International Conference on Digital Literacy

Pursuing Digital Literacy in the 21st Century: Reconstructing the School to provide Digital Literacy for All
17-18 November 2008, Brunel University, London, UK

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Digital competence assessment: frameworks for instruments and processes to be used by students and teachers
Two main working areas will be discussed

**A Framework for Digital Competence Assessment**
mostly devoted to detect students’ ideas and to help teachers in planning and carrying out instruments and processes based on ICT use.

**A Framework for the Implementation of Practices**
creating an environment to be used by teachers for the administration of teaching-learning processes, letting students and their families look at these processes.

At last, the proposal for an environment including all the described instruments is reported.
**Digital Competence** is:

**Multidimensional** - It implies the integration of cognitive, relational and social abilities and skills.

**Complex** - It cannot be completely measured by single tests and very difficultly can be verified in a short run. It requires more time and different contexts before becoming evident.

**Interconnected** - It is not independent from other key competences like reading, numeracy, problem solving, inferential skills etc.

**Sensitive to the socio-cultural context** - Its meaning could change over time, according to the context and to the different educational settings.
Digital Competence Assessment
Frameworks for instruments and processes for students and teachers

The research group working on Digital Competence Assessment

In 2006 the National project titled “Internet and School: problems with the access, equal policy and information management” was approved and funded by the Italian Ministry of Education.

The people listed below are involved in the project:

Antonio Calvani – University of Florence
Barbara Bruschi – University of Turin
Antonio Iannaccone – University of Salerno
Antonio Cartelli – University of Cassino
A framework for Digital Competence Assessment

- Exploring technological contexts in a flexible way
- Accessing, selecting and critically evaluating information
- Understanding the potential of networking technologies for collaborative knowledge building
- Interacting and using ICT in a responsible way

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A model for Instant Digital Competence Assessment

**Technological Dimension**
- 1.1 Recognizing technological troubles
- 1.2 Identifying interfaces
- 1.3 Selecting the most suitable technological solution
- 1.4 Dealing with Logical Operations
- 1.5 Charting out processes
- 1.6 Distinguishing reality from the virtual world

**Cognitive Dimension**
- 2.1 Dealing with text (summarizing, representing, analyzing)
- 2.2 Organizing data
- 2.3 Selecting and interpreting graphs
- 2.4 Evaluating relevant information
- 2.5 Evaluating information reliability

**Ethical Dimension**
- 3.1 Safeguarding oneself
- 3.2 Respecting on the net
- 3.3 Understanding social and technological inequality
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You took some photos using your digital camera and downloaded them onto your PC. On studying them you see that in some cases the subjects have red eyes (from the flash). How can you correct the photos?

Choose one answer.

- a. It is impossible to correct it
- b. It is possible but you must use a professional or a specialized laboratory
- c. It is possible but very expensive programs are needed
- d. You can modify the photos using programs already on your PC or freely available on the Net
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Your school is twinned with a school in Dakar, Senegal. The e-mail exchange with Senegal students is one of the initiatives for promoting mutual knowledge. You have been told to avoid audio and video attachments in the messages when corresponding with those students.

What do you think about this warning?

Choose one answer:

- a. I think this warning is not important and it can be ignored
- b. I don't agree with it. I don't understand why I cannot send a good video I have
- c. I can't understand why, but I'd accept it
- d. It's right and completely understandable

Please, add a short comment, i.e. explain your answer in a few words.

Answer:
Situated test

It aims at a more complex assessment and is made of different kinds of tests:

- the first set (Technological Exploration) asks the students to deal with an unknown technological interface
- the second one (Simulation) proposes a context within which data must be processed and hypotheses on possible relationships between them have to be made
- in the third set (Inquiry) relevant information must be critically selected and gathered
- at last (Collaborative Work) students must manage documents together by using criteria of collaborative activity (Socioquette).
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**Projective test**

It proposes a series of drawings/pictures aiming at exploring the awareness the subjects have about the emotional and social impact of ICT use, especially when children and intercultural contexts are involved in the situations to be analyzed.

Every drawing and picture comes with structured assignments in order to orient students’ answers towards predefined solutions.

Until now only the instant test is ready for access and can be used by teachers (in Italian and English).
The site hosting the questionnaire is [http://www.digitalcompetence.org/](http://www.digitalcompetence.org/)
The Implementation of Practices as a new pedagogical paradigm

The implementation of practices by means of ICT means the use of an online Management Information System (MIS) for the government of the processes occurring in an organization more than the collection, spreading and sharing of the information produced there.

Two main hypotheses are the bases of this paradigm:

a) Knowledge is made at three different levels (subject, community and society) and each of them influences the others (scheme on the left)

b) When adopting a socio-technical approach in the creation of an information system all the three levels must be considered
The **TETIS platform** (TEaching Transparency Information System)

The information system lets teachers plan their work (modules, didactic units etc.) and carry out it by starting from the planned activities. Students and their families can access the data once they are validated by the class council.

Most relevant features are:

a) Database of students’ e-portfolios
b) Database of teachers’ planned modules (to be shared, or not, with colleagues)
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**TETIS platform** and Teachers’ in-service training (54 teachers)

<table>
<thead>
<tr>
<th>Support given to teaching work by TETIS platform</th>
<th>Abs. values</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the work as supported from the TETIS platform coherent and complete?</td>
<td>53</td>
<td>1</td>
</tr>
<tr>
<td>Is the work with the TETIS platform easy enough to manage?</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>Does the information in the platform completely describe teachers’ work?</td>
<td>47</td>
<td>7</td>
</tr>
<tr>
<td>Does the information in the platform adequately describe students’ behaviours and performances?</td>
<td>41</td>
<td>13</td>
</tr>
<tr>
<td>Does the TETIS platform lead teachers to better programme their work and to obtain better results?</td>
<td>51</td>
<td>3</td>
</tr>
<tr>
<td>Does the TETIS platform make it easier for teachers to personalize the student’s teaching-learning phenomena?</td>
<td>50</td>
<td>4</td>
</tr>
<tr>
<td>Can the TETIS platform improve the dialogue among the teachers in the class?</td>
<td>49</td>
<td>5</td>
</tr>
<tr>
<td>Can the TETIS platform induce the creation of communities of practices?</td>
<td>49</td>
<td>5</td>
</tr>
</tbody>
</table>

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Towards the integration of systems and services - 1

Open Education

Pagina di accesso agli strumenti per la gestione di piattaforme di e-learning e per l'utilizzo di TETIS (Teaching Transparency Information System, sistema per la trasparenza dei processi didattici).

- Piattaforma di e-learning ATutor
- Piattaforma di e-learning Docebo
- Piattaforma di e-learning Moodle
- Piattaforma TETIS
- Corso di perfezionamento "Nuove tecnologie, nuove alfabetizzazioni e innovazione didattica"

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Towards the integration of systems and services - 2

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