
PHILIPPE ETCHECOPAR & JEAN-PHILIPPE VILLENEUVE, Cégep de Rimouski, Rimouski, QC
Modelling-Simulating Method of Problem Solving and Its Impacts

We have developed, some ten years ago, at the Cégep de Rimouski a method of problem solving that we called the Modelling-Simulating Method. This method is used with Maple (a computer algebra system) and it enables the students to solve problems of applied mathematics, like “real life” problems, problems in physics, in biology or problems related to some environmental issues. The central aspect of that method is to understand a problem by numerical or graph simulations. So, it is possible to follow the evolution of the modeled phenomena, to identify the role of its parameters or some special cases and also to find some limitations of the mathematical model. We will give an example of the application of that method to solve a particular problem.

The choice of teaching applied mathematics has been made because most of our students go to health and applied science. That choice and the use of the Modelling-Simulating method and of Maple raise some important issues: the possible changes of the mathematics curriculum, the interdisciplinary approach, the use of technology in mathematics courses, the development of a critical attitude and of a scientific culture, etc.