

Martin Warnke  
Universität Lüneburg

Position Statement for Medichi 2007

In Favour for the Genetic Principle

Martin Wagenschein (1896-1988, Germany) was one of the most prominent researcher in the field of didactics of science. He is well known for his three-fold attitude to learning and teaching which he condensed in the principles of the genetic, the socratic, and the exemplary.

Since for computer science the historic evolution of techniques and methodologies straightly follows a path from the simple to the complex, a genetic approach quite naturally is identical to a historical one. In contrast to structure the material to be handled by students in a top-down fashion, it will be much easier to follow a historical path and to iterate the suite of problems and solutions mankind itself had to struggle through.

It certainly would be fruitful to design a curriculum for computer science for beginners by following the historical pathways from the simple and early to the complex and recent.

So I would recommend to start programming with the Turing Machine, begin to discuss hardware with very early computers, show ferrite rings first and integrated circuits last.

There seems to be no risk of missing what is state of the art, since every student all the time uses the most recent technology anyway.

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