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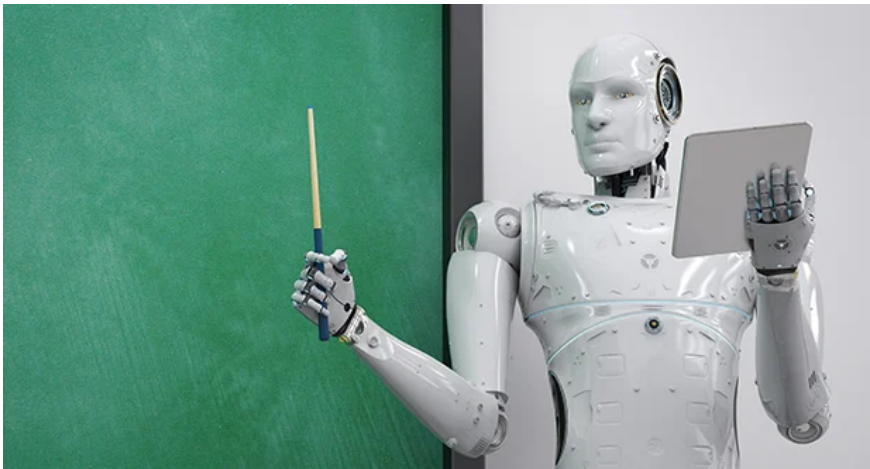
Uni experts consider whether robots can really take over in the classroom

👤 By: Wade Zaglas   📁 in Industry & Research, News, Top Stories, Workforce   🕐 September 23, 2019   💬 0

Concerns have taken hold that, in as little as 10 years, qualified teachers could be replaced by technology that is already performing many of the tasks ascribed to teachers, such as personalised learning activities, marking the roll and task-setting.

But that's not to say teachers will disappear forever, says Neil Selwyn, Professor of Education at Monash University and author of the book *Should Robots Replace Teachers*?

"We'll always need schools for reasons of childcare ... the worry is not that teachers are going to be replaced but that they're going to be displaced or de-professionalised," Selwyn said.

"Software never has a day off sick."

Selwyn told the *Sydney Morning Herald* that artificial intelligence was already providing benefits in the classroom, especially in terms of providing students with detailed, real-time feedback on their assessment. However, he was concerned that automatic roll-marking would eliminate the first important social interaction with students for the day and that humans should be marking assessments such as essays, as they are nuanced, somewhat subjective pieces of assessment that AI is still catching up on.

Professor Geoff Masters, who is leading the curriculum review in NSW, expressed concerns that relying too much on machine intelligence in the classroom would fail to inculcate students with the "deep knowledge" required for the future workforce. As low-skill jobs are disappearing, the importance of utilising technology to promote deep learning has never been more important.

"So, you know, it's fine to talk about collaborating or solving problems or creating new solutions or using technology ... but [if] you don't have a deep knowledge base, are you setting people up for futures where they're going to have more difficulty getting jobs?" he asked.

President of the New South Wales Teachers' Federation Maurie Mulheron weighed in on the argument, saying technology is merely a "tool" and humans are a "core part of teaching". He believes the educational technology market views schools as nothing more than "a market and students as anything more than a client, that's not education".

Professor Simon Buckingham Shum from the University of Technology Sydney, an expert in Artificial Intelligence (AI) and machine intelligence in education, said that robotic technologies often provoke strong emotions, but also argues they should be looked upon as something to assist teachers, not replace them.

"Each time a computer does something we never thought possible, it gives us pause for thought — another thing we thought was 'essentially human' turns out not to be, and that's threatening for many people," he said.

However, as far as performing other teaching tasks such as marking essays is concerned, Buckingham Shum contends that AI still has a long way to go – or perhaps will never get there. While he says it is good at marking short answers to rather simplistic questions – ones that are clearly correct or "gold standard" – he has no knowledge of technology that can accurately grade open-ended essays "requiring critical readings and careful argumentation".

"Instead of AI automation, we need to talk about AI augmentation of human intelligence and resources. Let's shift attention from automating grading to giving timely, actionable feedback. We know how important that is but offering 24/7 feedback on drafts from hundreds of students is obviously only practical with AI. So, at UTS we give instant formative feedback to students as to whether a draft bears the well-understood hallmarks of academic writing, to improve the final submission that will always be graded by an educator," he said.

The UTS expert in machine learning also agreed with Mulheron that human relationships are critical to students' development.

"The lifelong learning skills and dispositions that our young people need so badly are deeply social – they need to learn with others. AI can't take any of that into account, at least, not currently," he said.

At the same time, however, Buckingham Shum said AI was particularly good at being "a personal tutor" that can "stretch students gradually at their own pace, in a way that no teacher can do 1-1 with every student", especially in STEM subjects where there are clear right and wrong answers.

Buckingham Shum also responded to Mulheron's statement that "no parent, teacher or student is calling for this" type of robotic teaching in the classroom. The UTS professor does not dispute this and asserts that dialogue with all stakeholders is critical, with tech companies, teachers, unions, government, parents, students and universities required in the room. However, he is pleased the NSW Department of Education has already held a forum on data ethics, realising that the digital learning of the future will be increasingly reliant on AI technologies.

"Let's think systemically and design a trustworthy educational infrastructure. This may not match what Silicon Valley wants, but it must deliver what we want for our teachers and students."

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