ONLINE LEARNING FOR SCIENCE UNITS

Magdalena Wajraka, Ruben Phillipsb, Alexandra Yeungc

^aSchool of Science, Edith Cowan University, Joondalup, WA, 6027

KEYWORDS: online learning, laboratory skills, chemistry

Aims

The aim of this workshop is to stimulate a productive discussion with regard to whether it is appropriate to create fully online science units, such as chemistry, where laboratory skills are an essential part of the unit content. Also to share information from academics involved in creating online science units, what is best practice and what resources are available.

Sources of evidence

"Online learning is increasingly becoming a core activity in higher education and there is heightened interest across the sector with the recent implementation of massive and small open online courses in higher education [1]. These initiatives build on paradigms for open access to tertiary education already in existence including the Open University (UK) and Open Universities Australia." [2] Australian university students are attending university campuses less and are going online more to fulfil their learning needs [3,4]. "As students increasingly need to juggle the competing demands of work, family and study, the ways in which they engage with Higher Education institutions is changing. The use of technology is playing a key role in this change." [5]

Main argument

There is a strong push by Australian Universities to develop more fully online units where students don't need to attend any on-campus activities, however, should all units be implemented fully online? What is the place of online learning in a whole course? Do online units achieve specific learning outcomes which on-campus activities cannot?

Workshop description

This workshop will discuss experiences from implementation of two first year science units; chemistry and foundation of anatomy and physiology fully online at Edith Cowan University. Both of those units have been evaluated and have received interesting feedback. The chemistry unit only ran once fully online and will not run again, however, the human biology unit has now been running for almost 10 years.

References

- [1] Bates, T. (2013). Online learning and distance education resources. Retrieved February 26, 2013, from http://www.tonybates.ca/2013/01/06/outlook-for-online-learning-in-2013/
- [2] Tucker, B., Halloran, P., & Price, C. (2013). Student perceptions of the teaching in online learning: an Australian university case study, Research and Development in Higher Education: The Place of Learning and Teaching, 36, 36th HERDSA Annual International Conference, 1 4 July 2013, AUT University, Auckland, New Zealand
- [3] Gosper, M., Green, D., McNeil, M., Phillips, R., Preston, G., & Woo, K. (2008). The Impact of Web-Based Lecture Technologies on Current and Future Practices in Learning and Teaching, Australian Learning and Teaching Council. Retrieved May 5, 2014, from http://www.olt.gov.au/system/files/resources/grants-project-webbasedlecture-report-aug08.pdf.
- [4] James, R, Krause, K-L & Jennings, C, 2010, The first year experience in Australian universities: Findings from 1994-2009, Centre for the Study of Higher Education, The University of Melbourne.
- [5] Bower, M., Kenney, J., Dalgarno, B., Lee, M. J. W., & Kennedy, G. E. (2014). Patterns and principles for blended synchronous learning: Engaging remote and face-to-face learners in rich-media real-time collaborative activities. *Australasian Journal of Educational Technology*, 30(3), 261-272.

Proceedings of the Australian Conference on Science and Mathematics Education, The University of Queensland, Sept 28th to 30th, 2016, page 163, ISBN Number 978-0-9871834-5-3.

bSchool of Medical and Health Sciences, Edith Cowan University, Joondalup, WA, 6027

^cDepartment of Chemistry, Curtin University, Bentley, WA, 6102