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The new fundamentals of curricula for the Finnish comprehensive and secondary schools emphasize the processual aims of education and the experimentality of science. This suggests that, in principle, adoption of the basic operational principles of empirical science and development of the skills required in their application are more important than knowledge of the results of science. It is argued that the essential processes are interactions of observation and mind or experiment and theory. They can be initiated by experimental or theoretical operations, but there are no purely experimental or theoretical processes.

In their logical dimension, the processes have the nature of perception, basically intuitive creation of meanings. The observational and mental elements are coupled inseparably so that there is "no space" for any inductive or deductive logics between them. Here the experimentality is, thus, the natural direction of propagation, independent of the two-way dynamics.

The processes are run by two opposite basic motives. The aim of understanding gives rise to the scientific process, the aim of usage to the technological process. Both operate between experiment and theory and their application in education is, thus, affected by the requirement of experimentality.

Finally, the processes undergo a hierarchical development, which is coupled to generation of a conceptual hierarchy. The experimental approach understood as the direction of propagation in this hierarchy is the most important aspect of the experimentality [1, 2, 3]. The processes representing intermediate stages or steps in this development can be used to define subsequent levels of processual aims suited for different levels of education.

[1] K. Kurki-Suonio and R. Kurki-Suonio, *Fysiikan merkitykset ja rakenteet*. Limes ry. Helsinki (1994)

[2] K. Kurki-Suonio, *Perceptual Approach in Physics Education*, Ahtee M., Lavonen J. Meisalo V. eds. *Proceedings of the Finnish-Russian symposium on Information Technology in Modern Physics Classroom*. Opettajankoulutuslaitoksen julkaisuja **123**. Helsingin yliopisto (1994)

[3] K. Kurki-Suonio and R. Kurki-Suonio, *The Concept of Force in the Perceptual Approach*. Opettajankoulutuslaitoksen julkaisuja. Tampereen yliopisto (1994)