**The CILVRS Project**

**Collaborative Immersive Learning Virtual Reality Series for Healthcare Education**

**CILVRS 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
2. Learn as an individual, group or multidisciplinary collaborative
3. Experience VRLE on smart phones, tablets, laptops, and virtual reality enabled headsets.

**Practice**:
VRLE supports students to develop confidence in their ability to:
1. Retain theory and apply it to clinical practice
2. Provide optimum patient care

**Research**:
Explore impact of VRLE on confidence, knowledge and reasoning of healthcare students and the associated impact on patient care in clinical practice.

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**Step one**
Students learn theory of clinical practice in classroom, and how to apply this in clinical skills labs.

**Step two**
Students are introduced to the VRLE which they can access from a variety of devices and use anywhere there is access to the internet.

**Step three**
Students use VRLE to practice skills virtually as individuals, groups or part of multidisciplinary team.

**Step four**
Research student perception of their VRLE experience related to impact on learning, confidence and patient care.

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**Fusion with Practice**
Bournemouth University is proud to be exploring innovative ways to improve patient healthcare.

**Fusion with Education**
VRLE are offered as part of a range of learning choices at Bournemouth University, giving our students freedom to choose the education that suits them best.

**Fusion with Research**
Bournemouth University students are early career professionals who receive opportunities to collaborate in research with healthcare professionals, patients, and the university.

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**Research (ethics committee approval number: 15773)**

**Purpose**:
- Investigating impact of VRLE on students’ perception of confidence, knowledge and reasoning related to application of theory to clinical practice
- Facilitation of ‘safe fails’ (being able to make mistakes without harm to real life patients)
- Exploring VRLE impact on patient safety in UK and other countries.

**Significance of CILVRS Project**:
- First to study VRLE in healthcare for multidisciplinary students (currently nursing and midwifery but expanding to other disciplines in 2019)
- Research findings expected to contribute to the evidence base for best practice in virtual health education.

61 participants over eight months during research on a pilot VRLE where they could practice urinalysis. Mixed methods used to collect data by:
- Completing a pre-use survey
- Using the VRLE whenever, wherever, and as often as they wished
- Completing a post-use survey
- Participating in a focus group

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**Some research findings from pilot (urinalysis) VRLE**

**Did you feel this VRLE helped you to learn something new?**
Yes 76%

**Did you feel this VRLE increased your confidence with this clinical skill?**
Yes 68.6% (29.2% were unsure – focus group feedback indicated this question needed to be rephrased due to timing of pilot VRLE use blending with clinical placement time)

**What did you like best about this VRLE?**
Themes listed:
- Ability to practice skills
- No risk to patients if mistakes were made
- Interaction
- Available information
- Familiarisation with real life clinical practice
- Interesting new way to learn
- Able to learn as an individual

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**Lessons Learned**

**Education**:
1. Students report VRLE is valuable part of education
2. Students vary in technological skills
3. Students using VRLE need adequate technical support 24 hours a day
4. Need direct feedback from patients about VRLE relevance to their safety

**Practice**:
1. Students want access to each VRLE for longer
2. Students want VRLE for all area of curriculum
3. VRLE less expensive than high fidelity manikins overall but still costly to develop with ongoing costs

**Research**:
Student’s learning experience with pilot VRLE has been positive
- Students feel VRLE improves their confidence, skills and patient care

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**Next Steps**

**Education**:
1. Thread VRLE throughout the healthcare curriculums from 2019 onward
2. Support students to become technologically competent early on in their educational experience
3. Identify & allocate resources
4. Recruit patients to participate in research

**Practice**:
1. Source funding to increase user license to facilitate each student having longer time to experience / learn in VRLE
2. Source funding to develop a wider variety of VRLE
3. Explore ways to make VRLE partly or wholly self funding

**Research**:
Make VRLE functional reliability more robust. Continue to explore impact of VRLE on confidence, knowledge and reasoning of healthcare students both in the UK and abroad. Expand exploration of the associated impact of VRLE on patient care in clinical practice.

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Content written by Denyse King (CILVRS project lead), supported and advised by students, patient representatives, and a steering group formed of experts in education, health, leadership, technology. VRLE developed in collaboration with Daden Ltd, a specialist VR education company. For more info email: dking@bournemouth.ac.uk