



## Interprofessional education programs to foster the use of Learning Health Systems

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Healthcare management continues to worsen, with process inefficiencies, wastage, unsafe practices and accordingly, non-optimal patient care. The concept of the Learning Health Systems (LHS) demonstrates the potential for the utilisation of health data in real time, through rapid and continuous cycles of data interrogation, implementation of insights into practice, and eventually practice change (Friedman & Flynn, 2019). Yet, the lack of appropriately skilled workforce results in an inability to leverage existing data to design innovative solutions. We identified a need to develop tailored professional development programs to foster skilled interdisciplinary learning communities in the healthcare workforce, as well as digital health champions that understand each other's roles and capabilities, to collaboratively solve these complex problems. Thus, we have developed multiple educational programs of work, including a professional development short course and a year-long Academy Fellowship program, to teach LHS principles.

The short course is wholly online, open to interdisciplinary professionals working in the digital health arena. To foster interprofessional learning, we assigned participants into working groups of five interprofessional members, who worked together and shared knowledge, perspectives and experiences in workshop activities throughout the 13-week course. We employed a flipped classroom approach, utilising various eLearning tools such as crowdsourced evidence synthesis Mind Maps; Jupyter Notebooks for hands on data interrogation, data visualisation and interpretation of machine learning models; clinical process modelling software (LucidChart); and virtual care platform for prototype testing digital health solutions (Datos), which showcasing the potential of technology

We undertook a mixed methods evaluation, to determine the utility and success of our programming. This framework consisted of pre- and post-surveys with identical measures of self-efficacy, ratings scales for engagement, usefulness, applicability and value for various aspects of the course. Participants were also invited to participate in a semi-structured interview post course. This allowed a deeper dive into themes relating to utility, barriers, recommendations for future applicability, and evolving digital health identity.

The evaluation results demonstrated that participants found the teaching model useful, engaging, applicable and valuable to their daily tasks and workplace LHS projects. Self-efficacy scales revealed a significant increase in perceive confidence. From interviews and analysis of free text responses, we discovered that the program gave participants a shared language and common understanding to converse with other interprofessional peers; transformed their perceptions of their role and the potential of data and technologies; provided a framework to organise their transformation plans; and finally provided a toolkit to refer to and operate from. The most notable observation from the LHS Academy Fellows, was a significant increase in the number of fellows identifying themselves as leaders at the end of their foundational coursework compared to at the start of the program.

It is clear that in order to transform healthcare systems to their full potential, it requires a workforce with an understanding of LHS and the potential of data driven approaches, as well as an appreciation for the need for diversly skilled learning communities to tackle these problems together.

Keywords: Learning health systems, health professions education, technology enhanced learning, continuous professional development, flipped classroom, informatics, data science, clinical informatics, data analytics

## References

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Dushyanthen, S., Perrier, M., Lyons, K., & Chapman, W. (2022, December 4-7). *Interprofessional education programs to foster the use of Learning Health Systems* [Pecha Kucha Presentation]. 39<sup>th</sup> International Conference on Innovation, Practice and Research in the Use of Educational Technologies in Tertiary Education, ASCILITE 2022, Sydney, NSW, Australia. <https://doi.org/10.14742/apubs.2022.26>

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