This thesis deals with phenomena of spatial visualization, application of spatial visualization in instruction and its educational specifics. The present thesis addresses the questions of definition of spatial visualization in instruction, specification of educational specifics and exploration of the relations between spatial visualization and cognitive processes. The experimental part of the thesis is focused on relations between the form of presentation of subject matter (planar visualization and spatial visualization), spatial intelligence, or the ability of mental rotation and the results of learning at students of lower secondary (ISCED 2) school. Elaboration of the theory given field of educational means, the thesis seeks to contribute to the development of theoretical bases of pedagogy with the context of increasing importance of technology for support education.