Student perspectives, virtual welders and their effectiveness in developing welding skills.

Aim

This research provides lecturers with a student's perspective of the use of virtual technology (welding) to build welding skills.

Do learners consider Virtual Welding technology beneficial to the development of practical welding skills?

Does the ability to receive peer feedback during Virtual Reality practice sessions contribute to building a deeper understanding of the more technical aspects of welding technology?

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Ako Aotearoa NPF & NZQA

Multi-literacies-based e-assessments: Guidelines for effective assessment for learning in level 2 – 5 programmes post-qualification review

Selena Chan PhD

Why use a Virtual Welder?

The conditions for which a welder applies their trade is challenging. They are tested by poor visibility with a consistent requirement to decrypt the weld pool.

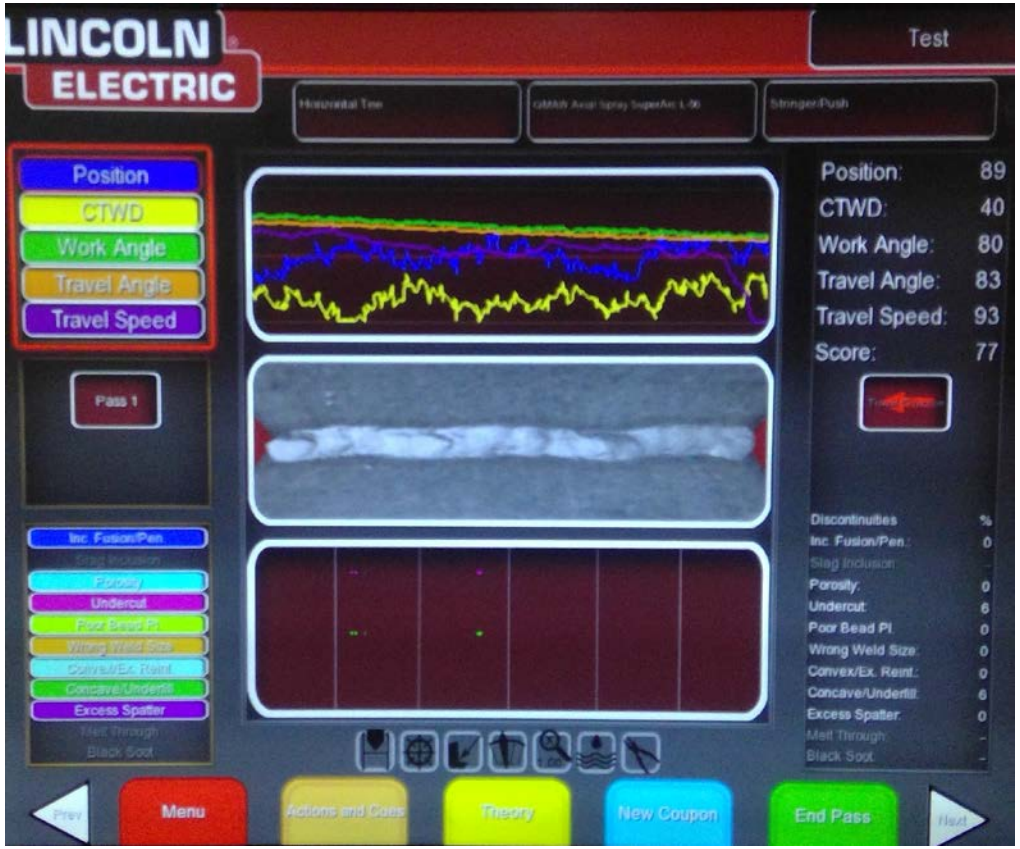
How does it prepare learners?

Learners are challenged by not having the experience to make sense of the sensory information received by the welding process

‘The virtual welders are less taxing and the help to build the muscle memory and, you can keep doing it without running out or having to spend time preparing material’ CAME Learner

The intensity of the arc demands the use of a face shield with protective lenses.

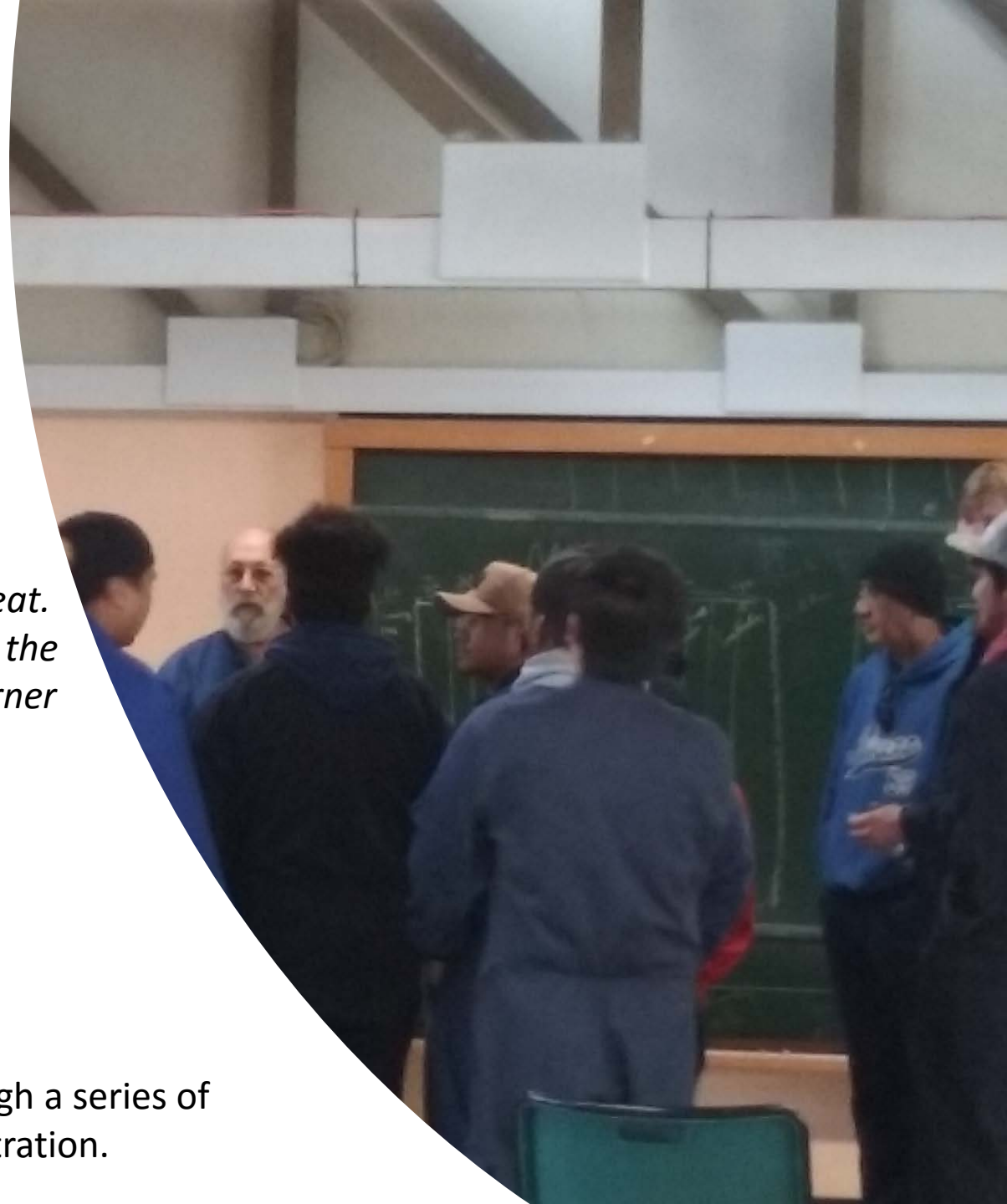
‘I think that it is a useful tool if we use both them and the real machines at the same time, instead of using the virtual welder first and then going to the real machines. What I’m saying is that I would like to use the virtual welder when I want to’. CAME Learner



‘When I started to work out what they meant the graphs helped especially the CTWD. It was good to know so you can correct yourself and after several times I got better at working them out and adjusting my welding’. CAME Learner

‘It may be similar, but the virtual machine has no feedback. The wire for instance is important. The virtual machine does not give you a real feeling of the results of the welding’. CAME Learner

‘With the real machine after a time, you get used to the heat. On the virtual, you get nothing like that but, the cheats on the virtual welder did help me sort out my angles’ . CAME Learner



A competent welder will exercise their skill through a series of controlled motions with intense levels of concentration.