Evaluating the redevelopment of a physiology online postgraduate unit

S. Lamon[1] and I. Story,[2] [1]Institute for Physical Activity and Nutrition (IPAN), School of Exercise and Nutrition Sciences, Deakin University, Geelong, VIC 3220, Australia and [2]Health Academic Development Unit (HADU), Faculty of Health, Deakin University, Geelong, VIC 3220, Australia.

Introduction: In 2017, over 20% of Australian students were enrolled in fully or partially online programs. In particular, 56% of Deakin University's post-graduate students selected online 'Cloud' learning options. Post-graduate programs attract older students, who often work full-time or part-time and have child-care responsibilities within the home. In this context, the emergence of web-based learning technologies has provided a unique opportunity for flexible learning. Nutritional Biochemistry and Physiology is one of the core topics of the post-graduate Human Nutrition course. In 2017, this unit was delivered as a series of 45-min online recordings, which received poor feedback from students. Innovative, online learning environments can help students to meet their learning objectives more efficiently, and the existing consensus suggests that offering content in multiple formats (written, auditory, interactive) help by addressing various individual learning styles. In order to promote self-directed learning and to increase the overall experience of the unit in 2018, we implemented a series of changes without fundamentally modifying the amount or type of content that was delivered. The aim of this study was to assess whether this new, self-learning orientated mode of delivery would influence student engagement, performance and satisfaction in the online learning environment.

Methodology: Seventy-five students enrolled in the Nutritional Biochemistry and Physiology unit in trimester 1, 2018 participated in the study. The participants completed a 24-question online survey during the final three weeks of the teaching trimester. Demographic and qualitative data were collected. For the qualitative part, we used an exploratory descriptive design using extended response questions. The students were asked to reflect about their personal learning experience within this unit, including their perception of the way the content was delivered, the requested time involvement and the different learning activities (short lectures, readings, videos, self-assessing questions and interactive pages). Student performance, engagement and satisfaction data were collected from the 2017 and 2018 'Cloud' data. Quantitative data was analysed using descriptive statistics. Qualitative was analysed using thematic analysis techniques

Results/Conclusions: Student overall performance and engagement did not significantly differ between 2017 and 2018; however, student satisfaction increased significantly. The largest improvements were observed for 'learning experiences' (42% increase), 'overall unit satisfaction' (56%), 'workload' (56%) and 'teaching quality' (97%). For all demographic groups, the new mode of delivery of the unit was preferred to a standard, 45-minute recorded lecture. In terms of meeting the unit learning outcomes, readings were judged the less effective activity (mean score = 7.2/10), followed by short recorded lectures (7.4), links to external videos and websites (7.5) and self-assessment questionnaires (7.9). This reflects a gradation from active /interactive activities (questionnaires, websites, interactive videos) being preferred by the students, to passive activities (lectures and readings) being found less efficient. The age parameter was the main variable explaining students' appraisal of the different activities. Students having only experienced face-to-face lectures as a way to deliver content at university before typically found more value in the short recorded lectures. This older age cohort also more strongly relied on the self-assessment questionnaires as a way to gain confidence before undertaking graded assessments. In conclusion, redeveloping an online unit from a standard to an interactive form presented multiple advantages in terms of student satisfaction, motivation and enjoyment without impacting their results or engagement levels. The interactive mode of delivery provided the students with a greater sense of inclusion while acknowledging for the heterogeneity of the cohort and the different learning styles associated to it.