

Use of virtual reality: evaluating the effectiveness of safety training interventions on rail engineering projects

Shelley Stiles, Brendan Ryan and David Golightly



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Safety training & the UK Rail Engineering Sector



Training has been a long-standing component of any safety management system (HSE 2013).

Training is one of the most commonly implemented interventions for companies seeking to improve safety (Colligan and Cohen 2004).



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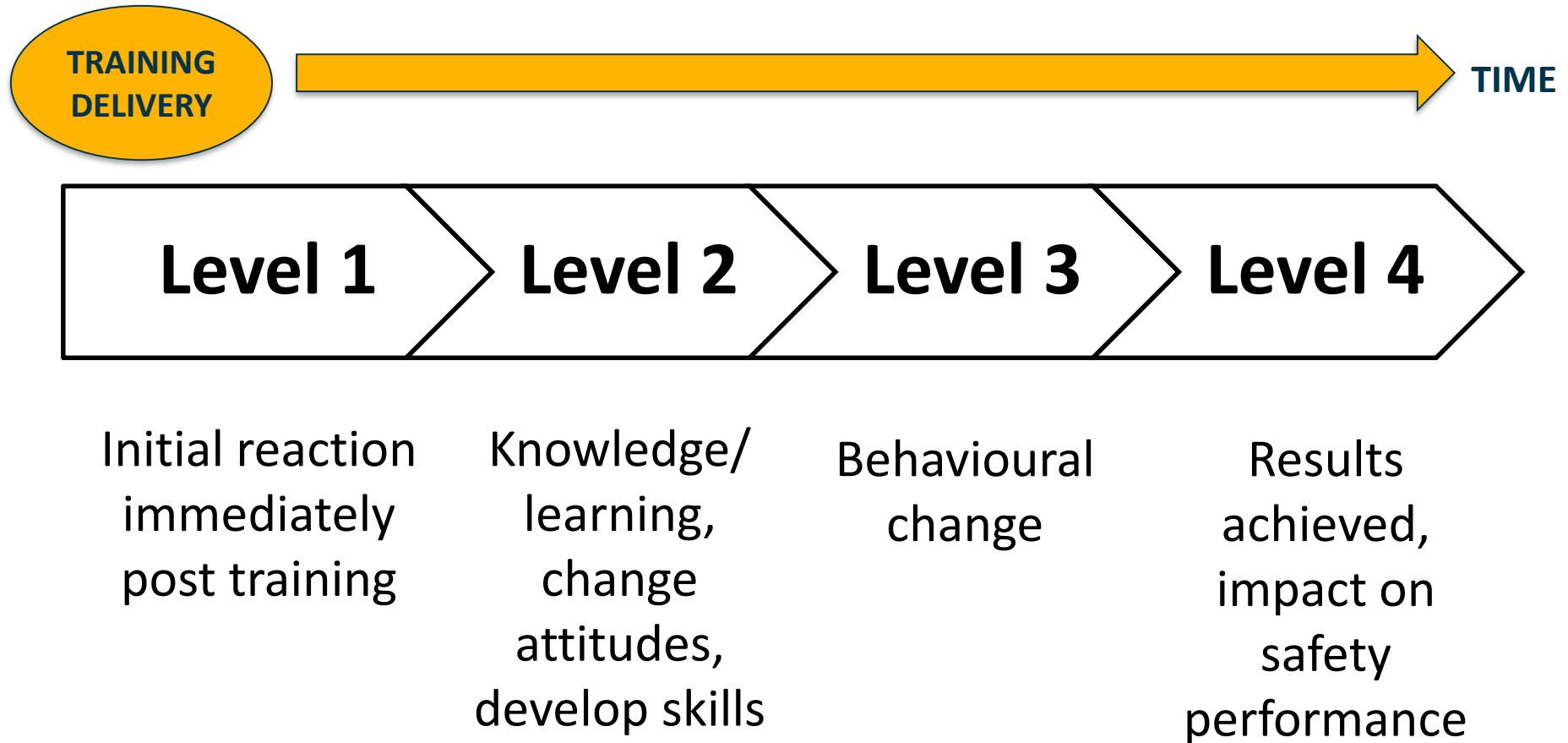


What makes safety training effective?

- Improving compliance
- Changing behaviours (Ekenes 2001 and Weidner et al 1998).
- Enhancing employee safety motivation and participation (Clarke and Flitcroft 2013)
- Transference to the workplace (Salas et al 1999)



The Kirkpatrick Evaluation Model



Use of VR for safety training



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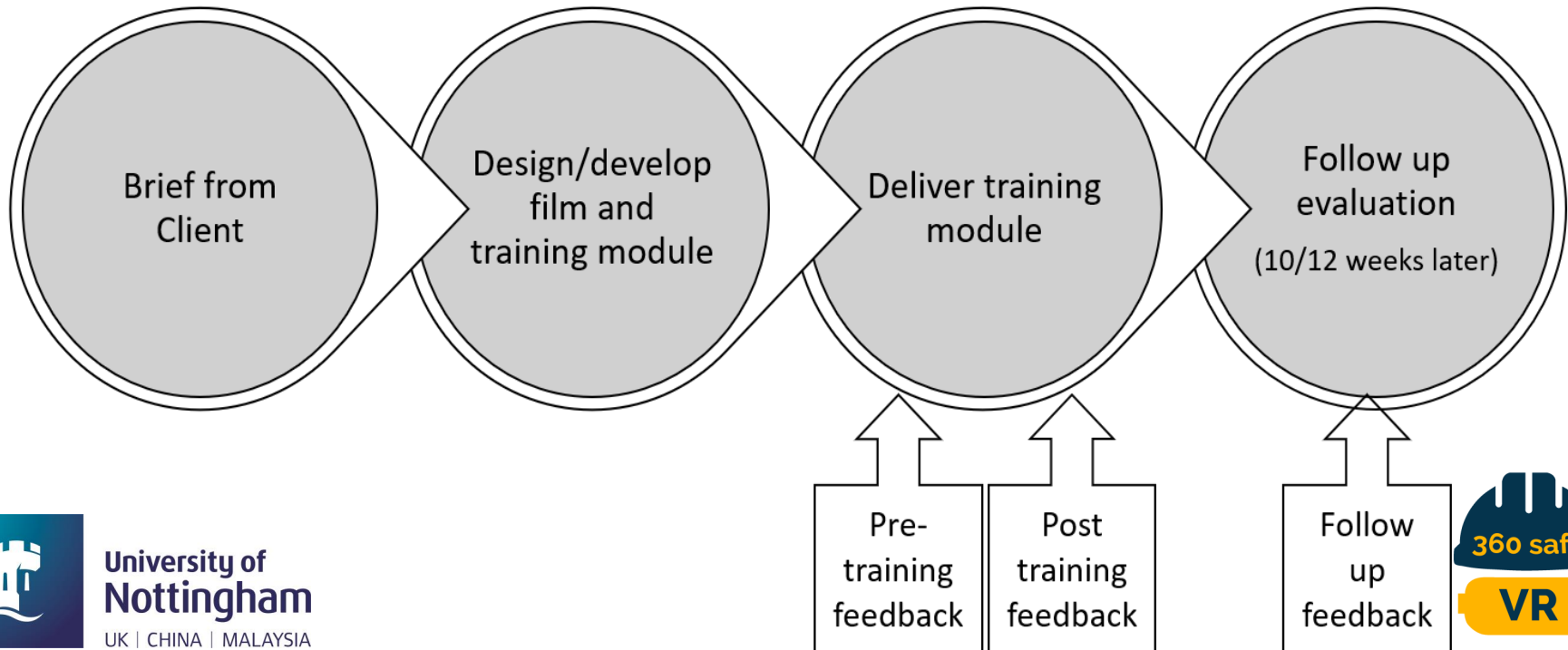


Study aims & objectives

- How do participants rate the use of VR technology for the delivery safety training?
- What do participants report is the impact of the use of VR technology has on them as individuals and teams?
- How do participants compare the use of VR technology with more traditional safety training?



Method



Demonstration of working around buried services module



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Results

72% had never experienced VR previously

86% said 360safeVR made more impact than any other safety training



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Results

Correctly answered the comprehension questions about key safety training points covered in the session

100%

immediately
post training



80%

in follow up
survey



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Results

71%

of users said they have personally changed their behaviours on site as a result of the 360safeVR training



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Conclusions



The use of VR technology and 360° film used as part of a safety training intervention can have a significant impact on an individual's behaviour.

360° film and VR provide an opportunity to deliver effective training to improve the safety within rail engineering projects.

Further studies are being undertaken to better understand the factors that contribute to such successful outcomes on safety.

