TEACHING TO TEACHERS: A MOOC BASED HYBRID APPROACH

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Policy Matter: The National Plan for Digital School in Italy

The National Plan for Digital School (PNSD 2015) is one of the main components of *La Buona Scuola*, the national policy program to modernize the K-12 schools system in Italy. Born as a deliberative policy-making process, indeed la Buona Scuola has been bitterly contested because of its general aim to reinforce and responsibilize the school leadership, thus reducing the general sense of collegial participation in school and program management. On the other hand, however, the school system in Italy has never experienced such a level of bottom up participation, engagement and centrality in government policies, with a positive effect on allocated funds to reengineering education, renewal of school buildings and creation of new skills and pedagogies in teacher education. One billion Euro has been, in fact, allocated on the National Plan for Digital School in order to bring broadband and connectivity in any K-12 institution, to create a generation of tech savvy teachers, educational opportunities for all the field personnel, to elaborate and implement a consistent strategy for learning by doing, problem and lab-based teaching initiatives. Moreover, the national strategy aims at laying a common ground for basic skills both in teachers and learners, experimenting with new approaches and at the same time, inviting teachers to become researchers in their field. The need for repositioning education is well supported by some data: an inquiry by OCSE TALIS (2013) sees Italy on the first place for teachers training and educational needs in ICTs, the 36% out of teachers investigated declared to be not sufficiently prepared for technology-enhanced teaching against an average rate of 17%.

Considered as a central pillar of *La Buona Scuola*, the PNSD intends to propose a strategic vision about the 21st century education, using the digital not as a means but as a game-changer that is able to push the organizational change, to leverage education key resources (mainly human), to promote OER and professional skills development. In other words, to re-position the Italian education system on the global market. It seems to be a complete change of paradigm, at least so far.

Context Matter: When a Virtual Community Becomes Real

The theoretical background

Sakai-Miller (2015) encourages educators to get to the heart of 21st century teaching by asking themselves three questions about the lessons they're preparing: What? So what? Now what? According to Sakai-Miller, in order to empower students, we need to empower teacher first thus realizing a virtuous cycle to disrupt old paradigms and move the education forward. The

pivotal key is to shift from the paradigm of acquiring knowledge to actually using it; bringing theoretical ideas into practice. To help teacher to uptake the innovation age challenge, we need to solve the digital isolation of all employers in the education field, thus transforming them into an active community that is able: "to foster collaboration in class, beyond class, and beyond school; to promote self expression, interactive communication, and three-dimensional communication through words, data, and graphics; encourage creativity by building creative confidence, and associational thinking and empathetic thinking skills; and boost critical thinking skills by supporting the iterative learning process and building questioning and experimentation skills" (Sakai-Miller, 2015). This approach has its roots into the theory of Alinsky's Community Organizing and, on the pedagogical side, into the Dewey's concept of Community of Inquiry. Then, both constructivist and connectivist ideas pave the way towards a deep interaction with the content and between people/needs/actions and beliefs in a more complex matrix of reciprocal interaction for the knowledge, that is more and more embedded within the social context (Siemens, 2005).

A MOOC on coding

Starting from this perspective described, the MOOC on Coding has deployed a hybrid approach where the virtual dimension, the onlineness, is articulated in synchronous and asynchronous activities throughout the use of the hangouts for living the experience (where the community of enrolled people interact with each other by commenting the video lecture in real time) while the Emma platform is used to re-arrange the lesson and its instructional design in a form of a loop. In this context, the Emma platform features works as an agile platform that does not deliver pills of knowledge but creates a social tissue around the teacher community involved.

Coding has been recognized as a fundamental discipline to be introduced at schools to develop computational thinking skills. The unprecedented success of the two main coding literacy campaigns launched in the last years (i.e., the Computer Science Education Week and Europe Code Week) was mainly due to three key factors: the availability of beginner-friendly playful online instruments to approach coding, the collective awareness on the importance of coding, and the passionate engagement of thousands of teachers worldwide who took advantage of such initiatives to bring coding into their classrooms. After this experience, we decided to exploit the Code Week approach in a MOOC format, experiencing the features of a brand new MOOC platform developed under a EU CIP program. The European Multiple MOOC Platform (Emma for short) has been considered, in fact, very attractive for its experimental nature as well as its multilingual and multicultural approach offering an agile and personalized method to both teaching and learning.

A hybrid approach

The MOOC has been organized as a hands-on experience course that is mainly based on live webinars and video tutorials illustrating how to organize coding activities using only freely accessible online resources. The aim of the MOOC was not to create new skills but to provide methods and instruments to introduce coding at school by creating awareness and this way

change the mindset of in-service teachers. This approach allows them to learn the fundamental principles of coding together with their pupils and to apply computational thinking to any topic. Considered as a transversal skill, the objective of such a MOOC was to restore the centrality of the teacher in the Italian school system through a highly scalable process of teaching/learning among the diverse actors involved: coding ambassadors, teachers and digital animators, pupils as final users. In the following paragraphs, we will explore the dimension of the experience as well as the factors of success with empirical data on user profiles, previous learning experience as well completion rate. Due the concise format of this paper, the empirical testbed will be presented during the conference. While the concerning MOOC is still running at the moment (starting date: 25 January, duration 13 weeks), we can only add here that for now it seems very successful for both – the enrolment numbers (almost 4,500 people enrolled during the first launch week, and the number keep growing) and the participation rate (the first video lesson received 6,000 views in one day only, with over 1,500 simultaneous connections to the Emma platform), and thousands of immediate feedback and comments.

Social media channels contributed enormously in organizing and creating such a large community where thousands of teachers experienced a sense of community and belonging. The following chart presents some demographic data about the involved target. What appear to be extremely interesting is that only a few MOOC participants have previous experience in such a course and topic, while the majority of them come from primary schools. It is largely a self-selected target – reached by a very short communication campaign mainly organized through social media and blog posts – which appears to have emerged as a unified community of interest because of the special space of opportunity created by the policy program thanks to the launch of PNSD.
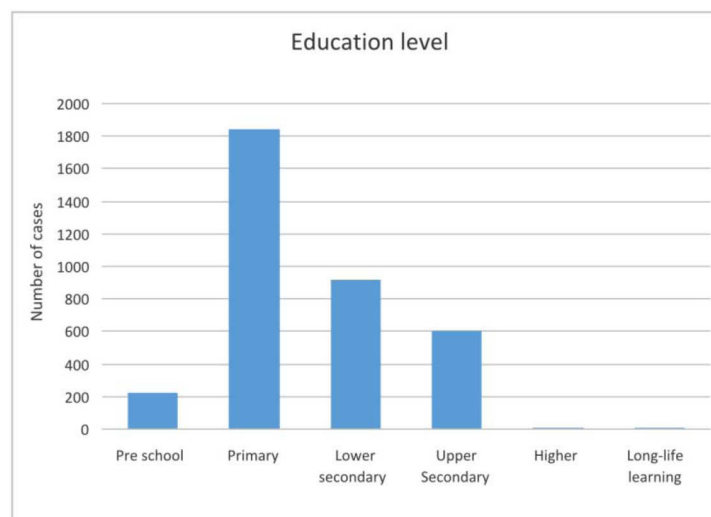

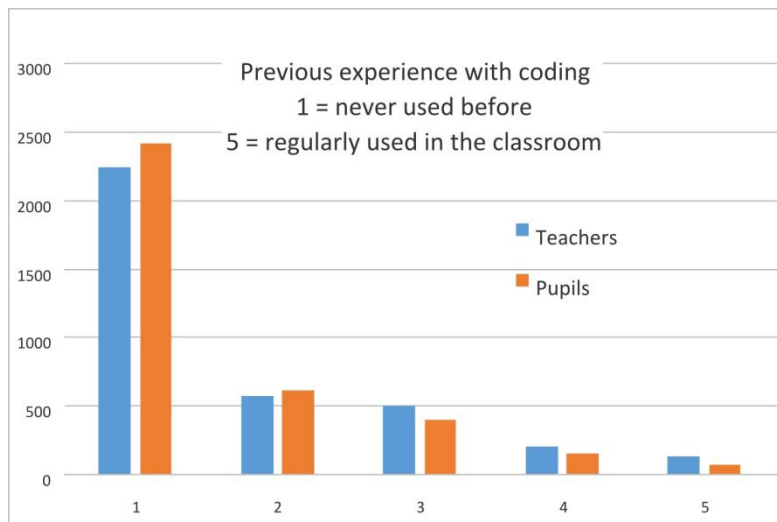Figure 23. Teachers by type of school – Needs Analysis for the MOOC on Coding

Figure 24. Previous experience with Coding

In this respect, education gained momentum and popularity with a non secondary effect. For our personal experience, in fact, it is the first time that the teacher role (recently under the pressure of a delegitimization force) is converted into an enabler factor, gaining centrality, legitimation and social value.

I'm here where You are – The teacher role in a hybrid environment

Common needs, self-recognition, peer-reflection, and empathy seem to be the keywords of a successful MOOC. This result seems to be counter-intuitive since the MOOC roots are deeply radicated in the ideas of openness and scaling up at a global level. Which, of course, are both brilliant ideas, that indeed do not exclude the possibility of scaling up education within specific communities.

Dewey has provided a framework for the model of community of inquiry and collaborative learning as predictors of learning processes and outcomes. Then the Community of Inquiry concept has been adapted to support a faculty engaged blended course redesign. Anderson, Rourke, Garrison and Archer (2001) using the Dewey's Community of Inquiry model, make references to the online environment and different online teaching presences stating that "the concept of teaching presence is constitutively defined as having three categories – design and organization, facilitating discourse, and direct instruction" (p.1). Few years later, Anderson (2004) organized these roles in a graphic model showing that deep and meaningful learning results when there are sufficient levels of three components but overlapping *presences* which he termed social, cognitive and teaching, as illustrated in the diagram below (p.273).
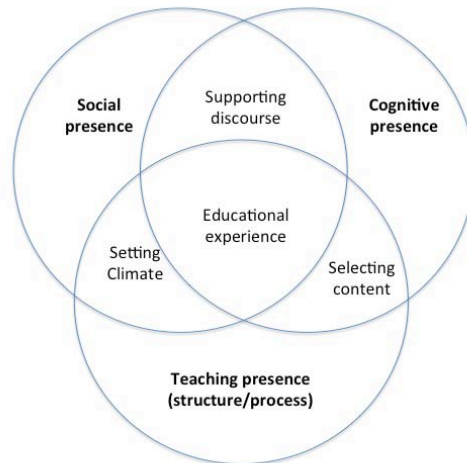
Communication Medium: Teacher role in online conferencing (Anderson et al. 2004)

Figure 3.

The case of MOOC on Coding appears to fit perfectly with the concept of community of inquiry, with a relevant difference: participants are also teachers with a clear role within the society. So the MOOC teacher and participants share a common understanding of their mission in the world, a sole vision of the future education, and a clear objective to be reached all together. The similarity with the Alinsky model of community organizing is impressive. Here a self-selected community that is able to self-organize using itself at the same time as a medium and a message to enlarge the community, thus scaling up the benefits of becoming a whole in a bottom up constructivist and connectivist experience. This is probably the most valuable effect that empirical data – expected in the final release of this paper – will for sure demonstrate. As a preliminary conclusion, we can say that all participants to this experiment share the different spheres of the community of inquiry model with the same legitimation, populating all related spaces with their networking and knowledge sharing activities, supporting the teacher's discourse by creating new learning objects and setting a very positive climate.

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