

**A2027**

## **GROWING UP IN TORINO: KNOWLEDGE TECHNOLOGY FOR EDUCATION**

MARCO GUASTAVIGNA  
IRRSAE Piemonte

Marco.Guastavigna@irrsae.to2000.it  
Torino, IT 10121, C.so V.Emanuele 70

LAURA CASULLI  
CLAUDIO INGUAGGIATO  
CSP sclr

laura.casulli@CSP.it  
[claudio.inguaggiato@csp.it](mailto:claudio.inguaggiato@csp.it)  
Torino, IT 10149, Via Livorno 60

### **Abstract**

This paper gives an overview at an Italian exercise run in more than 50 primary and secondary schools during the last school year (1999-2000). Introduction of new technology has been enforced through a specific educational approach, designed internally. Technology and Education seems to merge smoother when a proper methodology is carefully applied. Cognitive issues and psychology attention are crucial elements in designing learning patterns where technology can help teachers to learn in new effective ways.

### **Keywords**

Video-conferencing, ADSL, knowledge maps, Internet, multimedia, learning pattern

### **Forewords**

Education and new technology is a key issue in Italy as in all the European countries. The Italian Education Ministry has promoted and funded a widespread project for the last four years that have brought computers and the Internet in each of the over 8000 Italian schools.

Some local Administrations, as the City of Turin, has put additional effort and money in Education, in order to apply new educational models that deal with technology in primary and secondary schools. This article sums up the approach, the results and the area of concerns of a big project called “Growing up in the City with Torino2000” that is currently running in the City.

It is definitely beneficial to stop and make a point at half way. But is it useful to share one’s reflections with a general audience too? We hope it is, whilst an actual assessment of the project will be done only in June 2001.

In any case, we believe that just now it is helpful to outline the main elements of the project because already significant from a cultural and technological point of view. Moreover we are happy to give the reader some Internet web site addresses in the text, in order to integrate and complete the information given here; unfortunately many of them, addressed to local audience, are in Italian only.

## The project

“Growing up in the City with Torino2000” (<http://www.to2000.it/cic/>), that from now on we’ll call CiC, was born in October 1998. The City of Turin has aimed with this project both to support the turn of the education system with new technology both to bring out the City educational service heritage (<http://www.comune.torino.it/servizi-educativi/>) in primary school. The Multimedia Pedagogical Documentation Centre of the City, a department responsible to boost pedagogical awareness and skill in the local primary school teachers, is the driving force of a project.

CiC involves (<http://www.to2000.it/cic/webscuole/index.htm>) different kind of bodies: nursery, primary and secondary schools, laboratories and GAM, the Modern Art Gallery. Each participant has signed a formal agreement with the City Education System Department and appointed a project manager. As example, GAM agreement commits the museum to “share equipment for permanent educational, cultural and social initiatives towards the territory allowing primary schools to use the structures and services as planned in accordance with each School Manager”. CSP is in charge for the technology leadership of the project (<http://www.csp.it>); CSP is a non-profit research Centre, whose shareholders include the Universities of Turin, local Government, industrial organisations (FederPiemonte and Unione Industriale).

The network infrastructure has been provided at no charge by Telecom Italia, the Italian incumbent telecom operator, who signed a strategic agreement with the City called “Torino 2000” (<http://www.to2000.it>) in July 1998. The ADSL broadband infrastructure, put in place in 74 different bodies, makes it possible new way of communication: this network manages good quality video-conference sessions, delivers huge quantities of multimedia data and helps shared activities with real time software. Two multimedia rooms for training and tool testing are at disposal of the project community, together with one multimedia laboratory, where an innovative software tool, called “Hyperfilm” (<http://www.hyperfilm.it>), has been designed and implemented: it allows to comment a MPEG digital video making links to web pages and texts.

A Support-to-Learning Committee, made of teachers, City representative and external experts, was set up to create a conceptual learning model in March 1999. It was co-ordinated by two representatives, of one for the City one for CSP. It worked from May to November 1999; from September 1999 IRRSAE Piemonte (a local branch of the Italian Education Ministry) joined the Committee. In October 1999 it issued a basic educational model to be applied in CiC that includes several learning patterns.

## The Learning Path

The CiC conceptual model and its learning patterns have been presented to the involved schools as an occasion to accomplish an educational project aiming at testing network technology that can help with co-operative tasks. The added value of technology in education can be measured both as driving force of reengineering learning in general both as empowerment of present activities. Though technology literacy is undoubtedly a fundamental aspect for students’ full intellectual citizenship, it cannot be the only motivation to operate. Distance communication can never be self-referred. There must be something to communicate and somebody to talk to. Moreover, distance must be a matter-of-fact and should not be an artificial situation.

The above statements summarise a general vision of technology as a working environment that is oriented to the achievement of wide-ranging educational projects: it is not a self-referring learning mechanism [Never in school we had “book hours” or “note hours”; neither it’s the case to have now “e-mail hours” or “video-conferencing hours”]. We think this is one of the most qualifying aspects of the project. So we wish to draw the reader’s attention on this aspect and we stress that CiC has been the ground of a joint cultural negotiation between Local Government, Technology and Education in general. Technology innovation in Learning is there considered as placement of the technical asset (the “Solution”) in the educational framework starting from an attentive analysis of its specific needs (the “Problem”). So, we think that readers can be interested in the learning patterns proposed to schools because these guidelines are a sound attempt to identify, design, make explicit *a priori* and put in place in several schools the knowledge features (cognitive-relational, pedagogical) of the whole technology exercise. Moreover those patterns have been actually used in an open environment by several teachers and theirs classes.

The following tables summarise these learning patterns. A more detailed information can be found in

<http://www.to2000.it/cic/infopoint/attivita/attivita1.html>

[CSP issued in September 1999 a booklet, titled “CRESCERE NEL DUEMILA: a scuola e in città” that include all the learning patterns (in Italian only). It can be requested at [redazione@to2000.it](mailto:redazione@to2000.it); moreover it’s on the Internet, as .pdf file at <http://www.to2000.it/marcoguastavigna/fascicolo.zip>.]

**Videoconference and resource sharing between partner classrooms in different schools**

| Activities   | Educational aims  |  |
|--|---|--|
| Production of stories with narrative forks   | Think about the way the story is built  | Communicative decentralisation<br><br>De-contextualisation |
| Production of linear stories   |   |  |
| Exploring new topics surfing on the Internet   | Skill training on information search and organisation                                       |  |
| Discussion, survey, research based on information available on the Internet                |   |  |
| Two entry table production based on information available on the Internet                  |   |  |
| Schemas, detailed texts, essays about previous activities                                  | Think about meta-cognitive experience   |  |
| Multimedia reports on learning and working experience                                      | Considerations on use of languages (text, images, audio, video)                             |  |
| Presentations of specific topics concerning their own school (live-show, productions, ...) | Meta-cognitive considerations about “changes” needed by different communication environment |  |

**Making of digital film comments through hyperlinks**

| Activity  | Educational aims  |   |
|---|---|---|
| Narrative film manipulation   | Creativity improvement  | Propaedeutic to comparative consideration about the use of languages (text, images, audio, video) |
| Ironic links in narrative films                                       |   |   |
| Review of narrative films   | Propaedeutic to skill training on information research and organisation |   |
| Production / collection of raw material to be put on the Internet     | Skill training on information research and organisation                 | Comparative consideration about the use of languages (text, images, audio, video)                 |
| Knowledge maps production made to sound links significance mechanisms |   |   |
| Knowledge base production   |   |   |

Here are the two primary assumptions for all the patterns:

- ?? The Computer-Mediate Communication with partners far away – in this case through videoconference and resource sharing – may allow a better interaction than in a classroom, where behaviour are highly self-referenced;
- ?? Working on hypermedia applications in a shared and co-operative way between various schools allows each partner to alternatively be “Author” as link producer and critical “Reader”, who evaluates the knowledge effectiveness of the links when he clicks them. The reader-partner, who is aware of his role as “knowledge warrantee” in the framework of an untold co-operation agreement, is urged to be attentive both to the meaning and coherence of the links both to the flow of the story in order to suggest to the Author-Partner when the result is not clear. The Author-Partner, on his side, will be more conscious of the consequences of his choices, which he can negotiate, clarify and correct in progress.

Each pattern includes guide and comments information, arranged in a consistent way, as shown below. Those four domains, seems to us, a good means to show an educational pattern in details.

|   |  |
|---|--|
| <b>Educational sheet</b>                      | Aims and helpfulness of the pattern  |
| <b>Graphic representation of the activity</b> | Conceptual map, useful in public presentation and discussion   |
| <b>Supervisor sheet</b>                       | Useful means to identify problems and suggest solutions to the teachers as performing the pattern.   |
| <b>Operational sheet</b>                      | Description of the basic tasks of the pattern, description of essential resources at local (in the classroom) and on-the-network as shared services. |

## First reflections on CiC

The first working year has been applied to infrastructure set up and assessment, school manager training, trial run of some learning patterns, web site construction and a mighty e-mail exchange. So, it would not be fair to assess already the project. Anyway, we can make a point on some issues, which are actually meaningful though to be further confirmed.

The main aspect is without fail the “Internet Awareness” which the CiC community has built up. The technology applied allows a rapid and permanent 24-hours-a-day 365-days-a-year wiring [On “flat rate” benefits there are several contributions; between them we reference Russo P., Sissa G., *“Il Governo elettronico. Manuale sull’uso del Web per scuole e pubbliche amministrazioni che progettano il futuro”*, Apogeo, Milano, 2000]. Authors in this book point out that a flat rate policy multiply by five use of the network, increasing confidence in naïf users frightened by their poor use as increasing cost element for the school budget.

Schools were used to dial up connections and a permanent wiring has been a fundamental step forward, because they understood that the digital environment can be a stable resource, to be used in any moment: a chance for both student learning and teacher training. In the same way “working on the net”, as web pages publishing, has increased both in quantity and quality, thanks to the readiness of testing all the steps of the process (the initial design, the coding, the FTP transfer).

Another example of this friendliness is the funny expression “video-circumference” made by a primary school child, as describing her class on-the-net

activity. It was not simply the association of known words to replace unclear situations. The child created a word that well describes what happened on that event. Pupils were horseshoe sitting in front of PCs and were charged of different activities (story writing, drawing). They were called one by one to take part on those works with another class in video-conferencing. This manner had for him the meaning of completing the ring of sitting children. We all learned that video-conference not only allow interaction between classrooms or group of experts during important events, but it eases simple experiences, which do not need high investments and seems to be more successful.

However CiC has also promoted relevant digital events hardly at hand by involved schools in a ordinary manner: for instance, on March, 14<sup>th</sup> 2000, hundred of students in several schools attended to the event “An afternoon with the artists Botto&Bruno” performed at GAM.

We directly joined two learning patterns, investigating on one hand the use of the Hyperfilm tool in two schools and on the other the results achieved working on the Internet in several classes. By all means we perceived an important point: children shown to be able to quickly understand how to highlight and manage the key knowledge elements they handed in their multimedia work. So we introduced, as basic learning mechanism, the use of knowledge maps, supported by proper software (Inspiration – <http://www.inspiration.com> - The Brain – <http://www.thebrain.com>).

Moreover we put at work, pointing out its basic difference, two clue knowledge maps: a row one (as design tool) and a bright one (as powerful means in presentation to emphasise his/her key elements and taste).

It's all by now. We would say much more about our personal experience in this new fantastic world. It's better to close our writing with a "see you in a year" when an actual assessment of the project is ready.

Meanwhile, please feel free to have a look at our progress.

---

Web site – <http://www.to2000.it/cic>

Staff: [redazione@to2000.it](mailto:redazione@to2000.it)

Educational manager: [didattica@to2000.it](mailto:didattica@to2000.it)

Helpdesk (technical info): [helpdesk@to2000.it](mailto:helpdesk@to2000.it)