

Editorial

The journal *Didattica della matematica. Dalla ricerca alle pratiche d'aula* was born to create a meeting point and a dialogue between the worlds of research and the class. It is in fact from the teaching and learning processes actually lived in classroom that many considerations and cues for the research are born and, at the same time, it is through research that educational praxis changes and evolves. It is precisely this continuous exchange between these two worlds that allows them to enrich each other, reinforcing and consolidating with one another.

At the same time, this journal represents an opportunity for Ticino to open up towards other experiences, sharing its own in the field of mathematics and its didactics and embracing those from other Countries, thereby supporting sharing and dialogue.

Besides, the style chosen for the journal, opened to all school's levels, allows for a cross-grade discussion analyzing the teaching/learning of the mathematics from kindergarten to higher education, passing through every school level and thinking about the key aspects which characterize the whole educational path.

The success of the journal and of its structure, is reflected by the number of users who viewed and downloaded the first issue: 3'475 users (about 2'500 the first month) for a total of 5'246 visits (about 3'400 the first month since the issue's release).

Of all visits, 4'338 were from the nearby Italy, 838 from Switzerland and the others scattered throughout the world. We believe, here again, that the numbers show clearly the interest for a publication of this kind, designed to enrich researchers' and teachers' profession and consequently to provide effective suggestions, ideas and reflections for the students.

In this issue, in section *Riflessione e ricerca* there are two papers addressing the transition from middle to high school. The first one presents a research on the processes of meaning formation relative to the concept of function and to its graphic representation in dynamic geometry environments. A didactic activity on functions is presented, which is focused on managing different graphic and verbal representations of real variable functions, enriched also thanks to dynamic geometry software. The second paper presents some reflections of didactic nature on the answers given by tenth-grade students to some INVALSI Italian tests. The analysis makes apparent several problematic issues tied to knowledge and fundamental competences for a significant mathematic education. An hypothesis about the cause of such difficulties is put forward: they come from a didactic issue and depend on the excessive attention given to mastery of symbolic calculations, as an end in itself and supported by unaware coaching.

In the third paper the authors highlight the crucial role assumed by the text comprehension process in the activity mathematical problem solving. Comprehension turns out to be critical in the case of both a very synthetic and rich problem text, independently from the school level. The paper proposes an interpretation of this phenomenon, based on the interaction between what Bruner defines forms of "narrative" and "logical" thinking.

In the second section of the journal, related to *Esperienze didattiche*, the first paper presents an experimentation, conducted with 19 first-grade students, aiming at inquiring which spontaneous representation they chose for communicating to different interlocutors a stimulus proposed in a numerical problem. The collected data offer a peculiar picture of children sensibility and of the spontaneous use of several semiotic registers, among which the use of graphics and drawings.

The second paper presents the results of an experimentation conducted in two sixth-grade classes from Ticino middle schools focused on the use of some assessment tools – based on the paradigm of “competence-based education” – related to a particular cognitive process (mathematizing and modelling) provided for in *Piano di studio della scuola dell’obbligo ticinese* (DECS, 2015).

The third paper instead reports the results of a study on children spontaneous strategies and difficulties in the last year of preschool, emerged from requests related to one-to-one correspondence to be realized at the drawing board. Moreover, the paper shows how, thanks to motor activities presented to the children in terms of a game, it is possible to improve the children’s performances on the same subject. Finally, the fourth paper is about a didactic process tested with 9-10 year-old children, focused on the handling of colored papers’ templates, having the shape of particular right triangles, and on their juxtaposing in order to describe other geometrical figures.

The intention is to keep on circulating a great variety of proposals and stimuli between researchers and teachers who are involved in mathematic teaching, so as to make these two important professions more and more profound, aware and effective.

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