

Analyzing Trends in High School Physics and Mathematics Competitions in Macedonia: A Data Driven Perspective

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The study presents a comprehensive data-driven analysis of student participation in national high school physics and mathematics competitions in Macedonia over the recent years. According to official datasets collected, we examine participation rates, performance trends, gender distribution, and international achievements. The analysis highlights significant patterns, including regional disparities, variations in engagement and overlapping across disciplines. A comparative perspective between physics and mathematics competitions is employed to identify common challenges and discipline-specific dynamics. The findings provide valuable insights for educators, policymakers, and competition organizing societies seeking to improve competition structures, talent identification processes, and current educational strategies. The paper identifies areas for improvement recommendations for enhancing outreach and support strategies to nurture gifted students in physics and mathematics.

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