Pursuing Digital Literacy in the 21st Century:
Reconstructing the School to provide Digital Literacy for All
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From digital literacy to digital competence: documents, analyses, suggestions, frameworks
Main reasons for the growing interest in conceptualizing and promoting *digital literacy* is the evidence of new kinds of digital divide (Kling 1998, Bindé 2005, Lévy 1997, Guidolin 2005):

- the *lack of technology*, which induces a gap between people accessing communication and computing instruments and those who cannot access them,

- a *more complex perspective, which assigns to technology only 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 the technologies and those who are not,

- the last gap concerns the *inability of mastering the content management* (information, knowledge, know how etc.) and the corresponding services, strongly based on the use of technology.
Attempts for the definition of new literacy - 1

The Committee on Information Technology of the Computer Science and Telecommunications Board on the US National Research Council (1999), published the report “Being fluent with Information Technology” by means of which educational institutions were invited to propose to students training activities on the abilities specifically needed in the information society.

The Association of College and Research Libraries (2000) proposed the following definition for information literacy: “the group of skills needed for individual development in modern-day societies” and described the features of these skills.
The UNESCO (2002) defined media education as the education allowing people to develop the understanding of the means of communication used in their society and setting them along the path for the acquiring of the necessary skills which are needed to use these means in relation to others. UNESCO considers these skills as an essential part of the civic training.

For Educational Testing Service (2002) the literacy in ICT is: “the knowledge of digital technology, communications tools, and/or networks, to access, manage, integrate, evaluate and create information in order to function in a knowledge society”.
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<th>Processes</th>
<th>ETS Framework</th>
<th>UNESCO Media Education</th>
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<tr>
<td>Selection</td>
<td></td>
<td>Ability to select</td>
<td>Recognize and determine the extent of the information that is needed</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>
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<tr>
<td>Integration/ Evaluation</td>
<td>Integrate/ Evaluate</td>
<td>Interpretation: of the messages and their values</td>
<td>Evaluate the information and its sources</td>
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<td>Analysis: critical abilities towards the media</td>
<td>Incorporate the selected information into the base of knowledge</td>
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<td>Identification: of the sources to understand intentions and objectives</td>
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<tr>
<td>Management</td>
<td>Manage by applying a classification diagram</td>
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<td>Use the information effectively on the basis of an established objective</td>
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<td>Classify, store, manipulate any information gathered or generated</td>
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<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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Yet another proposal for digital literacy

Martin (2006), suggested further elements for the description of the new literacy. Together with the members of the European research project DigEuLit he belonged to, Martin 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.
A paradigmatic change in education

In the educational world, traditionally based on taxonomies, since two decades students, teachers and scholars have introduced a new word ‘competence’
What is competence?

- By following Morin (1999) it can be … to know his/her own to be …

- Le Boterf (1994, 2000) says that competence is the involvement in action of all human resources (knowledge, skills, capability etc.) and not the set of the resources; it is … to know how to act (or react) … in a given situation, in a given context, to obtain a performance to be evaluated from other people.
Towards a definition of *digital competence*?

Digital competence is to be able in:

- exploring and facing new technological situations in a flexible way,
- analyzing, selecting and critically evaluating data and information, exploiting technological potentials in order to represent and solve problems and building shared and collaborative knowledge,
- while fostering awareness of one’s own personal responsibilities and respecting reciprocal rights/obligations.
There are at least two directions the European Parliament is working on with respect to digital literacy and competence:

- **The Council** made a **Recommendation on key competences for lifelong learning** (2005)
  

- **The Eurydice group** produced a series of reports (2002 - 2005) on teachers’ profession, from their pre-service education to in-service training and career progression.

The above documents are summarized in the following slides.
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Recommendation on key competences for lifelong learning

1. Communication in the mother tongue
2. Communication in the foreign languages
3. Mathematical competence and basic competences in science and technology
4. Digital competence
5. Learning to learn
6. Interpersonal, intercultural and social competences and civic competence
7. Entrepreneurship
8. Cultural expression
The Eurydice’s research group first describes in its reports the changes in the skills needed from teachers, because of the influence on everyday life and consequently on the school of the following aspects:

- **technology development**, with the great role it plays on learning environments and on the way people build new knowledge (i.e., formal, non formal and informal contexts are continuously changing and are influenced from technology and its evolution),

- **lifelong learning** (a need in *knowledge society*) and the possible development of new ways of interacting between school and adults’ education,

- **everyday school living**, often influenced from *multi-cultural phenomena* and depending from the behavior of school staff and local regulations (i.e., local autonomy),

- **the right for all citizens to the highest levels of education**, with the well known problems of the *integration of diversely able people* and of the management of heterogeneous groups of students.
As regards teachers’ education and training the Eurydice’s reports make a separation between the pre-service and in-service phases:

- the comparative analysis of the university courses all over Europe shows that only **ICT basic courses** (mostly basic computer science courses) are explicitly reported in teaching curricula. Other topics (school management, integration of students with special needs, working with multicultural students’ groups and management of students’ behaviors) are not equally considered in the different countries and are not explicitly included among what has to be taught to future teachers (supported or not by the ICT),

- there is **little sensitivity for the teachers’ in-service training**, notwithstanding the frequent changes in regulations and curricula in national systems.

Furthermore in all countries **very little or no attention is devoted to teachers’ updating activities**, notwithstanding they highly impact on professional evolution and they are very important for teachers’ career progression (in more than 50% of the European countries it is influenced from updating activities).