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About Piero Matematico (CD)

Daniela Gentilin and Ennio Bettanello reflect on the realization of their project for the CD *Piero Matematico*.

Daniela Gentilin:

The Istituto Tecnico “S.B. Boscardin” of Vicenza is a technical high school with two focuses: art and biology. The art school is one of the few autonomous experiments that still exist at the Italian high school level, and is the only one of its particular kind. It differs from a normal Italian secondary school (*liceo*) in the emphasis given to technique and technology, in the quest to keep up with the continual evolution of expressive means through numerous and well-furnished laboratories. This environment offers new points of departure and facilitates the collaboration between teachers of different subjects. I teach mathematics to the “artists” and for many years have sought the stimulate interest in mathematics through different approaches in methodology.

I think that all mathematics teachers have been asked the same question many times: “But what good is mathematics?” This can be answered in several ways: it helps us to understand the world; it helps to teach the mind logic and deduction; it should be studied simply because it is beautiful. Usually the reactions to these answers on the part of the students are annoyed yawns or ironic smiles. To stimulate their interests more convincing arguments are required.

In the course of the last few years I had my students undertake many projects to deepen their understanding of themes that are common to art and mathematics, such as symmetry, the golden section and regular polyhedra. In *Piero Matematico* these projects to a certain extent come together, along with my personal passion for computer science, which brought me to see in multimediality the instrument that is most apt to express content at once diverse and closely related. The first, embryonic idea came to me after reading the stimulating article by Enrico Gamba and Vico Montebelli [“Piero Matematico”, *Le Scienze* **331** (March 1996): 70-77]. It took about two years to gather the material, gather the supports (above all by searching the web), and translate everything, with the help of a colleague, into hypertext format. Because of how it originated the formulation of the project is didactic and the arguments chosen and dealt with so as to be comprehensible by students at the high school level. The final result is a CD-ROM that has generated a satisfying interest among our “mathematical friends”. It was recognized at the Regional Fair of the Veneto entitled “Multimedia and Schools: Navigating through Informatics”, winning the first prize in the category for teachers. It was mentioned in the web site dedicated to mathematics of the University “Bocconi” of Milan (<http://www.matematica.uni-bocconi.it>). It seems that all the labor that went into the project has born fruit.

Above all, now when the students ask me, “What good is it for an artist to study mathematics?” I smile with a gleam in my eye and whip a CD-ROM out of my pocket!

Ennio Bettanello:

The more time that goes by the more I see *Piero Matematico* as a project of craftsmanship that is typical of dilettantes, because it seems to touch on the surface of so many areas and goes detachedly from the age of antiquity to the present age. I don’t believe however, that in the context in which it is born that this presents a drawback. We neither desired nor were in

conditions to say something new about this subject, which would have required a competence on the level of professional researchers. At least initially, our aim was to create, through multimedia, a series of open pathways that would connect areas knowledge that were apparently very distant from each other. After all, the point of departure for *Piero Matematico* was the regulations governing the orals of the state exams at the high school level, for which the student is expected to research a multidisciplinary subject of his or her choice and present it to the commission in an acceptable form, including a multimedial one. We intended the project to serve for acquiring or perfecting a course of research, and the selection and presentation of information by means of a project that could be used as a methodology by the students as well.

It seems a homemade project to me as well because I am not an expert in multimediality, with neither formal study nor a diploma in information science behind me. I teach “the painterly disciplines” at the Institute. This is a subject that tends to craftsmanship rather than artistry (art is not always disciplined), but while the context of a technical high school is still anchored to a painterly tradition, we welcome a confrontation with new instruments to produce images. *Piero Matematico* was a new experience in a new field for me and I believe that this can sometimes be seen in the graphic solutions adopted.

One thing that I thought afterwards is that hidden in *Piero Matematico* is a challenge: to put together one of the students’ most-loved disciplines with one of their least-loved. Is it possible that the interesting, gratifying and “beautiful” things can belong to one discipline only, while the other contains only the difficult and tiresome ones? Looking under the surface of art and science one discovers that indeed that is not the way things are. You can take Piero della Francesca’s word for it.

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