

Mathematical reasoning: which are the issues?

Daniel Doz

Liceo Scientifico Statale France Prešeren

doz_daniel@yahoo.it

Mathematical reasoning is believed to play an important role in mathematics, since many mathematical processes require it. Despite its importance, many students have difficulties with mathematical reasoning. Current literature has shown that students face several issues while proving by counterexamples and formal proving. It is not however clear if such reasoning problems are present also among Italian students. In this paper we analyzed the answers of 17 grade-10 Italian students that solved the Italian national assessment of mathematical knowledge in 2011. The analysis shows that the majority of students struggled with correct reasoning. Several incorrect reasoning processes have been used; hence educators and school authorities should focus even more on the development of students' reasoning skills.