

Inequalities as a diagnostical tool for discovering formalism in various domains of school mathematics

Abstract: This thesis targets various types of errors and their causes, in particular formal using of mathematical symbolism, appearing in students solutions of specific inequalities. The theoretical part refers on articles dealing with the difficulties manifested in students solutions of inequalities and with factors influencing appearance of these difficulties, on the basic publication dealing with the theory of errors and the factors that influence the occurrence of these. In the practical part, I analyze works of students from one secondary school in Prague. The aim of the diploma is to detect domains where negative transfer of knowledge influence the domain of inequalities. Errors identified in these solutions are closely linked with domain of equations, but they are also influenced by knowledge from the domain of function, sets, algebraic expressions, mathematical logic and numbers.

Keywords: Work with errors, typology of errors, inequalities, mathematical symbolism, transfer of knowledge, goniometric inequalities, strategies in solving inequalities