

## Scientific laboratory recovered in former normal school in Parma, birth of a European project: “A European Museum of Education: Preserving and Sharing Educational and Cultural Heritage”

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**Summary.** — High school students helped the recovery of a nineteenth-century scientific laboratory in Parma. It belonged to a former normal school and it consists of a collection of tools compiled through the years since 1861. These scientific devices can still be used to teach physics and science. This “discovery” led to the creation of new educational activities, and forced to a reflection on the protection of our scientific heritage. By collaborating with Spanish and Portuguese colleagues, the work will grow in the Erasmus+ project “A European Museum of Education: Preserving and Sharing Educational and Cultural Heritage”.

The project began in 2017, when the Municipality of Parma started restoration works of the St. Paul monastic complex. The first documented record is about the construction of a monastic female convent of the Benedictine Order held by Abbess Livida in 981 [1]. The monastery was a symbol of episcopal power, first subjected to the control of feudal families and later subjected to the control of the dukedom; it was suddenly closed in 1805, because of Napoleon’s decrees. Before being abandoned, it became a scholastic institution and a boarding school focused on the education of young women. In this monastic complex, among cloisters, courtyards, gardens and the rooms of the abbess Giovanna da Piacenza frescoed by Correggio, there was the Normal School [2], which was opened on 7 January 1861 by Count Filippo Linati<sup>(1)</sup>. Now it is a High School of Human Sciences. An earthquake caused enormous disarray, and since the restoration work was too difficult, the institute had to change location, leaving many tools and supplies in classrooms.

This serendipitous event led to the recovery of these old school supplies. It was the occasion to think about the history of the school, the evolution of education in different fields, especially in the scientific ones. Students have been involved, thanks to a project called “Laboratorio Ritrovato” (Recovered Laboratory), still active today. Students and teachers have shared problems, made decisions and gained awareness of the importance of the historical-scientific heritage of the school.

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<sup>(1)</sup> Filippo Linati (1816–1895), the first administrator of studies in Parma Province and Senator of the Kingdom of Italy.

## The beginnings

The numerousness and variety of the recovered scientific tools surprised us considerably. We found a catalogue of scientific and educational supplies dated 31 December 1970<sup>(2)</sup> with 1477 entries. Some of them refer to large collections of items, such as entry n. 1179 (100 paleontological specimen) or multiples (n. 64, two Magdeburg Hemispheres).

The presence of so many tools for a science and physics laboratory is surprising, considering that the school started as a Normal School. It was founded once the Casati Law was approved in the Kingdom of Sardinia, 13 November 1859, and it was the product of patriotic and educational turmoil. The Casati Law [3] describes levels of education, subjects, legal status of teachers and students, and the establishment of a Normal School specifically for elementary school teachers. When the school opened in Parma, Count Linati said to mayors: “*A career in teaching will prevent the majority of our young women from falling into vain ignorance or into unrewarding poverty, which could lead to moral mayhem. [...] I am asking Italians to become more cultured; just as tyrants asked their people to be idiots in order to make them slaves, we are asking men to be more educated in order to have free citizens.*”<sup>(3)</sup> A school to educate teachers and citizens. A school that started a few months prior to the proclamation of the Kingdom of Italy, which, despite having to face various problems, never neglected science. This is evident in the Report<sup>(4)</sup> written by General Inspector Agostini to Minister Vallari<sup>(5)</sup> for the school year 1890–1891: a whole section was dedicated to the description of educational and scientific supplies [4]. When normal schools were established, municipalities had to cover the expenses, including costs for laboratories; since 1888, this duty has been assigned to the State. The funds could be spent to buy books, maps, sports equipment, preparations for natural history and machines for physics. In this way, normal schools could build good science laboratories, year after year.

First, we focused on cleaning, making an analysis of the supplies and a minimal list in an attempt to know the general amount of the recovered tools. These tasks were executed reflecting on the “cultural asset” of the school. It was necessary to understand the value of the recovered items, their rarity and their peculiarity. The importance of educational supplies and their potential use was discussed in the European project *L'École est Notre Patrimoine*<sup>(6)</sup>. It involved the schools of Lyon and Turin, whereas in Piacenza<sup>(7)</sup> a Museum of education and didactics was established. The definition of the cultural assets of the school is still a work in progress [5]. Not only does this activity

<sup>(2)</sup> Historical Archive of the High School of Human Sciences, from now on HAHSHS, catalogue of category III, scientific and educational supplies, 31 December 1970. Viewed by the head of State Accounting Department 14 March 1973. It was therefore given to the Central Accounting Office in the Ministry of Public Education.

<sup>(3)</sup> ASPr (Archive of the State of Parma) - Supervisory Fund for Studi of Parma 1860–1912, b. n. 1, letter by F. Linati to the mayors of the towns in the Municipality of Parma, 30 April 1860, Parma, Stamperia Nazionale G. Donati, p. 12.

<sup>(4)</sup> ACS, (CSA) MPE, Div. Primary and Normal Schools (1860–1896), b.445, period 15. *Atti ms.* Rome, 12 May 1892.

<sup>(5)</sup> Pasquale Villari (1827–1917), Minister of Public Education from 9 February 1891 to 10th May 1892.

<sup>(6)</sup> A Comenius project dated 2009–2011. It was focused on active citizenship education and its core theme was appreciation of the scholastic heritage. Project PAT.H.S (*PATrimonium/Historiae Scholarum*).

<sup>(7)</sup> The museum has been active since 2006 in the State Archive of Piacenza, Farnese Palace.

take into account archival and book assets, but also educational tools such as scientific, technological, naturalistic, mathematical, geometrical, musical and geographical assets [6]. The historical-cultural heritage of our school is different, it is made up by educational articles and the most different scholastic resources, such as material and iconographic traces, that deserve to be catalogued and to be considered as educational tools even nowadays.

### What came next: Education and communication

Students helped with cleaning the tools, analyzing them, identifying different fields of education and the subsequent listing of the items or pre-cataloguing. A few classes were involved together with groups of students who were interested in the project. The “Laboratorio Ritrovato” (Recovered Laboratory) project started with Alternanza Scuola-Lavoro (work placement), now PCTO (Orienteering and Cross-skills Course), with the help of some local cultural organizations<sup>(8)</sup>. Courses took place both during school hours and in the afternoons. Students could choose what category of tools they would focus on. They showed their abilities in the fields of organization, graphics, technology, photography, etc. They focused more attentively on machines, trying to approach the study of Physics and other scientific subjects in a new way. Students were the real protagonists, and linked physics, its history and science in general to other subjects. It was very important to motivate students and create an informal work environment, in which they could express their interests, show off and improve their communication skills by using new technologies.

Photographic campaigns were also held. They focused on a few core themes such as electromagnetism, acoustics and models of the Solar System. Together with science teachers we worked on some particularly brittle herbariums<sup>(9)</sup>.

Although it is very important to catalogue every item, we chose to focus on a smaller number of assets. We made sure that there were no overlaps between time dedicated to research and time dedicated to school work. The latter has been very difficult to manage. The students analyzed machines such as the mechanical paradox, the Cartesian devil, the electroscope, Faraday’s cage, Volta’s battery and Oersted’s experiment.

This activity is interdisciplinary. We put together physics and history, bearing in mind the importance of cultural assets, Citizenship Education and human sciences. Some students decided to study a few scientific devices more in depth for their graduation exam in the school year 2019-2020. They used them as a starting point to create a link between different subjects. For instance, a student explained how a solenoid worked, linking its mechanism to the Periodic Table and to stories by Primo Levi about tin and gold, life and science. Communicating and sharing the educational and historical-scientific heritage of our school were two of the top priorities of this project. We have organized short historical-scientific exhibitions inside the school. These exhibitions have been extremely successful. Students curated the presentations and guided small groups of visitors. The exhibitions, featured in the Festival of the History of Parma, are *Recovered Laboratory-2018*, *Quicksilver* and *I Like Parma*, initiatives of the Municipality of Parma, and *Women and the Periodic Table-2019*, with the support of UNESCO. The 2020 pandemic events

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<sup>(8)</sup> Cultural Association for the Dissemination of Science - Googol, International Festival of the History of Parma.

<sup>(9)</sup> “Recovered Laboratory” has been made possible with the help of my colleague and friend Prof. Giovanna Parisini.

prevented any exhibitions from being held, so we tried to rearrange the materials and transpose them in digital format<sup>(10)</sup>.

### Teamwork: Other European schools

We wanted to find schools that were interested in these themes. Thus, with the help of Spanish and Portuguese colleagues<sup>(11)</sup>, the Erasmus+ project “A European Museum of Education: Preserving and Sharing Educational and Cultural Heritage” was born. The institutions involved in the project have historical collections of educational items. Sharing archives and collections with different European countries allows for the creation of a European museum of education. The partners will work on creating teaching, learning and educational activities in order to learn more about the preservation of cultural and scholastic heritage. This is a topic yet to be discussed in most scholastic institutions. Exchanging good practices and sharing what we learn along the way are two vital elements in this project<sup>(12)</sup>.

At the moment, because we are working on a classification of the historic pieces at our disposal, we are developing common sheets of each item. The information inside said sheets will be uploaded onto the shared database available on the European site of the project. Our work has been inspired by PST sheets<sup>(13)</sup>. The main features of each item will be listed: category, creator, date of production and/or date of purchase, location, origin, state of preservation, description, historic information, purpose and, finally, bibliography and web references. We decided to include historical information about the devices and discuss how we can use them for a second life. The next exhibition could include items from three European countries with the collaboration of many students. By working together, we will actually be able to share our scientific heritage and we will be able to create an active European citizenship.

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<sup>(10)</sup> <https://liceosanvitale.org/laboratorio-ritrovato/>.

<sup>(11)</sup> The European partners are *Asociación Amigos del Aula-Museo dello Instituto Histórico “Profesor Domínguez Ortiz”*- de Azuqueca de H. (Guadalajara), España; *Agrupamento de Escolas No 2 de Beja*, Portugal.

<sup>(12)</sup> <https://liceosanvitale.org/erasmus-a-european-museum-of-heritage/>.

<sup>(13)</sup> <http://www.iccd.beniculturali.it/it/ricercanormative/66/pst-patrimonio-scientifico-e-tecnologico-4.00>.