Artificial Intelligence in Education

School teachers could benefit from the assistance of artificial intelligence in classrooms, according to Erskine Visiting Fellow Professor Benedict du Boulay.

Professor du Boulay, who was recently hosted by Canterbury University's Computer Science and Software Engineering department for four months, is an expert in artificial intelligence in education from Sussex University, United Kingdom.

"Artificial intelligence could be a huge help to teachers in the classroom. I don't see a future where we have replaced teachers with computers but I think there are times when a teacher is trying to divide attention between a lot of kids and specially designed computer programmes can help fill that gap," he says.

Professor du Boulay says computer programmes that are designed with animated faces and audio can help children or adults solve problems while learning.

"The programmes are good for maths, science, computer science, biology and chemistry. The programme might know a lot about solving a particular maths problem so it watches over the student while they go through the various steps to work it out. It may not say anything until an answer has been submitted or if you start to go off track at an early stage it can say, 'I don't think that's quite right, try again'. But it depends what's built into the system," he says.

Professor du Boulay, who has worked on the technology with primary school children to radiologists analysing neuron-radiology on MRI scans, says artificial intelligence offers more resources in classrooms.

"The main benefit is it provides the possibility of off-loading some of the pressure on teachers. It's hard for a single teacher doing a class on algebra to help every kid as they are solving problems. They can collect answers and mark it later but not in real time. One of the ways the technology is useful is that a child or several children can work with the system and it comments while they are doing something," he says.

"Another area where technology can help is there are times where you might want to get the child or student to understand things but you can't easily do it without a simulation. You could imagine a system teaching people about the weather that can run simulations of weather patterns and invite students to predict what's going to happen. It's a more interactive way of education."

While at Canterbury University, Professor du Boulay worked closely with Professor Antonija Mitrovic (Computer Science and Software Engineering).

"There is a system routinely used in the department for learning about accessing databases. This system was produced by Professor Mitrovic and many variants of this system were built by her and her students. I have been interested in talking to Professor Mitrovic about a variant that keeps a log of what the students have been doing, but this log would go back over several sessions. I'm interested in the emotional and affected side of learning as much as the cognitive side. So this historical log could assist the system to comment on how things went in a previous session. Professor Mitrovic has done a lot of work in this area and that was a big part in me coming here."

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