

Editorial

The *Didattica della matematica. Dalla ricerca alle pratiche d'aula* journal is now in its twelfth issue, the last in 2022. Since its inception, the main aim of the journal has been to shorten the distance between the world of the research in Mathematics Education and the world of everyday teaching and learning experiences in the classrooms. This issue also pursues such an aim thanks to a series of high-quality contributions, written by students, teachers, teacher-researchers and researchers who are interested in the delicate process of teaching and learning mathematics.

As usual, there are three articles in the *Riflessione e ricerca* section. The first deals with the important topic of understanding the text of a problem with some 9th graders attending an Italian upper secondary school¹ who, before solving a problem, were asked to critically analyse its text; the authors propose a reflection on the data collected, showing how most students, after a text understanding work, improve the correctness of their answers and produce arguments in support of them. The second article presents an interesting reflection on students' ethical relationship with a document retrieved from the history of mathematics; an interpretation activity of a passage written by Euler, carried out in a 13th grade class, allows the author to highlight various issues in terms of students' responsivity and responsibility towards the text; in the light of Levinas's and Gadamer's thought, the focus lies on how students orient their interpretation, how they deal with the other's point of view, and how they follow the author in his reasoning. The last article in this section presents the mathematical discourse analysis of students attending 7th grade in an Italian lower secondary school,² during a lesson concerning the identification of the heights of a triangle; the authors' aim is to detect and describe the realisations of the signifier *height* appeared during the activity, so as to highlight both the richness of the class discourse and the interactions between different realisations.

There are four articles in the *Esperienze didattiche* section. The first contribution describes an experience conducted in an Italian lower secondary school as part of the circle and circumference teaching unit; starting from the famous crop circles hoax of the seventies, the students were challenged to design their own original circle: this request mobilized measurement and technical drawing skills, as well as the design of real operating instructions, so as to inspire a positive attitude towards the discipline. The second contribution presents some didactic experiences carried out in kindergarten and primary school in Italy;³ these experiences were designed both to learn about the representations of geometrical objects chosen and used spontaneously by children and to encourage visualization and the transition from the *iconic* way of seeing to the *non-iconic* way of seeing required in geometry; the results emphasise the importance of engaging students in activities like dimensional deconstruction of figures to reach smaller dimensional figural units, as well as figures description, construction and enrichment of technical vocabulary, and straightedge-and-compass figures construction. The third contribution describes a teaching activity arising from a classic combinatorial calculus and probability problem posed by two 13th graders of an Italian scientific upper secondary school – students who are also two of the authors of the article; after explaining the first attempts to solve the problem, which involved the use of computer simulations and the implementation of two different approaches

1. The upper secondary school in Italy lasts five years and corresponds to the grades from 9 to 13.

2. The lower secondary school in Italy lasts three years and corresponds to the grades from 6 to 8.

3. The primary school in Italy lasts five years and corresponds to the grades from 1 to 5.

to search for mathematical patterns, the authors present the last phase of the experience: telling their classmates about the whole long and complex process of addressing the problem, by sharing the research activity, together with the amazement and wonder they felt. The last contribution also illustrates an experience related to the probabilistic field: the article describes a learning path, proposed in a 11th grade class of a scientific upper secondary school, which revolves around some basic questions: how to distinguish finite binary sequences generated by the repeated tossing of a coin from those imagined by a human agent or simulated by a calculator using a deterministic algorithm? The results of the experiment show that the students were able to critically reflect on their beliefs regarding probability and chance.

It just remains to wish you a good and profound reading, hoping that these reflections and experiences will inspire other research applications and classroom experiment.

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