

ICT and the New Roles of the Teacher in Dutch Secondary Education

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Introduction

In this article Haaksma and Puper give an overview of the use of ICT in Dutch secondary education from the eighties to the beginning of the twenty-first century. Then they go into the new roles of both teacher and student. These new roles are the consequence of the fast developments in the information era and a major change in the national curriculum. Finally they examine the possibilities of training and professionalisation for teachers.

The Eighties

In the eighties the Dutch Government started to promote the use of the computer in education. The emphasis shifted from technology and using computer language to the educational use of the computer in all subjects (across the curriculum). A lot of money was made available for the development of software. All this proved to be a very slow and difficult process. Most teachers were reluctant to use the computer and could not be convinced of the extra value for education. The teachers that were really enthusiastic mostly used so called drill and practice software. So new technology was used as a traditional way of teaching. Moreover schools usually lacked the means to keep up an easily accessible and well maintained computer room. Though the government had provided money to buy computers and to develop software there was at that time no extra money provided for those things. Most schools depended on a teacher who was into computers and voluntarily took upon him or herself the roles of administrator, coordinator, supervisor, technician etc.

The Nineties

Two developments changed the views on the use of ICT in education.

First there was the enormous rise in daily use of the computer. The World Wide Web became very popular. E-mail and chat as well as surfing on the web were daily

activities of a major public. Lots of people learned how to use the office products on the computer. Of course this influenced the use of ICT in schools. Students now used the computer as a source of information and to make contact with the world outside school. During IT lessons they learned how to use the office programmes and teachers were also encouraged to use these programmes in their lessons. Hardly any other new software was developed. It was no longer funded by the government and without that it was too expensive for commercial companies to develop for a market as small the Netherlands.

Most software programmes were now only used for remedial teaching or extra practice at home.

The Government played along with these changes. Schools who wrote an ICT project plan in which, among other things, they had to state how they intended to use ICT at school and in the curriculum and how they were going to stimulate the teachers to use the computer, could become so called "leading schools" if their plan was accepted. Leading schools got extra money and facilities to structurally promote the educational use of ICT.

Apart from this the Government financed the realisation of Kennisnet (Knowledge Net). Knowledge Net is the national educational network, in which schools, colleges, libraries and museums are linked together (www.kennisnet.nl).

Secondly there was a major change in the national curriculum. Modern society made and makes a lot of new demands on education. Students have to be prepared for life-long learning.

In the second half of the nineties the upper secondary school was restructured. It was all aimed at making it possible for students to regulate their own learning process, and to be encouraged to make their own choices and create their own learning goals.

New forms of learning emerged, often in different combinations: autonomous learning, cooperative learning, active learning, modular instruction, problem based instruction, competence based instruction. The new attainment targets of the national curriculum and the finishing level of upper secondary school specifically mentioned which general and subject related ICT skills students had to master. There was however no mention of what teachers had to master!

How Do Teachers Adapt to Their New Role?

The new ways of learning show up best in a challenging and powerful learning environment and with teachers

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who are able to stimulate the autonomy of students. This means a lot of effort and creativity on the part of the teacher. New ICT developments and the new ways of learning go hand in hand and make a transfer to education possible. Examples are: digital learning environments, digital portfolios and the ever growing possibilities of the World Wide Web. ICT should be integrated in education in a natural way. Schools change dramatically. They become flexible, learning organisations. This article doesn't seem to be the place to go into the consequences of this for personnel policy at schools. It is sufficient to establish that the changes for the teacher are far-reaching.

To help teachers develop their new roles, the Association of National Educational Advisory Centres (APS, CPS and KPCgroep.) have developed a so-called LeaRning ARRangement.

This project was funded by the Government and was especially focused on the new teaching methods that were necessary for upper secondary schools.

The main characteristics of an Arrangement are the directions that are helpful when making such an Arrangement. They are:

- the Reason, why are we doing this
- the Role of teacher and student,
- the Route or Road a student can take, the choices that can be made
- the Reflection on what is learned
- the Rhythm in the learning process and in the face to face instruction
- the Result
- Room for individual differences

Thus a learning arrangement offers teachers a structure to use new teaching methods and make use of the possibilities that the reorganisation of the upper secondary school offers.

Learning arrangements are attractive for students because they can regulate their own learning process.

Emergent Practices

CPS has made a learning arrangement for languages in which ICT plays an important role. This arrangement makes it possible to integrate ICT into education in a natural way. It also gives teachers the opportunity to experience "Anywhere, Anytime" learning.

This learning arrangement is based on a Talenquest¹ which is a WebQuest for Foreign Languages. WebQuests are task based activities. They aim at teaching students

¹ Talenquests are based on webquests. The concept is developed by Prof. Dr. G. Westhoff of Utrecht University and director of The National Bureau on Modern Languages (NaBMVT).

More information about WebQuests can be found on Berny Dodge's website of San Diego State University:

<http://webquest.sdsu.edu>

how to make sensible use of all kinds of sources on the world wide web.

It is in fact a combination of both projects. Ready made learning arrangements and talenquests can of course be adapted by teachers to suit their own courses or instructional practice.

The talenquest can be found on www.cps.nl/talenquests. More information on talenquests and learning arrangements will be given during the conference.

Other Professionalisation of Teachers: the Database of Training Arrangements

In education, ICT is used in very different ways and at very different levels. There is a need for training, however, the supply is very diverse. The definition of training as used in this paragraph is very wide: we do not only mean courses and lectures, but also peer consultancy and networks of teachers, because teachers learn most in practice, together with colleagues. In the database of training arrangements (the 'didactobank'), situations in education in which ICT is used in a particular way and adequate training are matched together. The matching of the two, we call training arrangements.

CPS has made the database design of such arrangements by government order. The database is accessible by means of the aforementioned Kennisnet (Knowledge Net).

The visitor to the database might be a provider of courses one time and a user another time. Several groups of users and providers are interested in the database:

- teachers, because ICT practices are matched with adequate training;
- school managers and ICT coordinators, because the database might be an instrument for them to stimulate the instructional use of ICT in education;
- networks of teachers who can exchange and share information;
- teacher trainers, because the database is a means to offer exact fitting courses and training;
- publishers, because the database might be a marketing instrument for them and a means to publish new materials.

In this database users have the possibility to search easily for good practices and corresponding training in their own sector of education: primary education, secondary education, vocational education and pre-service teacher training.

By asking selected questions, also concerning level of ICT competence, the system leads the user to a relevant selection of training arrangements. An example of a training arrangement written in English is called "New York." It can be found by typing 'NEW YORK' in the search window of the opening page of the database. (<http://www.didactobank.nl> or <http://didactobank.kennisnet.nl>)

U KUNT HET VINDEN DOOR HET IN TE TYPEN OP DE OPENINGSPAGINA VAN DE DATABASE OF TRAININGSARRANGEMENTS.

T.G.Haaksma-Oostijen was a teacher of English in secondary education and later also of IT. In the late eighties she started using the computer in her lessons. Since 1992 she has been a trainer and consultant at CPS, national educational advisory centre. She is mainly involved in projects that aimed at making more use of the computer in education.

Drs. J. Puper was a teacher in secondary education and adult education for many years. He was involved in the development of innovative educational materials at Utrecht University. From 1999 he has been a trainer and consultant CPS, national educational advisory centre. His focus is the autonomously learning student in a stimulating learning environment.