Cyber School: how to tackle the digital revolution together

April 8, 2017

How will the new digital school be? How revolutionary and disruptive will this historic transition be for the school system? Are professors, teachers, and families and students alike - digital natives, reality or myth that we tell ourselves? - prepared to deal with the new challenges of a revolution that not only affects the tools, but requires a new cultural, pedagogical, social perspective?

This was the topic discussed in two meetings coordinated by the President of Fondazione Bruno Kessler and former Minister of Education, Francesco Profumo, at the Palazzo dell'Istruzione. A first session, #ScuolaDigitaleTrentina, has collected testimony from the local communities and the account of the participatory process for the construction of the digital plan. The open questions posed by the first session will then be answered by a panel of national experts like Giovanni Biondi, President of Indire, Simona Montesarchio, General Manager for expenditures on school construction, management of structural funds for education and digital innovation of the Ministry of Education, Maria Rosa Bottino, Director of the Institute for educational Technology of CNR, Mario Giacomo Dutto, Chairman of the scientific and technical Committee of IPRASE, Salvatore Giuliano, Principal of the Majorana High School of Brindisi and creator of the Book in Progress Method.

The theme of the jobs of tomorrow remains central to rethinking the new school according to Francesco Profumo, who coordinated the two events and pointed out, during the opening: "The Country and the School system have a great responsibility: to shape the active citizens of tomorrow. We clearly do not have a crystal ball, so we do not know what the jobs of the future will be, but we do know that many of the jobs today will no longer exist. Many things we regularly used no longer exist: just think about the fast affirmation of Netflix over Blockbuster. The digital revolution is across-the-board, pervasive and very fast: the School too should be ready for it". And the formula to find a concrete way to build the future of kids, according to Mr. Profumo, consists of three elements, based on the successful model on which Countries like Finland or Denmark have invested in, anticipating the change: "The first is that projects for the school system should be long-term since the course of study is 13 years, and with the University they stretch to 18 years: in this way, planning is independent of governments, of ministers succeeding one another, and is really far-sighted". The second element has to do with the protagonists: "Everything must start from teachers and their training, having the centrality of students in mind. It seems a little contradictory,

but this is the reality: the Nations that have launched these processes have started from the training of teachers in anticipation of this ongoing transformation that will continue – and finally, he concludes – A third element, taken into account, is that of spaces because it is a central element for the new student education model. In this new model, the teacher will increasingly act as a conductor, a solo only for a few moments, while at times students will be playing different instruments: this will give rise to a different way of teaching and learning".

#SCUOLADIGITALETRENTINA

Ultimately overcome mistrust of technology at school; recognize the effort of those who engage in education; overcome the gap in teachers' access to technology; introduce information technologies in everyday life, making sure they actually become everyone's skills. These are just some of the next challenges identified by a program attended by more than 350 teachers, principals and staff of schools in Trentino. As a result of three meetings held across local communities (Mezzolombardo, Borgo Valsugana, Valle dei Laghi), the steps in the Trentino School system toward the construction of the new provincial plan aims to relaunch an overall innovation strategy of the Trentino school, starting from good practices and basic players. And actually the Trentino testimonies of Alberto Garniga (Liceo Galilei in Trento), Viviana Sbardella (Istituto Guetti of Tione), and Maura Corazzola (Taio's School District) opened the event with recounts of virtuous experiences in the use of technologies for the teaching of school subjects – such as philosophy – apparently by their nature less related to the use of digital technology, in creating a network of schools in the Giudicarie Valley, and on how the paradigm of peer education is changing.

FBK researcher Sara Tonelli – an example of how today the educational community increasingly needs the relationship with research centers, and that good research should lie at the basis of every good educational project – illustrated then a semantic analysis on two calls on the themes "Digital Environments" and "Creative Ateliers" launched by the PaT Knowledge Department in 2016, which collected over 190 projects (156 for "Digital Environments" and 40 for "Creative Atelier") from Elementary and Middle School Districts and from High Schools for funding amounting to 3.4 million Euros. The peculiarity of these calls consisted in focusing on a precise educational project, rather than just investing in technology equipment purchases and FBK's research provided the tools for a scientific analysis of results that can be replicated on other assessment processes.

The final conclusions by the Principal of the Martini High School of Mezzolombardo, Tiziana Rossi, conveyed then to the National Panel the open issues that closely concern the new school in Trentino, but not only: the change of environments and the consequent cultural change and in teaching methods; the use of digital devices, including personal devices, at school; the introduction of computational thought; the digital textbook.

HORIZON 2030: THE CHALLENGES OF THE NEW SCHOOL

In the second session, Francesco Profumo introduced the big topics on which the school of tomorrow must be thought: spaces to be built; regulations and how they should be timely adjusted to what the school system requires, and finally the big topic of the pedagogical model, and how it should be organized into spaces, new curricula, and technologies that, in this context, can represent a real element of democracy.

Giovanni Biondi spoke about spaces and commented: "In 10 years, 60% of the works will be new and how are we getting students ready for this? The way we think about digital technology is the same one we use for traditional things. Many school buildings date back to the early '900s and this is a great paradox. The school can no longer be thought of as a kind of assembly chain to convey

knowledge, in which the centrality of the lesson was the cheapest way to explain. Classrooms, environments and learning times need to be rethought."

With regard to the regulatory aspects, in particular those relating to the introduction of students and teachers' personal mobile phones and tablets (byond), Sabrina Montesarchio pointed out how the participatory processes used by the Ministry are the way to follow, but that they can reveal critical issues: "Implementation is challenged by resistance not by the most active teachers, but by the will to bring all the schools to the same level. The difficulty concerning "byond", however, is related to legislation dating back to 2007, when mobile phones were just a communication tool (ed. note: the iphone was actually introduced during that year). Today, there are really many good practices and we would like to complete the participatory collection to enhance digital skills by the end of the year so that we can have precise guidelines: the use of mobile phones in the classroom should be seen as an opportunity, not as a distraction ".

A necessary introduction of evaluation and monitoring is a need identified by Rosa Bottino: "Today there is an interconnected 2.0 environment in which interaction is a participatory construction in which students and teachers use their tools, taking into account that there is a network outside the school and that it can be included in education. Which criticality? It would be a monitoring of what we are doing, which aspects are doing well and which ones are doing less well. Support from research, that can provide substance to the design phase of the School system in the action of the National Plan is needed. "

Salvatore Giuliano, Professor 2.0 par excellence, who has recently trained more than 650 "digital technology facilitators" at the ITIS Majorana High School in Brindisi, focused his talk on technology as a democratization element in school: "The biggest form of democracy that technologies have Introduced is that of changing the teacher-student relationship. Technology does not change anything unless it is introduced and used by everyone, primarily by principals: if used in a smart way, it can also fight school dispersiveness and increase creativity".

Finally, from the meetings organized locally, the topic of training came up: no more taught lessons, but an exchange of practical knowledge in common practice: "The future passes through schools and students in class today are the renewable energy for our tomorrow. Unfortunately, questions, crucial and unusual, remain unanswered. – concluded Mario G. Dutto – Which country do students find at the end of their education years? What is the destiny of the passions, projects and ambitions that boys and girls cultivate on school desks? It is time for institutions and collective parties to talk about the dialogue that needs to be established with schools that, even if struggling, change, innovate and reach important goals in the field of student skills and equity in education."

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AUTHORS

- Silvia Malesardi