# Virtual learning environments put new demands on teachers

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Introduction of hi-tech teaching aids in the classroom often comes with great hopes for enhanced learning. Yet a new doctoral thesis from the University of Gothenburg, Sweden, shows that new technologies per se do not improve student learning, and that they present new challenges to teachers.

Göran Karlsson has studied how instructional technologies – virtual learning environments such as 3D animations and model simulations – utilised to teach students science affect the way secondary school students reason about and understand scientific phenomena and concepts.

New technologies in schools, such as web-based applications that demonstrate scientific concepts, have sparked expectations that they will revolutionise learning. Karlsson's thesis shows that there is no evidence that supports the assumption that instructional technologies in themselves can improve students' understanding of a scientific concept. On the contrary, according to the study, there is a risk that the students – if they are left alone to make their interpretations – may not reach the learning targets.

'When students interpret the instructional technologies, they tend to draw very diverse conclusions depending on how the task is formulated, the support from their teacher, the structure of the model, the school's culture and language usage – all these factors affect how the students approach the task at hand,' says Karlsson.

New teaching aids imply new challenges for teachers. Both teachers and designers of these types of instructional technologies must try to understand students' interpretations of scientific concepts demonstrated via instructional technologies as a process rather than in the form of a final report.

Provided by University of Gothenburg