

Editorial

These months have been characterized by a real dramatic challenge. It is not the first time that human beings must fight a virus; it is the first time, however, that this happens in an extremely connected world. The global progress of the COVID-19 pandemic is having serious repercussions in terms of human lives, healthcare, and economic systems. Clearly, some serious difficulties are affecting also the education system. Institutions, teachers, and students were asked to reinvent themselves overnight, to consider how to teach and evaluate with remote methods that have also repercussion within families. We do not know yet what the consequences of this effort will be. Of course, schools, and probably each one of us, will never be as before.

In this situation, one of the positive notes is the enormous effort made by all the actors in the school world to maintain a mutual connection. A connection made of relationships, shared knowledge and insights, mutual support, sense of belonging. The whole editorial board of DdM journal wants to praise anyone who used their energies to ensure the functioning of the school in all or most of its functions. In such a complicated situation, we think that the publication of the seventh issue is a contribution and support for everyone: we continue to share research, reflections, and experiences, to train the new generations and to return even more motivated in the schools and universities classrooms.

In the section *Riflessione e ricerca*, there are three articles regarding all school levels. The first contribution aims to analyse, using different theoretical lenses, the effects of digital technologies in the teaching and learning dynamics in classrooms. The analysis is based on the description of two episodes that occurred in an Italian secondary school: a message exchange using Stream in Google Classroom and an extract of a private chat on Whatsapp. This work shows also as digital technologies create new and complex learning/teaching environments, that can be considered as new social systems. The second article is about Italian standardized assessment tests. There is an analysis of two items, one administered with paper and pencil mode to students in the last year of primary school, the other administered in CBT (Computer Based Testing) mode to students of the second year of upper secondary schools. The combined analysis of texts and results is carried out through mathematical education theoretical constructs, thanks to which it is possible to interpret the mistakes made by students in terms of attitudes related to the idea of mathematics and to habits and repetitions of solving methods. In the last contribution, the authors deal with the comprehension of mathematical texts for students from 5 to 14 years old. The article presents a training course, consisting of nine curricula, each with 12 activities, focused on reading comprehension and problem-solving. The results of a pilot experimentation conducted on about 200 students belonging to 10 primary school classes are analyzed below, from which significant increases emerge both on standardized comprehension tests and mathematical tests.

In the section *Esperienze didattiche* there are four contributions. In the first one, the authors deal with a topic that is attracting more and more attention in school curricula: financial literacy. They describe an education game, tested in three Italian upper secondary schools, developed to let students discover some of the main ideas of financial mathematics, such as simple and compound interest, investment, loan rules. The goal is to introduce financial concepts to students with an informal approach. The second article is about a cultural transposition experience proposed

in a class of sixth-graders: combining two theoretical lenses, the authors intend to demonstrate the potential of a formative use of Chinese ancient instruments and counting techniques; the aim is to rethink first, and then boost, students' awareness about addition and subtraction algorithms while also directing them toward the use of pre-algebraic methods based upon the concept and principles of equivalence. The third article describes a research, conducted in an Italian lower secondary school over a two-year period, in which the standard assessment method, using a 1-10 grading scale, was gradually replaced with other methods and strategies to promote self and formative evaluation. The author explains the choice made and the difficulties raised during the project; finally, he analyses the questionnaires, given to students in different steps of the research, to guide the reflection for future years. To conclude, the last article presents an experience realized in a lower secondary school of Canton Ticino about the topic of probability: there is a description and an analysis of all the activities realized in class. All these activities were created to provide a first encounter between students and probability but aimed at raising awareness of the risks and mechanisms of gambling.

As usual, we are grateful to all authors, who dedicated their abilities, time and energies to think and write articles of high quality and versatility. It is especially in such uncertain time that is important, as much as possible, to keep in mind our personal and work goals and, following the rules, to stay as close as possible.

Comitato editoriale DdM

Dipartimento formazione e apprendimento, SUPSI