Digital Skills, literacy in the information society

Steyaert, J. (2000). *Digitale vaardigheden, geletterdheid in de informatiesamenleving*. den Haag: Rathenau instituut, full text available at http://www.rathenau.nl/ and http://www.steyaert.org/Jan/

The spreading of technological innovations throughout society makes demands on the skills of the citizens. At the start of the 20th century, the advent of the bicycle led to the setting up of cycling schools, the advent of the telephone to campaigns directed at users, the advent of the car to driving schools... In recent years, the rise of the electronic highway has gradually led to similar demands on people's skills and to the creation of a range of educational establishments – from large nation-wide initiatives to PC introductory courses in the back rooms of local cafes.

This document elucidates various aspects of digital skills, that is to say, the demands that recent technological developments make on the skills of citizens. Although the concept of digital skills is immediately recognizable and is seen to be socially relevant, it is seldom as such a subject of research or government policy. And although it is seldom missing from kaleidoscopic overviews on the information society produced by government and the scientific community, it is treated more as a footnote or an aside than as a priority. This is the reason that the concept has gained little depth, that there is great variety in the application of the terminology used, and that there are often differences of opinion as to what can be understood as digital skills.

To somewhat clarify this situation in respect to concepts and definitions, a categorization of digital skills has been developed on the basis of the following tripartite division: instrumental skills, structural skills and strategic skills. This division originates in the question as to which skills people need in order to make optimal use of the new media.

- *Instrumental skills* indicates the operational manipulation, dealing with the technology as such, the keyboard knowledge. This has to do with simple basic actions (for instance, 'mouse up' means pushing the mouse away from you and not actually lifting it up as small children do to start off with) to more complex manipulations such as sending someone an e-mail with an attached data base or downloading accessory software from the Internet and installing it. Within the context of traditional media, instrumental skills are mainly reading skills .

- The concept of *structural skills* indicates that which has immediate relevance to the (new) structure in which information is contained. Within the context of traditional media, this has to do with skills such as the use of the index in a book (for which the use of the alphabet and the identification of relevant key words are necessary basic skills), or the use of the index system in a library. Changes in the structure of information can have major consequences. In new media the 'old' skills are complemented, for instance, by the skill to make use of hypertext (jumping via key words to other information sources), or looking for dynamic information (via discussion sites, rather than via static information on web sites). Sufficient knowledge of English can be considered to be another of these new skills.

- *Strategic skills*, as the term indicates, are of a more strategic nature and include the basic readiness to pre-actively look for information, the attitude of taking decisions based on available information and the continuous scanning of the environment for information that is relevant to work or personal life.

It does not suffice to bring into the picture only the current situation of available digital skills among citizens, a dynamic view is necessary. It is likely that the instrumental digital skills will spread more rapidly in proportion to the degree that ICT (possession) further penetrates society and the technology becomes more user-friendly. However, parallel to this development, the importance of strategic information skills will further increase. Although these skills are not specifically digital (because they are just as relevant in respect to the 'old' media), the recent technological developments ensure that there is an 'intensifying' of knowledge in society and, thus, an increasing importance of strategic information skills.

Directing attention to the digital skills can lead to new guidelines for government policy. Much of the current enthusiasm for the information society is directed, after all, to the extension of the much desired networks and large areas of application such as e-government and e-commerce. Thus, the technological and economic infrastructure have taken off with the lion's share of the energy expended and the social infrastructure has been left in the cold. The citizen's point of view has, it is true, been included in the rhetoric, but in practice it is too often forgotten.

Taking part in the information society demands more than only access to the physical infrastructure. The availability of a PC and a connection to the Internet are necessary preconditions to participate in the information society, but neither is a guarantee of it. Even if the entire population possesses a PC and an Internet connection, it is still possible that there are people who can not take part in the information society. The current efforts of government, population and business and industry to be more rapidly connected to the information highway must therefore be described as being too one-dimensional. Too much attention is being paid to the physical infrastructure and too little to the actual use of all this technology and the necessary associated skills. Therefore, there is a necessity for a shift in the current efforts: away from the technology and closer to the application of the digital skills.

Digital skills are not, however, an inseparable mass, they fall naturally into three main categories. Of these, the instrumental skills, the keyboard skills, are the most significant today, but in the long run they are the least relevant. With the spread of technology and applications and with technology becoming more user friendly, they will become less problematic. Although at the moment the efforts expended on a catching-up campaign are legitimate, in the long run, government's role can be reduced to monitoring and process control. Education, business and industry, and the family environment will take over much of the transfer of instrumental skills.

The even distribution of structural and strategic information skills across the population of the Netherlands, however, seems to fall short. It is not probable that these inequalities will be corrected in the short run. Nevertheless, it is these very skills that will strongly increase in importance because of the increasing importance of technology and information in various areas of society. Citizens with limited information skills will be vulnerable citizens. Those not digitally skilful have a high risk of also being not digitally worthy. In view of the importance of these skills to the social functioning of people in the information society, this societal area deserves to receive direct attention in government policy. Education would seem to be the

most suitable environment for this. In current education policy, however, the attention is mostly directed towards the transfer of instrumental skills and towards the use of ICT as a teaching aid. A clear view of the purpose for which this tool should be used is still lacking.

The above implies that the 'digital gap' that rather often serves as a reason for, and as a threatening spectre looming behind, government initiatives is not solely or chiefly digital. Inequality in the use and possession of ICT follows the same fault line as 'regular' social inequality. Social inequalities in the information society are not so much new and digital, as they are a continuation of an already existing form of social inequality. In this context, we can question a policy that is focussed on social inequality in the information society and which uses technology as a tool without taking into account existing structural inequalities.