

## **PRACTICE OF INTERDISCIPLINARITY FOR THE TEACHING OF MATHEMATICS AND SCIENCE: DIDACTIC ISSUES AND COMPLEXITY**

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More and more, contemporary societies are directing their educational policies towards interdisciplinary achievements, often relying on a project-based pedagogy in which students can be led to solve problems from another discipline. In such a vision, the use of different modalities of interdisciplinarity aims at developing in students a multidimensional understanding of phenomena. Mathematics appears as a tool for other disciplines and modeling becomes a privileged field for interactions between mathematics and other disciplines.

The educational and research worlds are therefore faced with several challenges: to design, experiment and evaluate interdisciplinary achievements in the framework of general education. However, the realization of such a project cannot be done without difficulties and poses complex problems as much in the definition of the teaching contents as in the practice of classes or in the management of the working methods between teachers involved in interdisciplinary projects. Some questions arise:

How are the "interdisciplinary virtues" of these practices legitimized and evaluated? What part of the modeling and treatment of models is devolved to each discipline, what coordination of methods, notations, vocabulary, and, in fine, what types of tasks are given to students and what competences are evaluated?

Through a few examples, we propose to present some of the difficulties encountered in integrating an interdisciplinary vision into curricula and classroom practice.

Then, we develop the idea of didactic continuity to translate a plural but coherent vision between the teaching of mathematics and other disciplines such as physics or chemistry, leading the teachers of both disciplines to carry out their teaching projects in a collaborative and complementary way.

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