The VRLE Project
Virtual Reality Learning Environments:
reconfiguring healthcare education

VRLE Project aims and objectives: Fusion of education, practice, and research principles applied to Virtual Reality Learning Environments (VRLE)

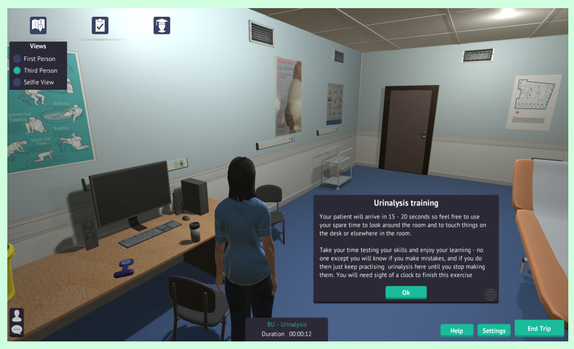
Education:
1. **Provide** students with realistic, easily accessible VRLE which are topic specific and profession generic
2. **Learn** as an individual, group or multidisciplinary collaborative
3. **Experience** VRLE on smart phones, tablets, laptops, and virtual reality enabled headsets.

Practice:
By offering realistic clinical experiences which could not otherwise routinely be guaranteed, VRLE supports students to:
1. Retain theory and apply it to clinical practice
2. Hone intuitive practice
3. Enhance humanization of care
4. Plan and provide holistic patient care

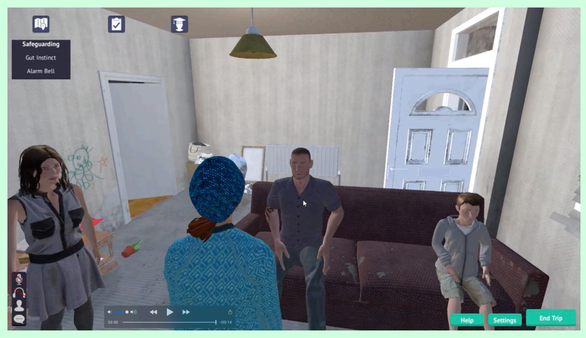
Research:
Towards more holistic clinical practice: exploring the impact of virtual reality learning environments on healthcare education.

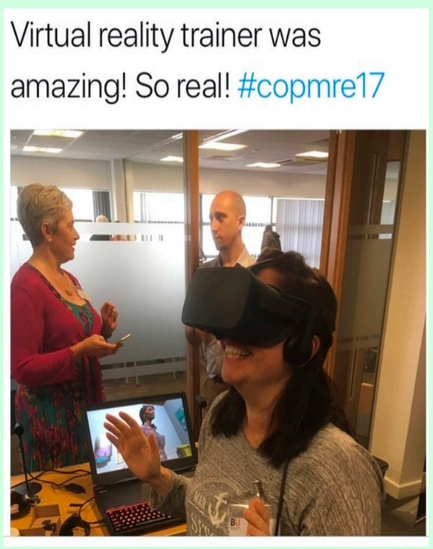
World Health Organization (WHO) have highlighted that learners globally have limited access to HE and educators internationally lack skills and necessary equipment as well as a lack of access to practical skills teaching and interprofessional learning. VRLE offers an equitable solution to this crisis.

WHO, United Nations Population Fund (UNPF), UNICEF, and International Confederation of Midwives (ICM). 2019. Framework for Action: Strengthening Quality Midwifery Education for Universal Health Coverage 2030. Geneva.



Students use the VRLE to experience the scenario and practice clinical skills as often as they wish. Above is a screen shot of the clinic room inside the VRLE for urinalysis and below is a screen shot from inside one of the VRLE for safeguarding families.





Tweet posted by a VRLE user. In this photo she was experiencing total immersion in the VRLE by wearing a headset. You can see her avatar in the VRLE on the screen behind her hand.

"I found it easy to use, you didn't have to worry that you were going to do something wrong."

"I think it's useful to practice virtually because there isn't any other way of practicing it apart from in a Skills Lab and we don't do that very often."

"I d think that you can not have enough tools, if somebody is offering you an opportunity to learn in a different way even if you maybe don't learn that way, I don't think that's ever a bad thing."

*"It gives you more confidence for when you are actually out in practice and you **are** doing it for real."*

"Overall impact is an improved learning experience for me and, as a result, better care for the patient from a more confident practitioner"

"I think it makes you feel more prepared for when you've gotta actually go and do it like in practice. You know what you're doing and why you're doing it."

"Practice brings confidence and knowledge, so the VRLE improves patient care"

"Thank you so much for your contribution to the Further Education for Leadership symposium on Ed-Tech that our team organised yesterday in Parliament. The virtual reality learning tools you brought were amazing and certainly could have helped me when I was a social worker many years ago and very much chime with the work the government is talking about when it comes to training the NHS work force."
(J. Shaw, Chief Executive, Policy Connect.)

Proposed benefits of using VRLE

Students:
Enhancement of education through:
- Increased autonomy related to how and when learning occurs
- Clinical experiences that cannot otherwise be guaranteed

Lecturers
Increased capacity for other activities through:
- Reduction of teaching time

University:
- Reduction on demand of teaching space
- Improved student satisfaction
- Increased staff capacity
- Improved staff resilience

Qualified Healthcare Professionals:
- Clinical experiences for CPD that cannot otherwise be guaranteed

Trial Implementation at Level 4
1.5 hour reduction in traditional teaching time

1. **Task one – Guided SMS** (= 1.5 hours teaching)
   Undertaken using Brightspace – see Denyse King's safeguarding sandbox (unit code: sbx_dk_353) for an example
   - Watch
   - Listen
   - Do
   - Read and reflect
2. **Task two – theory** (1.5 h face to face teaching)
   - See safeguarding sandbox for example
3. **Task three – applying theory to practice** (SMS= 1.5h teaching)
   - Exploring the VRLE
   - Answering MCQ within the VRLE
4. **Task three – supported reflection:** (1.5h face to face or using virtual classroom)
   - Professional discussion about individual clinical decision making
   - Online survey to feedback on individual student experience

Trial Implementation at Level 5
3 hour reduction in traditional teaching time

1. **Task one – theory as guided SMS** (= 1.5h teaching)
   Undertaken using Brightspace – see Denyse King's safeguarding sandbox (unit code: sbx_dk_353) for an example
   - Watch
   - Listen
   - Do
   - Read and reflect
2. **Task two – applying theory to practice** (SMS = 1.5h teaching)
   - Exploring the VRLE
   - Answering MCQ within the VRLE
3. **Task three – supported reflection:** (1.5h face to face or using virtual classroom)
   - Professional discussion about individual clinical decision making
   - Online survey to feedback on individual student experience

Trial Implementation at Level 6
3 hour reduction in traditional teaching time

1. **Task one – theory as guided SMS** (= 1.5h teaching)
   This is to be undertaken using Brightspace
   - Watch
   - Listen
   - Do
   - Read and reflect
2. **Task two – applying theory to practice** (SMS = 1.5h teaching)
   - Participating in the VRLE
3. **Task three – supported reflection:** (1.5h face to face or using virtual classroom)
   - Professional discussion about individual clinical decision making
   - Online survey to feedback on individual student experience

Poster and VRLE content written by Denyse King (VRLE project lead), supported and advised by students, patient representatives and research supervised by Dr. Isa Rega and Dr. Wendy Marsh.
VRLE developed in collaboration with Daden Ltd, a specialist VR education company . **For more info email: dking@bournemouth.ac.uk**