Digital Literacy and Digital Competence:
From Certification to Assessment and More

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Hypermedia
WBT, etc.

Towards new teaching paradigms?

Instructionism
Cognitivism
Distance Learning
Years '70s – '80s

Instructionism
Constructivism

CBT

Hypertexts
Hypermedia

Interactive
Constructivism
E – Learning
Years '80s – '90s

Social
Constructivism

Complex Learning
End of Years '90s
- First Years after 2000

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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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<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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</thead>
<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>
</tr>
<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></td>
</tr>
<tr>
<td>Creation/ Production</td>
<td>Create: generate information</td>
<td>Access to production using the media</td>
<td>Restructure and generate information</td>
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A. Martin (2006), suggested further elements for the description of information literacy. Together with the other members of the European research project DigEuLit he belonged to, he hypothesized that digital literacy:

- is the expression of the ability of successfully compelling digital actions in everyday life;
- is specific for every subject and his/her lifestyle;
- is more general than ICT literacy and includes different kinds of literacy, from information literacy to media literacy and visual literacy;
- is based on the acquisition and use of information, on the knowledge of techniques, on personal skills etc.

As a consequence the concept of digital and information literacy are more complex than they appear at a first look and their introduction in the school can be a very complex task, which involves teaching strategies and education.
Knowledge construction

**Individual knowledge** - autonomously built by interacting with phenomena, real or virtual.

**Community knowledge** - being an active part of the community of learners or the community of practice people are immersed in, where mediation and support from peers play an important role.

**Social knowledge** - socially interacting with other individuals in the community and with other communities.

This knowledge construction process is shown as a tri-partition of the individual’s knowledge.
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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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The Project “Internet and School: Concerns With Accessibility, Equal Policy and Information Management”

- the construction of a bibliographical repository for the documents on Digital divide, Digital literacy, Digital competence and on the role of ICT introduction in the school,
- the definition of the elements to analyze and the planning/creation of the information systems to be used for testing and verifying the reference hypotheses in the theoretical model,
- the planning of inquiries and the creation of suitable instruments (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 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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The Project “Internet and School: Concerns With Accessibility, Equal Policy and Information Management”
The Project “Open Learning”

Formerly planned for integrating e-learning strategies in traditional teaching it included the following elements:
- a map of the public and private offices, structures and firms letting people access one of the two certifications (ECDL or IC3); soon after the faculty had to make suitable agreements with them to let students obtain the certification they liked at special conditions,
- the students had to know the difference between what they learnt in the university courses and what they needed for the certification they liked; this target could be accomplished by publicly comparing the certifications’ syllabi with the data transmitted from the lecturers/directors of the courses in the Faculty,
- at last a self-assessment instrument letting students know what topics to study or to update for accessing the certification looked suitable enough for the re-equilibration of the educational offer between ECDL and IC3 certifications and university courses.
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The Project “Open Learning”

- Individuals
- Communities

- Syllabi, documents from lecturers and noticing of the differences
- Self-assessment tests on ECDL and IC3 and noticing of the topics to be studied to pass the examinations
- Bibliography and materials to be used for studying the topics in the ECDL and the IC3 certifications

Management Information System

General users (students) society

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