ONLINE, VIRTUAL, AND ADAPTIVE LEARNING ENVIRONMENTS: IMPROVING THE JOURNEY THROUGH LARGE FIRST YEAR CHEMISTRY COURSES

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Problem
The first-year experience is critical for student engagement, retention, and success. The transition from high school is optimally supported through: constructive teaching, supportive learning environments, student and staff interactions, academic challenge, active learning, and collaboration both on- and off-campus. In 2014 we undertook a successful restructure of our first year chemistry curriculum with the aim to improve individual learning progressions. With an awareness of transitional issues, we identified a critical need to introduce more flexible learning options by offering online delivery of key components of our courses. Many students experience challenges in their on-campus experiences; lecture clashes and inflexible timetabling are prime examples, as are the external pressures on students due to personal, family, or financial demands. These issues mean that many students seek more flexibility in their learning experiences, and the ability to access their course material online.

Action
To this end, we have developed a new blended alternative to one of our core first year courses, which was offered in the summer semester. The instructional design was informed by both chemical education research and technology enhanced learning research. In this presentation we describe the intention of each element of the course, how these were embedded and how they were evaluated for effectiveness, including the challenges faced by traditional chemistry academics working with new media and learning technologies. The outcome was a successful hybrid course with associated recommendations for practice.

Reflection
A survey and student interviews were conducted in order to evaluate the student perception of their learning experiences, especially when compared with face-to-face learning activities. Student performance was also compared with semester 1 and 2 of the same year, where the course was delivered in a more traditional mode. The outcomes of this evaluation will be presented at the conference.