

# **Evaluating the selection process for a mathematical modeling contest: the perception of participating students**

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Mathematical modeling has become one of the main focuses of mathematics standards and curriculum for primary and secondary school in Chile since 2012. However little is known about the way this ability is taught in the classroom, and everything suggest that students rarely have the chance to work on real modelling tasks.

Since 2018, the CMM is in charge of the selection of the two teams that represent Chile at the International Mathematical Modeling Challenge (IMMC), an annual contest in which teams of four school students have 5 days to solve a mathematical modeling problem and present a report with their solution. The process has two stages in which the teams must solve problems of increasing difficulty, and a last one in which those that have reached to this point have the possibility to attend a training instance before working on the international problem.

In this work we report some results of an ongoing study that seeks to evaluate the selection process and learn about how teams organize the work and make modeling decisions. A qualitative research approach was used in order to know the perspective of students about their experience. Focus groups with two teams were performed, with the discussion structured by a set of questions aimed at evaluating aspects such as the motivation to participate, problems addressed, work organization, difficulties encountered, decision-making and learnings achieved. The preliminary results, based on the analysis of the perception students have, suggest that the instances of the selection process contributed to their understanding of the modelling process and to develop competences that allow them to perform better on the international problem. Students reported improvements on the distribution of tasks, understanding of the problem, choice of the model approach and presentation of the solution, as well as difficulties related to the integration of the individual work. Some other findings about students motivations, roles during team work, tools used and access to information were obtained. Finally, we discuss about how the selection process could be improved taking into account the different realities, interests and perceptions of the participating students.