Digital Competence and Web Technologies: Analysis of a Research Project and its Instruments

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The digital divide and its many faces

The *digital divide* can be identified with the problem of the access to information, but, for the importance it has in what follows, only the following three aspects will be recalled here (Kling 1998, Bindé 2005, Lévy 1997, Guidolin 2005):

- **lack of technology**: gap between people who can access the communicating and computing instruments and those who cannot,
- a **more complex perspective**, which assigns to technology a part, relevant but not exclusive, in the definition and featuring of the digital divide; the *gap derives from pre-existing differences between the people who are able in the use of technologies and those who are not*,
- at last we have the *gap between those who master content management* (information, knowledge, know how etc.) and the related services, strongly based on the use of technology, and those who don’t.
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The access to information is intertwined with the critical and conscious use people make of the information.

- Information overload generates trouble conditions
- There is a great amount of information, often redundant

Use of information

Filtering and selecting mechanisms of information are poor and sometimes inefficient.
Teaching-learning strategies and systematic use of ICT

A special attention is today devoted to:
- the dependence of students’ performances from their learning styles,
- the dependence of students’ performances from teaching/tutoring styles,
- the structure and use of evaluation and assessment information systems like e-portfolios.

There is common agreement on
- psycho-social elements directly connected to the changes in teaching functions, induced from IT and ICT (i.e., self-perception and perception of the teacher’s function, authority crisis etc.),
- motivational and emotional aspects (inadequacy, anxiety etc.)
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The research project “Internet and School: concerns with the access, equal policy and information management”

Main aims of the project:
- analysis of the literature on: Digital divide, Digital literacy, Digital competence and, construction of a framework for them,
- planning/creation of the information systems to be used for testing and verifying the reference hypotheses in the theoretical model,
- the planning and carrying out of inquiries (involving the schools in the neighborhood of the university of the local unit) to test, verify and possibly complete the emerging theoretical model,
- the carrying out of research products (both on paper and electronic) to spread and share in all educational contexts, to make easier for students and teachers the access to Internet resources and help them in overcoming the difficulties they could meet at school.
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<table>
<thead>
<tr>
<th>Processes</th>
<th>ETS Framework</th>
<th>UNESCO Media Education</th>
<th>Association of College and Research Libraries</th>
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<tbody>
<tr>
<td>Selection</td>
<td>Ability to select</td>
<td>Recognize and determine the extent of the information that is needed</td>
<td></td>
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<tr>
<td>Access</td>
<td>Access: be familiar with way of gathering information</td>
<td>Access: real possibility of accessing the media and producing with them</td>
<td>Efficient access to the information required</td>
</tr>
<tr>
<td>Integration/ Evaluation</td>
<td>Integrate/ Evaluate</td>
<td>Interpretation: of the messages and their values Analysis: critical abilities towards the media Identification: of the sources to understand intentions and objectives</td>
<td>Evaluate the information and its sources Incorporate the selected information into the base of knowledge</td>
</tr>
<tr>
<td>Management</td>
<td>Manage by applying a classification diagram</td>
<td>Use the information effectively on the basis of an established objective Classify, store, manipulate any information gathered or generated</td>
<td>Restructure and generate information</td>
</tr>
<tr>
<td>Creation/ Production</td>
<td>Create: generate information</td>
<td>Access to production using the media</td>
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Framework for Digital Competence Assessment

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Main ideas guiding the planning and carrying out of the Information System: 1) Knowledge construction

a) individual knowledge, the one subjects construct and develop while interacting with reality,
b) community knowledge, the one developed from communities in their entirety;
c) society knowledge (sometimes identified with scientific knowledge) which is well codified, evaluated and approved from individuals and communities (it could be better represented by means of the scientific paradigms).
Main ideas guiding the planning and carrying out of the Information System: 2) Socio-Technical approach to MIS introduction

Whether applying a socio-technical approach for MIS (Management Information System) introduction in corporate and organizations, or hypothesizing socio-technical ideas in MIS use for public institutions, all the elements evidenced in knowledge management (i.e., individual, community and society) must be considered.

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General structure of the Information System

- Individuals
- Community
- Management Information System
- Documents (texts, images etc.) on Digital Competence
- Bibliography on Digital Competence and related fields
- Tests for the assessment of Digital Competence
- Materials to be used at school for improving Digital Competence
- Queries
- Answers
- Answer tests
- Download materials
- General users (society)
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http://www.digitalcompetence.org/

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