

# Beyond the School's Boundaries: PoliCultura, a Large-Scale Digital Storytelling Initiative

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## ABSTRACT

Technologies are changing the way we teach and learn in many respects. A relevant and not yet fully explored aspect is that they can support, even entice, students and teachers to go beyond the school boundaries, in spatial and temporal terms. Teachers and learners can keep in touch and work together, when they are not at school; they can access “the world” via Internet; peer to peer remote cooperation is possible; multimedia possibilities provide an incentive to explore the territory, the features of which can be documented in an effective way; digital content can be accessed, created, refined at any moment, at school and from home. This paper discusses this issue at the light of PoliCultura, a large-scale (20,000 users) digital storytelling initiative at the borders between formal and informal education, in which students and teachers collaboratively create a multimedia story. In order to accomplish this task, they interview experts, visit local institutions, involve their families and the community at large, cooperate through social media with remote peers, working at school as well as from home: in other words, they go “beyond the school’s boundaries”. In doing so, they not only get engaged but they achieve substantial educational benefits.

## Keywords

Digital Storytelling, Educational Benefits, Multimedia, Multichannel, Collaboration, Authoring Tool

## Introduction

Information and Communication Technologies (ICT) are dramatically changing the way we teach and learn in many respects. They are helping to diversify the way lessons are given, thanks to multimedia interactive content; they are improving the quality of contact with students and families; they are supporting a number of evaluation and assessment processes. One interesting and not fully explored yet outcome is that ICT can actually support, even entice, students and teachers to go beyond the school boundaries, both in spatial and in temporal terms. In a connected world, people can learn “anytime, anywhere” at “any path, any pace”, as the motto of the Florida Virtual School (FVS) goes. The Florida Virtual School is a striking example of innovation in this sense: it is an accredited, public, online e-learning school serving students in grades K-12. In theory, a student may take the whole program online without ever stepping into a classroom; in practice, only 1% of the FVS students are exclusively virtual; it rather happens that students join specific courses to supplement their studies at school, especially when they are underperforming (<http://www.flvs.net>).

This paper introduces an ICT-based initiative that uses technology to “go beyond the school’s boundaries”: PoliCultura, a large-scale deployment of collaborative digital storytelling at school, with 20,000 students (at June 2012), aged between 5 and 18, involved so far ([www.policultura.it](http://www.policultura.it)). PoliCultura pushes students and teachers to gather materials from sources other than the textbooks, to interact with their territory (institutions, authorities, experts...), to involve families (parents, grandparents), to communicate with remote peers through social media during and beyond school hours, in the end conjuring up highly innovative multimedia and multichannel digital stories (figure 1) that are shared through an international portal (figure 6). PoliCultura mingles formal and informal educational aspects: the whole activity is under the teachers’ supervision and framed within the curriculum, but at the same time students are pushed to organize themselves and to interact with the “external world”. The process of story-creation fosters the achievement of substantial educational benefits, many of which related to this “opening”, which is facilitated and supported by technology.

The paper is organized as follows: after a section on the “state of the art” of digital storytelling for youngsters (section 2), we plunge into the PoliCultura initiative’s description (section 3), with a specific focus on selected examples where the breaking of the school’s boundaries is quite evident (section 4). Some data on the evaluation are reported in section 5, but the reader is reminded that a full account of the educational impact is to be found elsewhere (Di Blas, Paolini, 2012). Eventually in section 6 we draw the conclusions and highlight our future steps of research.



Figure 1. A multimedia, multichannel story by a preschool class

## State of the Art on Digital Storytelling

Digital storytelling (plus or minus the adjective “interactive”) is quite a huge field encompassing different phenomena and very different approaches (Iurgel et alii, 2009).

In this paper we focus on the educational aspects of digital storytelling in formal education, with students as authors rather than consumers. By digital storytelling we mean “the modern expression of the ancient art of storytelling” where “digital stories derive their power by weaving images, music, narrative and voice together, thereby giving deep dimension and vivid color to characters, situations, experiences, and insight” (definition by the the Digital Storytelling Association; <http://electronicportfolios.com/digistory/>). The Association for Progressive Communication further clarifies the concept: “Digital stories are stories produced, stored and disseminated using digital media. The focus is on the story tellers’ control over the medium, choice of words (narration), pictures and music so that the process is as powerful for the story teller as the end product is to the listener.” (<http://www.apc.org/en/node/10567>).

Authoring tools for digital storytelling have been mainly developed for very young children, being the educational value of authoring a story strongly backed by those pedagogical theories that consider learning as knowledge building rather than knowledge transmission (Feher, 2008; Jonassen, Land 2000). A number of tools have been developed to support this activity, both in the academic and commercial arena. Still, commercial products tend to see users more as listeners than authors; if they are considered as authors, then they are generally provided with readymade characters with which they can play role-games at most. These products are often CD-rom based, they impose strong limitations to creativity and almost never allow cooperation or sharing of the stories with other peers (Antle, 2003).

Academic prototypes and projects tend to afford more creativity (Cassell, 2008; Gattel, 2011). Many approaches make use of physical elements to trigger the process of story-making. For example, MIT’s StoryMat records and recalls children’s voices as they play with stuffed animals on a colorful, story-evoking, quilt (Cassell, Ryokai, 2001). Other approaches, like SAGE (Bers, Cassell, 1998) and PET (Druin et al., 1999), integrate tangible elements (like stuffed animals) into the technology-enhanced storytelling process. StoryRoom also adopts a physical approach by providing kids with room-sized interactive storytelling spaces where they share a theatrical experience (Alborzi et al., 2000).

More recent approaches exploit the affordances of tablet PCs technology. ShadowStory, for example, is a digital storytelling system inspired by traditional Chinese shadow puppetry. Using a Tablet PC children at primary school level create digital characters and perform live stories together on a projection screen (Lu et al., 2011). TinkRBook by MIT also makes use of tablets; aimed at very young children (pre-schoolers), it supports “storytelling behavior” since kids (by touching the interface) can modify the unfolding of the story (Chang, Breazeal, 2011).

Other approaches provide children with online tools for supporting the story creation process. A recent development is G-Flash, an authoring tool for primary school children that supports story creation using illustrated flashcards, with characters and scenarios (Jumail Rambli, Sulaiman, 2011). Wayang is another online authoring platform, developed by the dimeb Research Group of Bremen University, meant to allow students to express their cultural diversity. Children create either individual or collaborative stories by using digital puppets (Widjajanto et al., 2008).

Virtual environments are also used as “places” in which the stories can unfold. For example PUPPET is an autonomous agents-populated virtual environment where children play multiple roles in creating narratives (Marshall, Rogers, Scaife, 2002).

Collaborative storytelling has also been explored, but mostly at experimental level (Gottel, 2011). MOOSE crossing, for example, allows kids to cooperatively design and build objects and characters in a virtual space (Bruckman, 1997). The FaTe project allows very young kids (aged 5 to 8) to develop stories together in a shared 3D environment (Garzotto, Forfori, 2006). ToonTastic is a tool, still in its beta phase, meant to enable children to collaboratively create a story using an interactive, multiple-pen display (Russell, 2010). Digital drawing, especially if collaborative, has also been considered a form of storytelling, like in the KidPad project (Druin et al., 1997; Benford et al., 2000; Hourcade et al., 2002). Fails et alii (2010) present a system where children on a school trip collaboratively create a story using mobile applications.

Eventually, CBC (Canadian Broadcasting Corporation) 4Kids’s StoryBuilder is one of the rare examples of large-scale exploitation of a digital storytelling system. Children can create multimedia comix-style stories, based on the typical mechanism of “add-a-sentence-to-a-story”. They can then save their stories in an online personal space and also publish them and share them with friends, via email (Antle, 2003).

With respect to the above tools and programs, we can say that the uniqueness of PoliCultura (and its authoring environment) lies in the blend of the following aspects: (1) the class as a whole (not individual students) collaboratively creates the story; (2) the tool is not aimed at very young users exclusively but encompasses all age-ranges, from pre-schoolers to adults; (3) the creation process mingles formal and informal education: the whole work is coordinated by the teacher but many of the activities are performed out of the school following the students’ own initiatives; (4) there is always an educational goal, i.e. stories are never told/created for the sheer pleasure of telling (though they do give pleasure and satisfaction to their authors); (5) the technical tool is (very) easy and still the result is “technologically” surprising for the students, their teachers, their families etc., and provides a strong sense of accomplishment; (6) the final result undergoes a competition and it is then made public, providing additional motivations for the authors.

## **The PoliCultura initiative**

In 2006, HOC-LAB, a laboratory at the DEI (Department of Electronics and Information) of Politecnico di Milano, developed the first version of a tool and an overall approach to multimedia production which was baptized “Instant Multimedia” (Di Blas et al., 2007). The rallying call was simplicity: non-tech savvy authors had to be enabled to develop, quickly and at low cost, multimedia presentations (with images, videos, audios, texts etc.). HOC-LAB had already gathered at that time a many-years’ experience in the field of education, with schools of all grades. The new tool was used for launching a new initiative: a competition for multimedia productions. In the first year, the competition was open to high schools only (grades 8-12 roughly). Participation was open to classes as a whole, not to individual students, to foster collaboration (Di Blas et al., 2010). During the first year a pilot project was run in a primary school in Milan (Italy). It was successful, so the following year, 2007, participation was open to primary schools and junior high schools too. In 2007 a preschool spontaneously took part in the program (Di Blas, Boretti, 2009); again, the result was positive, so from 2008 PoliCultura came to include all school grades.

If we consider that the authors of this paper use the authoring tool in higher education too (at University of Italian Switzerland and at Politecnico di Milano), we can say that PoliCultura is an example of “one size fits all” initiative.

## **Organization**

Every year, the call for participation is disseminated through a number of channels.

- The local branches of the Italian Ministry for Education, at regional and at district’s levels
- More than 40 websites and blogs discussing education-related issues
- HOC-LAB’s mailing lists of teachers
- Direct mailing to all public and private Italian schools
- Public regional institutes for research on education

The call is issued in October and it is reiterated once a month, from November to January. The work must be delivered in March. A jury selects the best works according to the main competition's categories, which correspond to the Italian school levels:

- PoliCultura First. For preschool, with students aged between 3 and 5
- PoliCultura Kids. For primary schools, with students aged between 6 and 10
- PoliCultura Junior. For Junior High School, with students aged between 11 to 13
- PoliCultura Senior. For High School, with students aged between 14 and 18

Participants can decide the subject of the story quite freely, provided it is somehow related to school's curricula. In addition, some special tracks are proposed, also thanks to the sponsors that have shown interest in the initiative over the years. Table 1 shows the list of tracks for year 2011-12.

Table 1. The tracks of PoliCultura 2011-12

<b>Cultural heritage</b>	Describe a monument, place, church of your territory, or describe your visit to a cultural institution (e.g., a museum). What are your impressions?
<b>Your roots</b>	Describe the history, folklore, traditions of your territory. Make people curious about it!
<b>School trip</b>	Describe a particularly interesting school trip.
<b>School 'experience'</b>	Describe an interesting educational experience: a lab, a research, a project...
<b>Your Resurgence (the Italian unification movement)</b>	Describe notable historical figures, places, events from your territory related to the Resurgence. What evidences are there of this important historical period? How much do people, and youngsters in particular, know about it today?
<b>Food and Nutrition</b>	What is your relationship with food? What do you eat (at home, at school)? How do you choose your food? What do you know about the way vegetables are grown or animals are bred? <i>Sponsorship: Anagribios, National Association for Organic Agriculture.</i>
<b>Science and technology</b>	Tell the story of your "discovery" of science and of your relation with technology. How has technology changed the way you live? <i>Sponsorship: Science and Technology Museum of Florence.</i>
<b>Top 5 things to see and do in your town</b>	Entice potential visitors to come and see the best of the place where you live! <i>Sponsorship: Venere, the online booking system of Expedia.</i>
<b>Free choice!</b>	Tell us about whatever you feel interesting to tell!

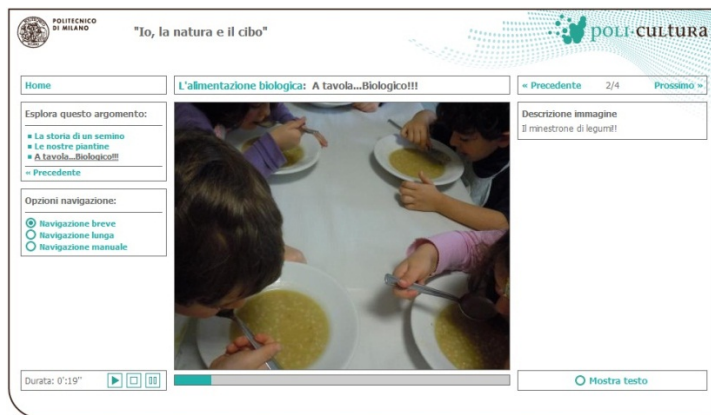


Figure 2. Special award by the National Association for Organic Agriculture to a preschool class

Participants have three months circa to complete the work. In order to create the multimedia story, they are given free access to an authoring tool developed by HOC-LAB, 1001stories, a free web service that does not require any software installation. In April-May a jury composed of HOC-LAB communication experts, representatives of the sponsors and school teachers decides on the short list of finalists and the winners. The awards ceremony takes place in June at Politecnico's premises: finalists from all over Italy are welcomed by authorities both from Politecnico and from the Italian ministry of Education, which officially acknowledges the initiative.

## A story with 1001stories

A story done with 1001stories is composed by an audio commentary, complemented by a slideshow of images and videos plus text (the audio transcript), visible on demand (figure 3).

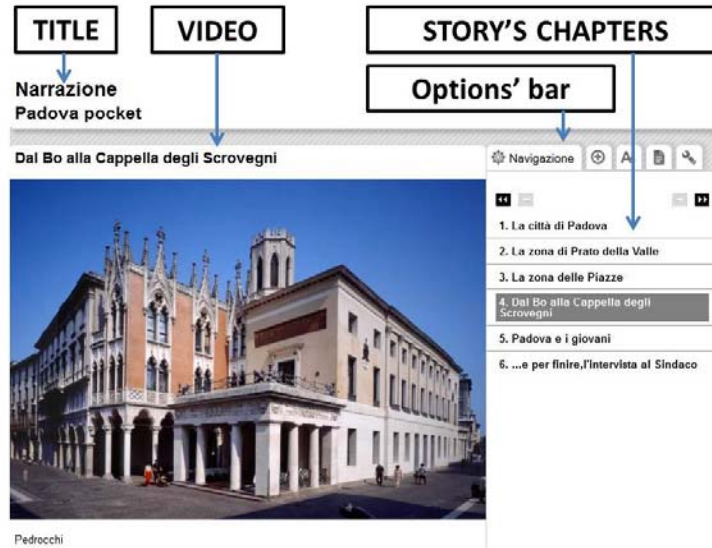


Figure 3. The web version of a multimedia story

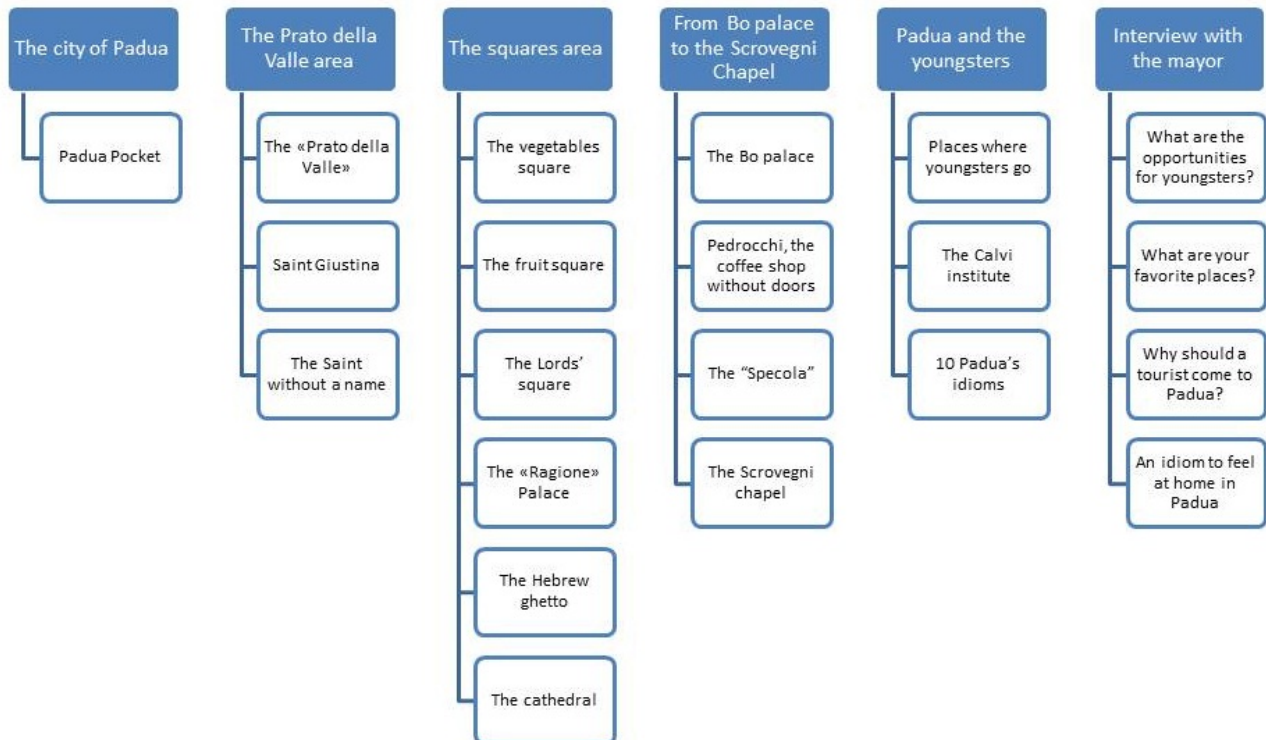


Figure 4. Example of hierarchical information architecture (“Padua pocket”)

A story is made up of a set of content elements, composed of audio, slideshow and text, each lasting one, two minutes on average. These elements are what Alexander and Levine define as “micro-content”, i.e., small chunks of content that contain an idea or concept, one of the characterizing aspects of the web 2.0 storytelling (Alexander,

Levine, 2008). These elements can be organized according to two, pre-defined, information architectures: (1) a two-levels hierarchical schema, with a set of topics (usually between 5 to 8) each with a set of sub-topics; (2) a linear schema, with a simple sequence of topics. Figure 4 shows an example of hierarchical schema: the set of topics and subtopics of “Padua Pocket”, a story done by a high school class from Padua, the beautiful Italian city chosen by Shakespeare as setting for “The taming of the shrew”. A class of foreign students is visiting the Padua’s school: to help them go around and enjoy the town’s highlights, the students have figured out a mobile “pocket” guide, complemented by interesting features like a handbook of Padua’s idioms and an interview with the town’s mayor.

Figure 5, instead, shows an example of linear story (by a Swiss junior-high school): students go on a trip in a wood, looking for “erratic boulders” left over by glaciers and carved by primitive folks.



Figure 5. Example of linear information architecture (“Erratic boulders of Gandria”).

Obviously, the first schema requires more effort in terms of content organization and production, while the second is less demanding. Participants can freely choose between the two, according to how much time they mean to devote to the story-making activity.

Interaction possibilities vary according to the device. For example, in the web version, the user can choose between an automatic fruition of the story (either the sequence of macro topic or the sequence of all the topics and sub-topics) or free choice of topics and sub-topics. On iPhone or iPod instead, playlists are created, grouping for example all the main topics or a single topic and its sub-topics.

### How to create a story

Participants work by themselves, without any form of tutoring. They are provided with a short manual (12 pages) where our own experience with creating stories using 1001stories is distilled. The manual suggests the steps for creating a multimedia story:

1. *Topic selection and gathering of the material*  
Generally speaking, the teacher puts forth a proposal for a topic; according to the students’ age, the topic is accepted or put under discussion. Sometimes the topic is something new; other times, the topic is related to some form of activity the class has already performed or is involved in (like for example a research, a project, a school trip...). In any case, the raw material for the narrative has to be gathered. If it is about something already known, it is a matter of selection, typically, from a huge heap of documentations. If it is about something new, then sources must be found. External actors get often involved, like for example the families, the local museum, experts, authorities, etc.
2. *Content organization*  
The information architecture is sketched, according to one of the proposed schemas: either the hierarchical or the linear one (figures 4 and 5). The titles of topics and sub-topics are defined. Students are usually organized into groups.
3. *Content preparation*  
The texts are written, synthesizing the various sources. The suggested length for each piece of content is between 120 and 200 words, corresponding to one minute of audio. Once the texts are finished, the audios are recorded. The visual communication is prepared: pictures, either taken by the students themselves, or found on the internet, scanned drawings, power point slides, etc. audios are recorded (sometimes with background music).
4. *First version*  
Audios, images and texts are uploaded in the authoring system and the first version is generated. It must be noted that nothing prevents uploading the single pieces of content (e.g., some images, some texts...) even before they are all ready.
5. *Evaluation*  
The first version is analyzed thoroughly. The most important check is whether it works from a communication point of view. The ‘evaluators’ (the students themselves) have to try all possible forms of interaction. For example, she they have to try whether the sequence of main topics makes sense as playlist.

## 6. Final version

Once all the flaws are found and amended, the final version is ready. 1001stories then generates automatically the various versions for the different channels.

The above steps are quite similar to the four stages that the Instructional Technology Department of the University of Houston (University of Houston, 2009) suggests to create a digital story. At stage one, the storytellers select the topic and gather the resources; at stage two, they select and organize the material; at stage three, they finalize the story in digital form and at stage four they present it to a reviewer to get feedback.

## The authoring tool

Multimedia stories are created using the 1001stories environment. The current version is a highly sophisticated system that allows creating applications for a number of “channels”: web for PC, web for mobile, podcasts, iPad (and tablets in general), multi-touch tables, YouTube, standard phone (with audio-only content), etc. 1001stories has 3 main components: (1) an authoring environment where the various pieces of content are authored; (2) a number of generation engines that generate the proper information architecture, organizing the content items in a structure suitable for interactive usage; the information architecture is described via XML, according to a set of XML-schemas; (3) a number of delivery engines, implementing the various interactive formats over various platforms. The technical environment’s complexity is all internal: the final user finds it extremely easy to use. The average time for managing its basic commands is 20 minutes, for a staff of non-technical people.

## A mosaic of stories: the PoliCultura portal

All the stories are gathered in a brand new, state of the art, portal ([www.policultura.it/portal/](http://www.policultura.it/portal/)). An advanced exploratory application allows users to access the stories using different canvases, highlighting different features, selecting different facets, etc. (fig. 6). Continuous feedback provides the user with information about how the different facets are correlated (e.g., the discipline and the type of learning experience, the specific subject and the level of schooling). Facets can also be correlated with words’ clouds derived from the abstracts (in English and Italian) of the stories. Other facets concern more pedagogical aspects. Users can drop their comments, though they cannot rate the stories, for obvious pedagogical reasons. PoliCultura-portal is a very large collection of students-generated multimedia content.

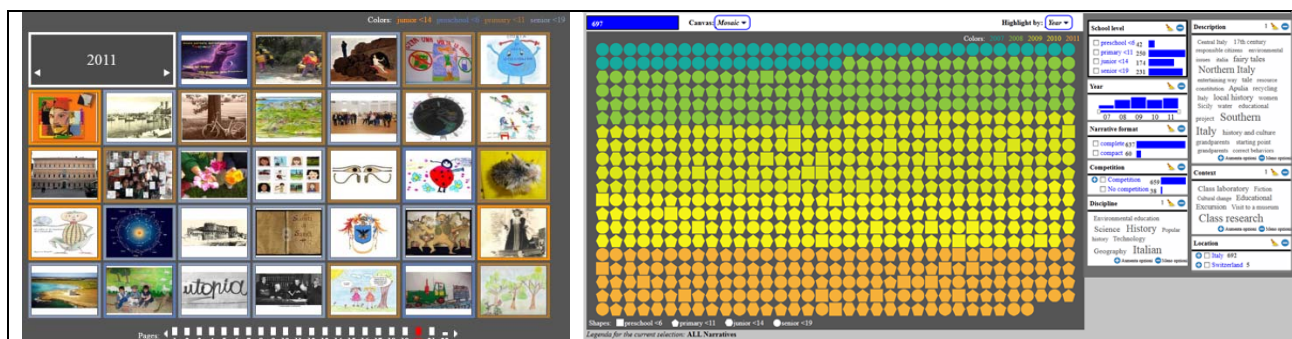


Figure 6. The PoliCultura portal, two views: thumbnails (left) and mosaic (right).

## Beyond the school’s boundaries

The stories published on the portal, at September 2012, are 697; in June 2012 more than 150 additional narratives were collected, and they will be published by October 2012. Narratives are related to different school activities:

- 35% are about a visit to a cultural institution;
- 41% benefit from an expert’s contribution (e.g. a museum’s curator);
- 23% explicitly involve the contribution of students’ relatives (e.g. a grandmother);
- 10% involve in some way or another the local community (e.g. the city major, a local institution);

- 14% are about an activity outside of the school premises (e.g. a school trip);
- 29% imply (collaborative) working of the students and the teachers from home, beyond school hours.

So, in a large number of cases, storytelling implies activities outside the school's premises and beyond the school hours. This latter aspect is facilitated by the fact that digital content (texts, images, audios...) can be prepared anywhere and at any time and that the tool (1001stories) is a free web service that students can access from home (if the teacher shares with them the account, which is often the case, especially at high-school level).

Table 2 shows some stories which exemplify the above aspects.

Table 2. Examples of stories

	<p><i>Roman Milan</i> – primary school, 2006 A primary school goes to visit the local archeological museum, than roams the town looking for evidences of its Roman glorious past. Children are divided into groups, each in charge of a specific topic (the baths, the theater...). They interview experts, take pictures, make and scan drawings to illustrate their journey into the past. <a href="http://www.policultura.it/narrazioni/esempi/milano_romana/meuslive/meuslive.php@projectid=253&amp;wget=1.html">http://www.policultura.it/narrazioni/esempi/milano_romana/meuslive/meuslive.php@projectid=253&amp;wget=1.html</a></p>
	<p><i>A guide for students who are tired of sitting at their desks</i> – junior high school, 2011 This story is about a cultural visit to the Romanesque cathedral and the museum of Assisi (a small town in central Italy). The pedagogical implementation of the experience was quite sophisticated: the students are divided into groups before the visit, they are in charge of taking interviews with the museum's curator and an art-historian during the visit, they get back to school to elaborate the materials and then spontaneously go back again to the cathedral and the museum to gather additional materials. The result is a rich (in terms of content) and engaging guide to the famous cultural venue. <a href="http://www.1001storia.polimi.it/narrazioni/p_777/webpackage/webplayer/index.html">http://www.1001storia.polimi.it/narrazioni/p_777/webpackage/webplayer/index.html</a></p>
	<p><i>Let's go to school with grandma Daisy</i> – primary school, 2011 How was school at our grandparents' time? Grandma Daisy plays the expert and takes the kids back in time, showing how different things were when she was the kids' age. <a href="http://www.1001storia.polimi.it/narrazioni/p_1003/webpackage/webplayer/index.html">http://www.1001storia.polimi.it/narrazioni/p_1003/webpackage/webplayer/index.html</a></p>
	<p><i>Padua Pocket</i> – High School, 2010 This story is by definition "beyond the school's boundaries": it is a mobile guide for the city of Padua, done for a visiting class of foreign peers. "This multimedia guide is called 'Padua pocket'. You can download it on your MP3 player. We will tell you about our town's highlights, Hope you enjoy it!" Moreover, the final part of the story is an interview to the city major. <a href="http://www.1001storia.polimi.it/narrazioni/p_461/webpackage/webplayer/index.html">http://www.1001storia.polimi.it/narrazioni/p_461/webpackage/webplayer/index.html</a></p>
	<p><i>The Erratic Boulders of Gandria</i> (Switzerland) – junior high school, 2011 A Swiss class undergoes an unexpected adventure during a school trip: some of the kids get "lost", maybe kidnapped by spirits of the woods. The story develops according to a script where each kid plays a role and it is complemented by pictures taken by the students themselves during the trip. <a href="http://www.1001storia.polimi.it/narrazioni/p_807/webpackage/webplayer/index.html">http://www.1001storia.polimi.it/narrazioni/p_807/webpackage/webplayer/index.html</a></p>
	<p><i>From the "Nabucco" to the Mameli Anthem</i> – 3 primary school classes, 2011 Three classes remotely located cooperate to tell the story of the two (eventually one) Italian anthems. They state in the introduction that "new technologies offer schools the opportunity to innovate and renew their teaching/learning environment, exploiting new ways of communication, like social network and skype, in a web 2.0 approach." <a href="http://www.1001storia.polimi.it/narrazioni/p_914/webpackage/webplayer/index.html">http://www.1001storia.polimi.it/narrazioni/p_914/webpackage/webplayer/index.html</a></p>



## Evaluation

PoliCultura is an ICT-based program that not only engages students (as it may be expected) but also provides them with substantial educational benefits. It can therefore be embedded into school's curricula.

Every year, the educational impact of PoliCultura is evaluated through a number of means: online surveys, focus groups (during the celebration day of the competition), Skype interviews to the teachers as well as the analysis of the students' stories. We do not collect data from students directly (which would be easily doable) for several reasons: first of all, it is normal for teachers to assess their students' learning rather than for students to perform self-assessments; therefore we think that teachers can be quite reliable, and more reliable than students themselves. In addition, we want teachers to be co-designers of the experience and therefore we think that it is important that they pay attention to the learning process of their students. Finally, we think that it is quite likely that, with good teachers, the two evaluations are not so different. Our previous experience, in fact, with another large-scale set of programs (based on MUVES), with more than 9.000 students involved, indicated that students' self-assessment about benefits follows quite precisely the same curve of their teachers' assessment, with only 10% circa less positive (Di Blas, Poggi, 2007). The small difference is likely due to the fact that when teachers evaluate the performance of the class, they tend to evaluate the "average", implicitly giving less relevance to small groups of disaffected students. These less performing students provide, in general, negative evaluations that account for the small delta.

Almost all the teachers who take part in PoliCultura fill in the online survey. There are two reasons for the high response-rate: first of all, our staff is very active in pursuing teachers and "persuading them". Secondly, filling in the survey is a pre-condition for actually taking part in the competition (some teachers complete the work but do not take part in the competition).

Data show that a number of benefits are achieved, ranging from increased knowledge of the subject at stake to improved social skills (group work) and attitudes. These benefits are widely discussed elsewhere (Di Blas, Paolini, 2012); for the sake of this paper's argument, we will analyze only the data which can be put in relation to the "going beyond the school's boundaries" aspect.

First of all, interacting with external institutions and experts is one of the elements that foster achievements in terms of increased knowledge (fig. 7). Students get a first-hand experience of works of art, archeological findings, exhibits introduced to them by an expert on the subject. Since they know they will have to build a "story" on top of the experience, they do not act as passive listeners but rather take on a quite active role, as interviewers. They get set before the visit, oftentimes preparing their interview's schema and going through preparatory materials. During the visit (or when meeting the expert) they manage to get the best out of the experience. Of course this interaction is not the only reason behind increased knowledge: transcribing the interviews, synthesizing the materials, making additional researches through the internet and libraries do add to this benefit. But the real-world experience is surely the main trigger of this positive process.

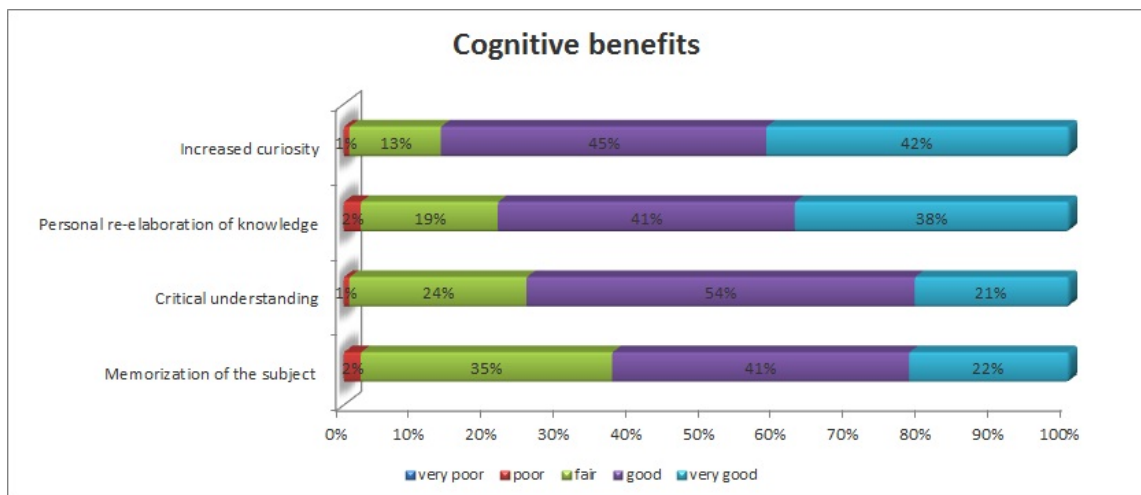


Figure 7. Teachers' evaluation of the students' achievements of cognitive benefits (127 teachers, year 2011)

Many of the factors that determine the high level of **motivation** participants to PoliCultura experience are related to the informal education aspects of the program. The competition at national level is for sure one of the strongest. Other factors are the involvement of out-of-the-school actors (like the families and the local community), with whom the final story will be shared, and the public visibility of the result (all the stories, as we said, are published in the online portal). Data show that motivation is quite high even for the normally disaffected and underperforming students (fig. 8). Again, the external context is a key factor.

A teacher (from pre-school) reports: “to motivate the kids, we told them they were about to create a multimedia book that their parents and many other people would read [...] and actually, when the work was finished, it was shown in the local theater and even the town’s major came to see it” (Di Blas, Boretti, 2009).

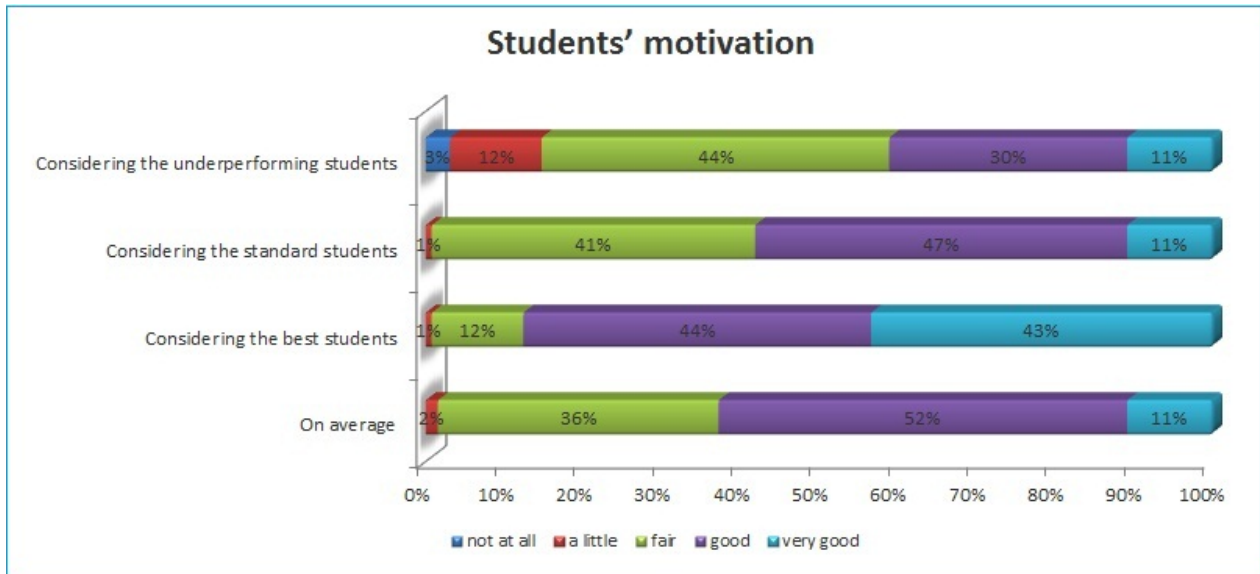


Figure 8. Teachers' evaluation of the students' motivation (127 teachers, year 2011)

Eventually students' improvement in **communication** skills and also in “media literacy” (i.e., the ability to decode, understand, and write through, and with, all forms of media, in specific with text, audio and images in multimedia form), is quite substantial (fig. 9). Similar results are reported by Xu et al. (2011) on the efficacy of digital storytelling to teach writing skills (see also Gakhar & Thompson, 2007 and Robin, 2008).

A teacher reports: “since texts had to be short and ‘to the point’, students have developed good analysis and synthesis abilities, which in normal school activities are not triggered”.

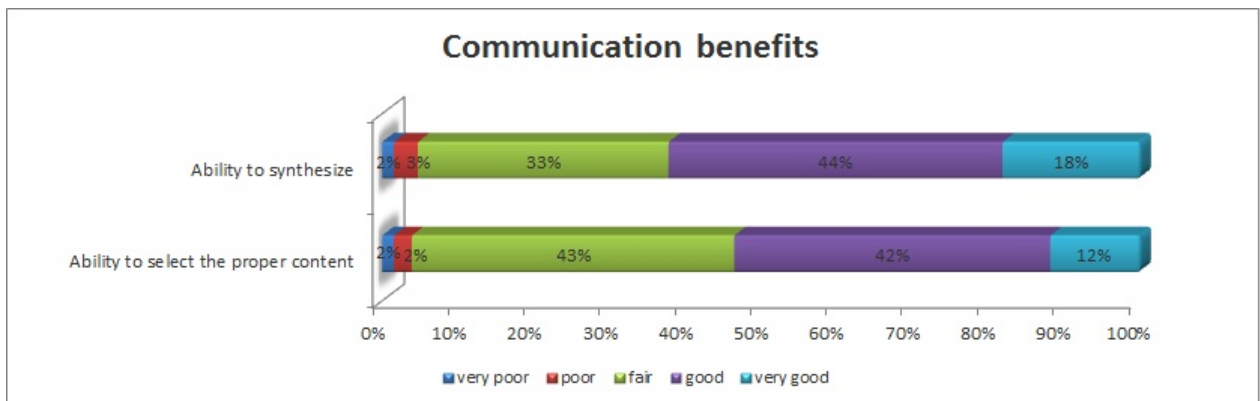


Figure 9. Teachers' evaluation of the communication benefits (127 teachers, year 2011)

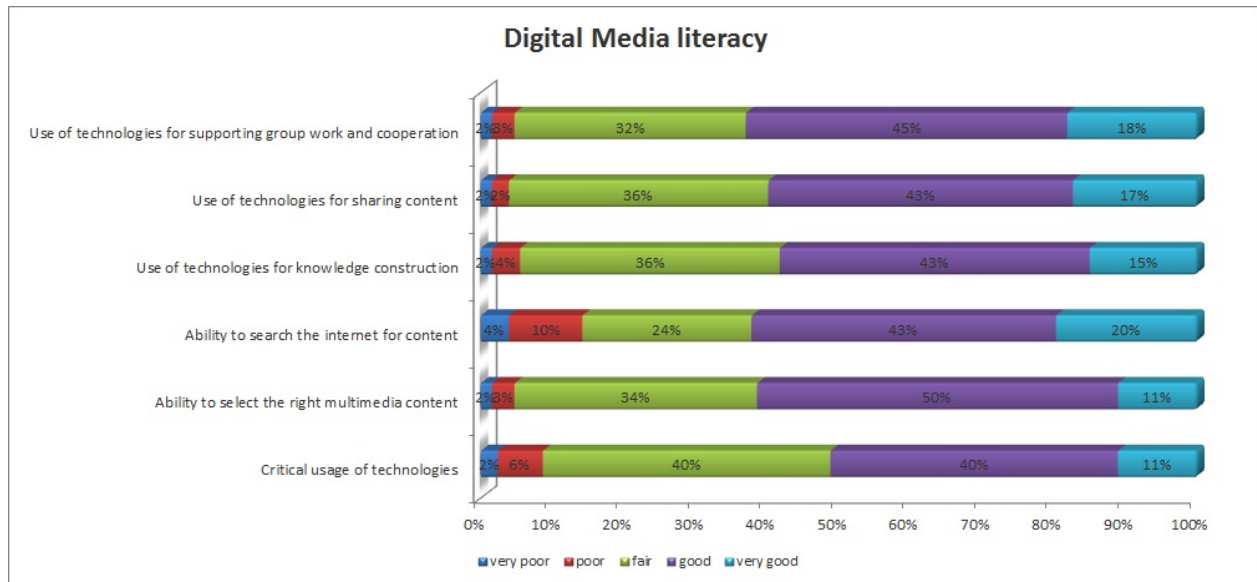


Figure 10. Teachers' evaluation of the media literacy benefits (127 teachers, year 2011)

## Conclusions

PoliCultura shows that it is possible to bring innovation in a conservative environment like the school, blending formal and informal education while promoting out-of-the-classroom activities. Data show that in doing so students achieve substantial educational benefits, many of which specifically related to this approach: the vast majority of participants involved other subjects like families, cultural institutions, museums, local associations of various kinds, local tourist bureaus, politicians, experts of various subjects, book writers, and even old immigrants. Students roamed the territory using various kinds of devices, like their cell phones or digital cameras, to gather content that was then refined in the classroom.

There are many reasons why educational activities should not be confined to the standard space-time constraints of classroom and school hours. The most important reason is probably social pressure: the notion of being “always connected” is pervasive in the society, and it is taking ground at school too. The danger is that the very foundations of the school systems can be shaken by this evolution. PoliCultura shows a good and working compromise: schools can get out of their boundaries (in several ways) still retaining control over the learning process and ensuring that sound educational benefits are gained. As data show, is not just matter of “fun and engagement”; it is also matter of cognitive and behavioral improvements.

Our plans for the future include widening the range of narrative formats, and also suggesting (and supporting) different workflows for narrative creation. From a research point of view, we intend to better investigate the correlation between the “implementation strategy” (class organization, activities scheduling, groups' organization, interaction with external actors...) and the educational benefits, as they are measured by the teachers. From an organization point of view, we plan to scale up PoliCultura to international level, European first and then worldwide.

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