CONCEPT BUILDING PROCESS IN 3D GEOMETRY

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Abstract: Tasks aimed at the classification of a group of tactilely perceived geometrical solids make pupils think about the solids and learn them in different way than is usual when visual perception is involved. Pieces of information about attributes of solids which are gathered by tactile perception come to the mind gradually and are hierarchised. The first substantial phenomenon which a pupil notices is called the dominant one. Which phenomenon a pupil perceives as dominant or whether a pupil perceives only a global attribute of a solid is projected into his/her way of manipulation with the solids. On the basis of the analysis of video-records of some 10-11 years old pupils' solution of the tasks we describe some mental processes, mechanisms, related to the structure building process of geometrical knowledge. In the paper we present some findings of our on-going research into the learning and structuring of knowledge about 3D solids by pupils.

Keywords: 3D geometry, cognitive mechanisms, tactile perception, structuring of knowledge, concept building process