

Enhancing Health Care Education and Practice Post COVID

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Abstract

Healthcare education and practice has significantly been impacted by COVID-19. This includes the challenge on pedagogical approaches that highlight the potential of technology to facilitate innovative new approaches in response to social distancing, lockdowns, remote learning and improving the patient experience and positive outcomes. Many of these innovative approaches are not fundamentally new but are now seeing relevance beyond early adopters to mainstream implementation. This presentation draws upon collaborations with educational researchers and technologists that have explored the integration of technology into healthcare education and practice and will highlight three outcomes: enabling opportunities for innovation in teaching and learning in response to COVID-19, interprofessional collaboration through design-based research, identification of design principles in response to COVID-19.

COVID-19 Adversity to Opportunity

Many healthcare programmes required reenvisioning teaching and learning approaches in response to COVID-19 restrictions. This had a particular impact on the development of interpersonal and practical knowledge and skills essential for healthcare graduates.

The limited access to on-campus learning provided an opportunity for both institutional and individual evaluation of pedagogical practices. The affordances of traditional, didactic, and “hands-on” skills were compared with those that could be facilitated using online asynchronous/ synchronous strategies. A particular concern was the development of the interpersonal and practical skills required in safe and effective healthcare practice. Alongside easing of restrictions, these skills were adapted using online demonstrations within the limits of socially distanced “bubbles”, telehealth and limited clinical placements. Reconsideration of summative assessments was also required- with the introduction online synchronous and asynchronous verbal assessments, and asynchronous submissions of practical skills online (Cochrane et al., 2021; Narayan et al., 2021).

In the prospect of COVID-19 restrictions continuing to lift, it is envisioned that most of the reenvisioned pedagogical approaches to healthcare education will persist, without compromising student critical thinking or practical skills.

Interprofessional Collaboration

Interprofessional collaboration in healthcare curriculum design has been facilitated through using a Design-Based-Research methodology (Chen et al., 2020; Kartoğlu et al., 2020) to redesign the curriculum around authentic learning and develop self-determined learning capabilities for healthcare professionals.

DBR- Design Principles in response to COVID

Transferable design principles will be introduced for enhancing healthcare education that will improve practice in a COVID19 world, particularly drawing from eight healthcare projects including: STUDIO602 – enhancing clinical practice with mobile technologies (Cochrane & Sinfield, 2022), developing a virtual reality handover experience for healthcare students (Cochrane et al., 2018), using immersive reality to develop critical thinking in clinical health education (Stretton et al., 2018), enhancing first responder clinical simulation education using immersive reality and biometrics (Cochrane et al., 2020), designing authentic learning for graduate entry nursing students (Macdiarmid et al., 2021), designing public and environmental health education (Kersey et al., 2018),

Biomedical engineering (Lam et al., 2021), and physiology education (Fabris et al., 2019).

References

- Chen, W., Sandars, J., & Reeves, T. C. (2020). Navigating complexity: The importance of design-based research for faculty development. *Medical Teacher*, 1-3. <https://doi.org/10.1080/0142159X.2020.1774530>
- Cochrane, T., Aiello, S., Cook, S., Aguayo, C., & Wilkinson, N. (2020). MESH360: A framework for designing MMR enhanced Clinical Simulations [Journal]. *Research in Learning Technology*, 28(Mobile Mixed Reality - Themed Collection). <https://doi.org/10.25304/rlt.v28.2357>
- Cochrane, T., Narayan, V., Aiello, S., Birt, J., Cowie, N., Cowling, M., Deneen, C., Goldacre, P., Alizadeh, M., Sinfield, D., Stretton, T., & Worthington, T. (2021, 29th November- 1st December 2021). Post Pandemic Socially Constructed Blended Synchronous Learning: Vignettes from the Mobile Learning SIG. ASCILITE 2021: 38th International Conference on Innovation, Practice and Research in the Use of Educational Technologies in Tertiary Education, University of New England (UNE), Armidale, Australia.
- Cochrane, T., & Sinfield, D. (2022). STUDIO602: A model for designing real world collaborations between Higher education and Industry. In K. MacCallum & D. Parsons (Eds.), *Industry Practices, Processes and Techniques Adopted in Education - Supporting innovative teaching and learning practice* (Vol. In preparation). Springer. <http://davidparsons.ac.nz/industry-in-ed/>
- Cochrane, T., Stretton, T., Aiello, S., Britnell, S., Cook, S., & Narayan, V. (2018). Authentic Interprofessional Health Education Scenarios using Mobile VR [Journal]. *Research in Learning Technology*, 26, 2130. <https://doi.org/10.25304/rlt.v26.2130>
- Fabris, C. P., Rathner, J. A., Fong, A. Y., & Sevigny, C. P. (2019). Virtual Reality in Higher Education. *International Journal of Innovation in Science and Mathematics Education (formerly CAL-laborate International)*, 27(8).
- Kartoğlu, Ü., Siagian, R. C., & Reeves, T. C. (2020). Creating a "Good Clinical Practices Inspection" Authentic Online Learning Environment through Educational Design Research. *TechTrends : for leaders in education & training*, 1-12. <https://doi.org/10.1007/s11528-020-00509-0>
- Kersey, K., Lees, A., Conn, C., Cochrane, T., Narayan, V., & Williams, M. (2018). "Context matters": The challenges and opportunities of designing tertiary public and environmental health education in South Auckland. *Pacific Health*, 1(1), 1-12. <https://doi.org/10.24135/pacifichealth.v1i1.8>
- Lam, L., Cochrane, T., Rajagopal, V., Davey, K., & John, S. (2021). Enhancing student learning through trans-disciplinary project-based assessment in bioengineering. *Pacific Journal of Technology Enhanced Learning*, 3(1), 4-5. <https://doi.org/10.24135/pjtel.v3i1.80>
- Macdiarmid, R., Winnington, R., Cochrane, T., & Merrick, E. (2021). Using educational design research to develop authentic learning for Graduate Entry Nursing students in New Zealand. *Nurse Education in Practice*, 102965. <https://doi.org/10.1016/j.nepr.2021.102965>
- Narayan, V., Cochrane, T., Aiello, S., Birt, J., Cowie, N., Cowling, M., Deneen, C., Goldacre, P., Alizadeh, M., Sinfield, D., Stretton, T., & Worthington, T. (2021, 29 November - 1 December). *Mobile learning and socially constructed blended learning through the lens of Activity Theory*. ASCILITE 2021: 38th International Conference on Innovation, Practice and Research in the Use of Educational Technologies in Tertiary Education, University of New England (UNE), Armidale, Australia.
- Stretton, T., Cochrane, T., & Narayan, V. (2018). Exploring Mobile Mixed Reality in Healthcare Higher Education: A Systematic Review [Journal]. *Research in Learning Technology*, 26, 2131. <https://doi.org/10.25304/rlt.v26.2131>