualitative results (as actually realized); d)

organizational aspects (study-work contacts, organization of work, quality management). With these criteria in mind, the Inspectorate could draw the following conclusions (OCW, 2002):

1. The curricular objectives for the practical part were usually not clearly defined. One used the objectives of the regular curriculum also for the practical part. The curricula were adapted sometimes, but not in an innovative way and not specifically related to dual education. Adaptations concerned orientation courses, social and communicative skills and the structure of the learning process. Mostly, there was no clear connection between study and work i.e. between the theoretical and practical part of the program. The professional field was usually not involved in curricular redesign.

2. For most dual programs no didactical concept was developed. One did introduce types of activating education, like project-centered and problem-oriented education, but not within an overall didactic of dual learning. However, learning in actually practice, in a realistic environment, was highly valued by students and teachers and considered as an important added value of the dual learning route. Most students were supervised well during their work experience period, although most companies had no systematic guidance protocols. Qua study load, most students considered the dual route as more intensive than the regular program.

3. All actors involved were positive in their own evaluations of the dual programs. Students stressed the value of experience in actual practice. Companies were usually very satisfied with the skills, attitudes and employability of 'dual' students. The dual routes apparently improved labour market entrance positions and career opportunities of the students, according to the Inspectorate.

4. As regards organizational conditions, improvements were recommended. Direct supervision and guidance of students was usually adequate, also during the working period. But often there were no further formal contacts or consultations between the faculty and the workplace. Quality management of the practical part of the program was hardly developed, neither in the faculties nor in the companies.

In sum, the Inspectorate comes to the conclusion that, although the quality of the programs is adequate, academic standards are not yet *guaranteed* in the dual learning route. Dual learning is still not embedded at the structural level, nor in the faculties nor in the companies, and that is something which is needed indeed for systematic quality management. The Inspectorate recommends a more explicit definition of competences and didactical concepts for the practical part of the dual programs, a more explicit structuring of learning plans of individual students and a better organi-

zation of consultancy between faculties and companies with regard to the design, development, quality and evaluation of the practical curricula.

Dual learning is clearly considered as 'academic-plus by all actors involved. According to the Inspectorate, it is an enrichment for higher education and has good future perspectives with the bachelor-master cycli providing new opportunities. Dual learning might especially be applied in the master phases of higher professional education, with introductory courses to dual learning in the bachelors (OCW, 2002).

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**Learning in projects**

In principle, dual learning takes place both within a HE institute and outside of it, in a company or institution in the professional field. However, the professional field, e.g.: professional work in an authentic environment might also be simulated within the HE institute. In this case, conditions are created that resemble real-life work situations and problems as much as possible. One of the Dutch universities f.i. redesigned its curriculum for Knowledge Engineering in this way, according to the principles of Project Centered Learning. Students were grouped in small teams and had to design, develop and report 'innovation projects' in the same way as such projects in real companies are processed. Students have all the different roles, conduct all the different activities (design, development, marketing, presentation) and meet all the different problems they will also encounter in later practice. Project weeks are included in every years curriculum. Projects in later years are proposed by external clients of the faculty (cfr. Kirschner, 2000).

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## 3.2  Competence-oriented learning

During the nineties competence-oriented learning became popular among policy makers, educational experts and consultants, as a new concept for design of education programmes, applying the principles of active or constructivist learning (Bolhuis & Simons, 1995). During the past 10 years, schools for (medium level) vocational education have implemented the concept on a large scale, first on an experimental basis, later under general policy directives. It is the objective of the government now that all VET-schools have introduced competence-oriented learning in 2010.

The schools for medium level VET were later followed by a number of colleges for higher professional education and some faculties at some universities. At the universities, however, competence-oriented learning has not found many applications, yet. Universities are less used to work with extended systems of competences and they appear to be less inclined to use them as guidelines for their study programmes.

In the Dutch debate about competence development and competence-oriented learning, in general, two approaches might be distinguished:

a) a more differentiated approach, which considers competences as a kind of 'generic skills' (social, communicative etc.) to be added to the specific disciplinary contents of the professional body of knowledge and expertise a student has to acquire to be a competent worker in his discipline;

b) a more integrated approach, which considers competences as an 'elementary part' of the specific disciplinary contents of the professional body of knowledge and expertise a student has to acquire if he wants to be able to solve key disciplinary problems in an adequate way.

In the first approach competences like f.i. communicative skills are defined in a more general, context-free way and can be trained outside the specific setting of a profession. In the second approach communicative skills are defined more specifically and should be trained within the context of concrete practical professional key problems.

In the Netherlands, both approaches have supporters, but experts in vocational and higher professional education often stress the integrated approach. Mulder, for instance, an expert on corporate training and competence development, defines competence-oriented education as 'education which integrates disciplinary professional knowledge with professional capabilities, corresponds with later professional practice, gives application and integration of professional knowledge a more central place and stimulates the development of learning capabilities of students'. Only factual knowledge is not enough any longer, students need a broad basis of competences in order to be able to execute concrete tasks and solve key problems in their later professional practices (Mulder, 2000). Onstenk, expert on work-based learning, also connects competences with key problems in professional practice. In his view, a competent professional is someone who can deal in an adequate way with the concrete tasks and problems he will meet in later professional practice. Therefore he needs a broad basic education, that combines 4 types of competences (Onstenk, 2001):

- professional and methodical competences: abilities to execute professional tasks and solve key professional problems connected with the products and services to be delivered;

- organizational and strategical competences: abilities to deal with organizational contexts and problems connected with working as a professional in organizations.

- social-communicative and normative-cultural competences: abilities to collaborate in the working communities in the professional field and to deal with the expectations rising within these communities and the wider environment;

- learning and development competences: abilities to contribute to self development and development of the organization and the profession.

In the Netherlands, there are no general prescriptions, standards or formats of how to implement competence-oriented education for HE institutes. There is some (standardized) input from consultants, of course, but the institutes are free to develop their own policies and strategies. In practice, one can see a variety from only minor adaptations in existing curricula to a complete redesign of study programmes and didactical methods. However, the number of colleges that actually has implemented an integrated approach is rather limited up until now. Implementation is furthermore limited to certain studies, who perhaps provide easier opportunities to deal with the implications of applying concepts as competence-oriented learning and integrated learning, like for instance the social studies, management studies, health and care programmes.

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**Student Companies - Fitness, not as usual**

Fitness is booming in Dutch society. The branch is one of the fastest growing sectors in health, care and sports. Entrepreneurial competences are highly valued in the sector. Some schools for professional education (medium and higher level) have introduced 'student companies' to provide opportunities to develop these competences. Groups of students start a real business, in the market, on a commercial basis, and thus get acquainted with all aspects of entrepreneurship under real life conditions. For instance: students of a sports college (medium level) organize a large public fitness event, every year, to demonstrate different sports. It is run on a commercial basis, as a separate foundation, in collaboration with fitness companies and schools, sports clubs, suppliers, sartorial organizations, advertising agencies, the communities, the media. Teams of pupils are responsible for different aspects: programming, organization, management, marketing, public relations, advertising, logistics, catering, security etc. Another example is a group of fitness students at a school for higher professional education, who established a commercial bureau for mediation between certified fitness instructors who search for a job and fitness clubs and companies that have a job to offer. Still another examples are some HE students who started a business to support older, handicapped people: visit them at home, have a talk, take a little walk with them and if necessary let their dog out, if they are not able to do it themselves any longer. In this way, in real life, they learn the competences required to establish and run a small business in a specific market niche.

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Where competence-oriented learning is introduced in an integrated way, programmes usually are changed fundamentally:
- the objectives of the programmes are defined in another way; the focus is now on competences derived from an analysis of actual professional practice, in stead of on knowledge elements, derived from the professional state of the art;
- didactical innovations are introduced, with a greater focus on combinations of teaching with self-study, team learning, reflective activities;
- principles of problem-centred learning are often applied because they neatly fit with the central angle from which competences have been defined, e.g. the key problems in actual professional practice;

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- project-based learning is strongly stimulated, because of the opportunities it offers to integrate aspects of different disciplinary fields and to integrate development of social, communicative and strategic capabilities with development of professional expertise;
- different approaches for the evaluation of the learning process are applied, usually in the form of assessments, peer assessments and self assessments; students are asked to elaborate portfolio's to prove that they are competent in specific fields; portfolio's can contain all kinds of materials; formal exams are no longer viewed as adequate.

Furthermore, competence-based study programmes put high value on real work experience, training in actual practice and the reflective processes connected with them. Experts talk about 'learning routes' combining different kinds of learning situations and learning activities in various contexts (academy, workplace, side jobs, clubs, associations, internet) to be organised by the students themselves (cfr. Van der Krogt, 2007). Some colleges are really paving the road in this regard, as the example below illustrates.

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**The Business of Arts**

The Faculty of Arts of a Dutch college for higher professional education is famous for its creative combinations of institutional learning and learning in real life contexts. The Fashion Academy stimulates students to develop their own fashion lines and establish their own design companies. Students have done so, sometimes with a lot of success (icons: Viktor and Rolf). The Academy organizes Fashion Biennales, where students and graduates can show their new products. The events get attraction in the fashion sector all over the world. The network of new launched design studios and other spin-offs also provide good opportunities for new students to acquire practical experience and, later, to get a job when they are graduated. The Faculty not only operates in the fashion sector. It also has a Musical Academy, which provides many opportunities for students to perform in real life situations. And furthermore, it is famous for the organisation of another very popular artistic event: the Living Statues World Championship.

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Despite the push it got from policy makers and educational experts in the past, competence-oriented learning is a disputed issue in the Netherlands nowadays. There are promoters of the new approach, but also (fierce) critics. Within education itself criticisms are heard from various sides: students, teachers, parents. But also representatives of the professions and the business community express concerns about the reforms at the schools and colleges. Critics usually stress one or more of the following negative consequences:
- the knowledge base of professional qualifications gets too small;
- professional knowledge gets too fragmented and dispersed over 'modules'
- students do not get a coherent picture of a the body of knowledge any longer;

- there is a proliferation of tailored, even 'individualized' learning trajectories;
- qualifications become intransperant for external stakeholders due to proliferation;
- students get too little structure, which goes at the cost of the weaker students;
- the profession of the teacher is degraded into a kind of educational counsellor;
- teachers become overloaded with routine work due to new assessment procedures;
- reforms are often just paper work, bureaucratic or even 'cosmetic' exercises.

As far as it looks now, it appears that HE institutes have become more careful with the further implementation of competence-oriented learning, in the light of rising criticisms. However, thus far, there are no systematic evaluations available, which can give a better insight into the state of affairs, the scale and problems of implementation, the added value, the positive and negative results and effects of the new approach.

# 4 Digital learning in primary, secondary and higher education

## 4.1 Introduction

E-learning in higher education (HE) is a concept with many definitions. However, these definitions always contain the elements of ICT-usage in combination with the Internet and are focused on hardware (infrastructure) as well as on learning processes. An authoritative circumscription is given by the OECD: '*E-learning refers to the use of information and communications technology (ICT) to enhance and/or support learning in tertiary education. E-learning refers to both wholly online provision and campus-based or other distance-based provision supplemented with ICT in some way.*'

Also in the Netherlands, since a number of years, e-learning is perceived as important in the context of HE. In March 2005, the government published a first white paper on e-learning in HE (MinOCW, 2005). On the basis of the strategy unfolded in this paper, the government and other relevant parties involved in the context of HE (VSNU, HBO-raad, Open University, and others) jointly developed a National Action Plan E-learning in HE, which is still running to-day and the years to come.

In this chapter we will describe first of all the head lights of the strategy proposed by the government and its translation into the National Action Plan E-learning. On the basis of evaluative social research carried out we will give an impression of the implementation and adoption of the strategy and action plan at the institutional level of Dutch universities and universities of professional education. Finally, e-learning doesn't stop at the confines of HE. Also primary education, secondary education and vocational education are important. To a certain extent, these forms of education are forerunners to developments in HE and because of that, it becomes important to see how e-learning is affecting primary, secondary and vocational education in the Netherlands. Also in this case we will relate actual developments with perceptions of teachers and school leaders.

Beforehand it can be concluded that the Netherlands is not a front-runner in the world of e-learning as far as renewal of learning processes is concerned. On the other hand, in perspective the Netherlands performs better than moderate with respect to the implementation of ICT and Internet infrastructure in HE. Therefore, a paradigm shift

from education to learning still seems far away from reality in HE. A second conclusion is that the development of e-learning and more in particular the changing of learning processes in primary, secondary and vocational education is substantially more outspoken than in HE. On longer term this also will have far reaching consequences for the nature of learning processes in HE. This will be even more the case because of the fact that the environment of HE has become more competitive and HE institutions have to compete more intensively in attracting domestic and increasingly also foreign students (Boezerooij, 2006)

## 4.2 The e-learning strategy and National Action plan E-learning in HE

Government sees e-learning as supportive to its strategic HE-policy. In this perspective e-learning has to contribute to the necessary transition to a knowledge society and to the realization of the Lisbon-goals. Moreover, it has to reinforce the international positioning of HE by making Dutch HE more attractive for foreign students. Finally, e-learning can further improve and usher participation in HE of new target groups, such as working people and unemployed people. Specific attention in this respect will go to stimulating people with vocational education at the secondary level to participate in vocational education at the tertiary level. In the end, participation in HE should be up to 50 percent and should also be more diverse as it is at the moment.

In a broader context Government wants e-learning also to play a prominent role in new demand-oriented forms of innovative education fitting well with the requirements of the network society, such as competence learning, co-operative learning with ICT-support, and distance learning. Overall, the quality of education has to be improved.

At the moment of writing its white paper (2005) the ICT- and internet infrastructure of Dutch HE-institutions proved to be at order. Each Dutch HE-institution has its own advanced ICT-network and network of computers as well as a certain amount of ICT-support in behalf of education. ICT-applications are widely used for standard applications (word processing, internet, e-mail, etc.) and for electronic learning environments (blackboard). On the other hand, ICT is almost not used in the perspective of an educational vision or strategy. Compared to other countries the Netherlands doesn't take a vanguard role. Compared to the 60 biggest economies of the world the Netherlands scores 7.6 on a scale of 1-10. The Nordic countries, the US and South-East Asia perform substantially better.

It is the intention of Government to further stimulating the development of e-learning in Dutch HE by creating the proper conditions for the HE institutions. However, the responsibility for the implementation of e-learning remains with the HE-institutions

themselves. A key-role in this respect plays SURF (and one of its important offshoots SURF-net), a networking institution created by the HE-institutions themselves and the Government. In 2005 SURF had an annual budget of about € 33,- million. SURF is responsible for the execution of the National Action Plans directed at the further development of e-learning in HE-institutions[1]. Next to the available budget of SURF it is estimated that all HE-institutions spend about 7 percent of their whole budget to ICT (€ 330,- million annually).

The next step to be taken is a more educative and strategic use of ICT at the institutional level, Government strongly favors the concept of *blended learning*. This is a combination of e-learning, internet usage and face-to-face learning. To be able to realize this part of the strategy of HE according to Government a far-reaching culture change in the institutions will be required leading in the end to fully developed forms of online-education.

To give an impression of this challenge we will summarize briefly the results of evaluation research at the level of the HE institutions (universities and universities of professional education): the so-called ICT Education Monitor. (Schooneboom et al., 2004).


## 4.3 Actual state of affairs with respect to ICT in HE

To get a good idea about which role ICT plays at the moment in HE-institutions we can dispose of the results of evaluation research in 2003. More recent results are not available at this moment. So, the results, regrettably, will be a little bit outdated.

The ICT Education Monitor, first of all, confirms that HE-institutions have a proper and good ICT-infrastructure. Many HE-institutions have an ICT-policy plan in the mean time and underwrite the importance of ICT-skills of students.

ICT is mainly used for information supply purposes, administrative functions and standard applications. It is much less used yet for substantive communication with students and for examining. Although there is an extensive collaboration between HE-institutions and related organization in the HE-domain, there is hardly any collaboration in the field of ICT with industry and organizations in the direct environment of the HE-institutions.

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1   The National Action Plan E-learning 2008 (NAP) has the following two objectives:
- the improvement of access to higher education; and
- the improvement of performance of students as well as the improvement of the quality of higher education.

For reaching these goals 2 x € 4,- million is available.

A good example is the Technical University of Delft. In this institution Blackboard as a digital learning environment has been fully implemented by now. Links have been realized with educational support systems, such as control of study progress, digital study documents and the exams administration. However, less developed are activating and ICT-linked educational forms. This implies that with respect to content and forms of education still much has to be gained in Delft.

Source: SURF 2004

The results also show that there is a discrepancy between the supply of ICT-infrastructure and the level of satisfaction of teachers. Half of the teachers are dissatisfied about technical support with courses, opportunities to log in at home and the help desk function. About two third of all teachers are also dissatisfied about didactical support related to ICT. Nevertheless, there still is a big potential among the teachers for further ICT-innovation of education.
All in all, ambitions seem to be higher than what actually has been reached with ICT and education in HE-institutions.


## 4.4 The e-learning strategy in primary, secondary and vocational education (PSVE)

SURF and SURF-net have a counterpart in PSVE. This is Kennisnet (in English: Knowledge Net), a centre of expertise for ICT and education. Both organizations have a close collaboration and developed an innovation program for the PSVE sector. This program consists of various components. These are, for example: best practice schools, web video, on line collaboration, digital learning material, gaming and glass fiber connections.
In 2006 the number of best practice schools increased from 5-25 schools. Best practice schools are schools that are using in an advanced way internet broad band applications. These schools receive technical support and support in the form of training and workshops and have to act as a source of inspiration for other schools (Jaaroverzicht 2006).

Two examples of best practice schools are:

Hofstad College, The Hague:
Hofstad College is a secondary school with 870 pupils. In 2004 the school has been the ICT-school of the year. The school uses glass fiber and operates a network of 130 computers and beamers. These appliances are used for different purposes, such as video conferencing with foreign schools and the production of movies. Not only pupils learn new skills, but also teachers.

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Source: SURF-net/Kennisnet 2006

In its Annual Plan 2008, Kennisnet formulates its ambition in the following terms: The school of the future will be a flexible organization in which teachers offer pupils the proper means for learning, working and living. This will be a long term mission. More practical, this will mean that pupils, but also teachers in the future will have unlimited access to learning by supplying the individual with building blocks that support learning processes.
Kennisnet will have three action goals for the coming years. These are: high quality education, adjustment of schools to an ever more complex external environment and life long learning. The organization will focus on making more flexible learning processes and the organization of schools, re-use of learning material and a further professionalisation of teachers.

In this context Kennisnet applies an interesting concept, based on results of scientific research. This is the so-called *Four in Balance model* or as it more recently is called 'Four in Balance (Plus)'. The core idea of Four in Balance is that use of ICT for educational purposes is a matter o a well balanced deployment of the following four elements:
(1) Vision and leadership
(2) Knowledge and skills (professionalisation)
(3) Educational software and content
(4) ICT infrastructure

These four elements have to be interwoven with the learning process as it is organized for pupils and requires a balanced interplay between teachers, school managers and supportive conditions (Kennisnet ICT op school, 2007).

Kennisnet operates in two complementary ways. First of all it acts as a developing organization. Secondly, Kennisnet supports schools actively with implementation and innovation processes in education, but primarily focuses on vanguard schools as well as on the more extensive middle group of schools.

## 4.5 Experiences with ICT at PE- and SE-schools

The evaluation carried out contains much data on the approach taken by schools integrating ICT into their education as well as the achieved results and is reported in the Four in Balance Monitor 2007 (Kennisnet ICT op school, 2007). This monitor gives an overview of the use, availability, and impact of ICT in primary and secondary education in the Netherlands. We will summarize below some important result.

First of all, as in HE, in the last decades also the PSVE-schools in the Netherlands invested heavily in ICT infrastructure (equipment, educational software and Internet facilities).

With respect to computer use, ICT management contains that eight out of ten schools are in a well advanced stage of development in computer use. In primary education the number of schools with well advanced use has more than doubled in the last four years. However, school management is more positive than teachers themselves.

The percentage of teachers who use a computer for teaching is significantly higher in primary than in secondary education: 87% versus 48% in 2007-2007. Moreover, the difference has increased in the past years.

On average, teachers in primary education use a computer for teaching for six hours per week. In secondary education this is four hours per week.

The number of pupils which uses Internet in school increases steadily. In 2007 this was 77%. Nevertheless, pupils are often incapable of properly reflecting on search results and of critically reading web texts and yet these skills are crucial for e-learning.

In sum it can be contained that the importance of the Internet for learning is increasing gradually. According to the Monitor this is indicated by a substantial use of the following applications:

- Doing drill and practice tests (PE 11%; SE 27%)
- Looking up homework assignments (PE 8%; SE 14%)
- Sending in homework assignments by e-mail (PE 4%; SE 19%)

- Asking the teacher a question by e-mail (PE 3%; SE 9%
- Asking an expert a question by e-mail (PE 5%; SE 6%)

Kennisnet also operated a project based on the 'laptop-per-pupil' concept (LpP concept). Schools participating in this project have a more than positive attitude about ICT at the management level. In these schools:
- Pupils cooperate more often
- Teachers teach in a more creative and attractive way
- Pupils learn more enjoyable
- Preparation of classes is easier and shorter as soon as learning material is available
- It is easier to adapt to topical events
- Teachers and pupils can communicate with each other more easily

At the same time these schools also experience some disadvantages:
- The work load of the teacher increases, because learning material often has to be personally developed by the teacher, and because contact with pupils is more intense
- Parents and teachers do not always know where children 'digitally hang out'
- Laptop batteries quickly run out
- Laptops are often available only in school
- High investments in employees and equipment is required

Apart from this, all schools included in the Monitor contain that the contribution of ICT to education can also express itself in the promotion of independent learning, in a more efficient organization of teaching, in offering a richer learning environment, and in an educational organization more flexible and adaptive to pupils' needs.

### 4.6 Conclusions as regards E-learning

A first conclusion to be drawn is that over the last decades the public education system in the Netherlands, with active support of the Government, on the whole invested much in ICT-infrastructure (hardware and software). Nowadays, computers are a common phenomenon on schools and universities and besides, supportive organizations, such as SURF-net and Kennisnet, play an important stimulating role.
At the same time, e-learning until to-day has only played a modest role in the renewal of learning processes. This definitely has proven the more difficult part. Nevertheless, there are differences in development. Primary schools and secondary schools seem to make more practical progress with implementing new learning processes than the HE-system.

Evaluation research shows that ambitions and expectations of teachers and managers still are rather high as regards the opportunities of ICT for the renewal of learning processes. This, despite the fact that practical experience and progress have been difficult and to some extent also discouraging (Rubens, 2003). This also holds to a large extent for the Government. Although the ambitious policy goals, such as a prominent role of e-learning in new demand-oriented forms of innovative education fitting well with the requirements of the network society, haven't been reached yet, the government remains optimistic about the future significance of e-learning in the context of the knowledge society. For the coming years, it expects the most of the concept of *blended learning* (a practical combination of e-learning and classroom learning). The paradigm shift from education to learning, albeit still far from factual realization, still beckons.

# 5 Conclusions and discussion

In this report we described the paradigm of change from education to learning in the Netherlands. First, we described recent developments in Dutch higher education policy in relation to the knowledge society. Then, we placed these developments in the context of recent legal and political changes in the regulation of Dutch higher education. Next, we gave some special attention to life long learning and competence learning. Finally, we finished the description of the paradigm of change by paying attention to e-learning.

The most important conclusions to be drawn, are the following:

(a) Indeed, in the Netherlands a paradigm shift is actually going on from education or teaching to the newer concept of learning. However, this is not a straight-on process with a number of practical impediments.

(b) The Netherlands has been one of the first EU-countries in adopting and implementing the major elements of the Bologna declaration on higher education. Within a few years after the start in 2003-2004 more than 80% of all HE-programs were re-arranged in the required BaMa structure. However, some problems still need to be resolved. This concerns in particular the transparency of the new structure from an international point of view. One of the remaining problems is for example the recognition and validation of qualifications of foreign students.

(c) An important explanation for the pro-active behaviour of the Dutch HE-authorities is that Bologna fitted very well with the ongoing trend of deregulation, decentralization and standardization in Dutch HE. Government is putting itself at a larger distance from the process of education by giving more responsibilities to the educational actors. As a consequence the system of governance of the Dutch HE-system is changing in a fundamental way as compared to the heydays of the Dutch welfare state. This doesn't go without criticism, in particular from the side of professional who fear for a loss of quality as compared to the former more academic standards.

(d) More flexibility and student centeredness is also visible in secondary education. An important change in SE is the introduction of four basic profiles and an improvement of the information and guiding of pupils.

(e)  Life long learning is broadly seen as an instrument that improves employability in the knowledge society. Despite a lot of debate, until to-day initiatives to make live long learning more concrete remain rather modest; in particular in HE. Recently promising new initiatives in this respect were taken by the Open University and the National Council for Work and Income (RWI).

(f) Dual learning traditionally has been important in Dutch society, in particular at the secondary professional level. From the nineties onwards also some initiatives for life long learning were taken in HE and not always without disputes in academic circles about the possible lack of quality of the practical component of the programs.

(g) In addition, competence learning, since the nineties has become an important, albeit disputed, new learning concept, in particular in secondary vocational training. Government has the intention to introduce competence-oriented learning from 2010 onwards at all VET-schools. At the university level competence learning hasn't found many applications as yet.

(h) This also too a large degree holds for the e-learning concept. The Netherlands is not a front-runner in the world of e-learning as far as a renewal of learning processes is concerned. However, the presence of the required ICT-infrastructure is not so much the problem (this is roughly up-to-date according to the required standards), but the application of e-learning practices itself. After a promising start a few years ago, the significance and impact of e-learning meets some substantial doubts with professionals and managers. This is even more the case at the level higher education. In primary and secondary education more practical applications of e-learning have been successfully introduced. It might be expected that these successes will also trickle down in due time in higher education in due time.

Summing up, we can conclude that the paradigm shift from education to learning definitely is under way in the Netherlands. But at the same time, strong practical and quality-related impediments prevent a swift and integrated realization of the paradigm shift. The core of the change process from education to learning is the gradual replacement of more traditional teaching by the introduction and further development of life long learning, competence learning, dual learning and e-learning initiatives in higher and to some extent also in primary and secondary education. The point of no-return has been passed definitely.

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