

## KAJ NAM O MATEMATIČNEM ZNANJU MATURANTOV SPOROČA RAZISKAVA TIMSS ADVANCED?

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Mednarodna objava rezultatov primerjalne raziskave znanja preduniverzitetne matematike je prinesla nekatere pomembne nove informacije o poučevanju matematike pri nas. Najpomembnejše je, da je znanje maturantov, ki se odločajo za maturo iz matematike na višji ravni, zraslo in je relativno visoko. V prispevku prikazujemo rezultate prvih nacionalnih analiz. Rezultate raziskave smo povezali z rezultati iz preteklih merjenj znanja matematike med srednješolci: iz sploh prvega sodelovanja Slovenije v mednarodni primerjavi leta 1989 in iz treh merjenj trendov v letih 1995, 2008 in 2015. Neodvisno izmerjene dosežke TIMSS Advanced smo primerjali z rezultati nacionalne mature. Iskali smo razlago, zakaj so razlike v dosežkih med spoloma v obeh merjenjih različne, čeprav sta preizkusa po vsebini in kognitivni strukturi zelo podobna. Ugotovili smo, da varianco v dosežkih dijakov v veliki meri pojasnijo spol, izbira ravni mature, izbira fizike za maturitetni predmet in naklonjenost do učenja matematike. Rezultate primerjamo z rezultati podobne analize pred osmimi leti.

### WHAT DOES TIMSS ADVANCED SAY ABOUT MATHEMATICS KNOWLEDGE OF SLOVENE SECONDARY SCHOOL STUDENTS

The international report of the results of large scale assessments of pre-university mathematics has brought some important new information on mathematics teaching in Slovenia. Most importantly, the knowledge of students who choose the higher level of the national mathematics examination has grown and is relatively high. The paper presents results of the first national analysis. We compare the results of the study with the results from previous assessments: from the first participation of Slovenia in the international comparative study in 1989 and from three studies of trends in the years 1995, 2008 and 2015. The independently measured achievements of TIMSS Advanced were linked with the results of the national matura examination. We tried to find the explanation for differences in achievements by gender that are different in both measurements, even though the content and cognitive structure of the tests are very similar. The important factors which explain achievement variance were found to be students' gender, the choice of the national exam difficulty level, the choice of physics for the optional subject at the national examination, and how much students like to learn mathematics.

### Uvod

Slovenija je med leti 1988 in 2016 sodelovala v mednarodnih raziskavah združenja IEA (International Association for the Evaluation of Educational