

CONCEPTIONS OF FINNISH AND BRAZILIAN CHILDREN OF THE CONTENT OF THE HUMAN HEAD AND BRAIN

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Abstract: Teachers have a special role when supporting students' understanding of health and well-being and function of the human body. However, international studies show that the majority of 15-year-old children do not understand the human body as a whole. In Finland, have been carried out only a couple of studies concerning conceptions of children on the structure and function of the body. In Brazil as well, there are a scarcity of studies concerning graphic representation of organs and organ systems at the level of preschool, primary school pupils, and adolescents at secondary school.

This phenomenographic survey is based on the development theory about thinking of children and on the theory of biological thinking. The task is to clarify what kind of conceptions Finnish and Brazilian 4–10-year-old children have of the content of the human head and how the conceptions relate with scientific knowledge. It will be also discussed how a teacher can support understanding and learning of biological knowledge.

A total of 1340 children participated voluntarily in the study. Material consists of drawings and interviews of the children. It was analysed using phenomenographic methods. According to the results, the conceptions varied much even in the same age group. Some children had primitive scientific conceptions, but especially conceptions of the young children were based on imagination. Most children knew that the brain is located in the head. Some of them were able to name parts of the brain and knew something about its function, e. g. that it thinks and directs movements. The conceptions were based on the experiences of the children, were very tenuous and included many mistakes. No one of the children had totally correct knowledge of the structure and function of the brain. When starting a new biological theme it is very important to take into account experiences and everyday conceptions of children. In addition, it should be clarified what the children mean by the biological concepts they use.

Keywords: phenomenography, thinking of a child, everyday conception, science-based knowledge, mental model, brain.