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Teaching and Assessment in STEM – time for a change

Abstract

This session will explore the 21st century skills and capabilities that our STEM students will need as they live and work in a world dominated by technology, increasing uncertainty and complexity. Our teaching and assessment practices will need to change; we cannot continue to give students just static content-based learning activities that ignore the contextual consequences of working in a complex environment with many stakeholders. We will need to expand our repertoire of learning activities and assessment tasks to include a more sophisticated use of physical and virtual spaces that allow students to interact with each other and construct their assessment responses with access to whatever resources they require in order to make a meaningful response to a meaningful task. We should be able to identify students' decision making processes when they propose a solution to a real life problem. Students will need to be provided with more engaging learning activities and assessment tasks that will enable them to use the full range of capabilities. We will examine some of the implications of this new educational environment and reflect on our current learning and assessment practices in relation to the requirements of this brave new world.

About ther presenter

Geoff completed his BSc (Honours, First Class) at the University of Queensland in 1977 and his PhD in Chemistry at the Research School of Chemistry, Australian National University in 1981. After a Humboldt Fellowship completed at the Max Planck Institute in Mulheim an der Ruhr and postdoctoral positions at Colorado State University and the Australian National University, Geoff began his first academic appointment in 1985 in the Chemistry Department at the University of Melbourne. In 1988 he moved to the Chemistry Department at the University of Adelaide and continued discipline research and teaching until 2001. Geoff developed his passion for learning and teaching as well as continuing his work in chemistry during this time, being Associate Dean for Learning and Teaching for the Faculty of Science from 1999-2001. He was actively involved in the development of online learning and was appointed the Director of the Online Learning and Teaching Unit in 2001 to oversee the implementation of the university online system (MyUni). Geoff was the Director of the Centre for Learning and Professional Development at the University of Adelaide from 2002-2011 and was the Dean, Learning and Teaching at RMIT University in Melbourne from 2012-2015. Geoff received the University of Adelaide's Stephen Cole the Elder Prize (Excellence in Teaching) in 1999; the Royal Australian Chemical Institute Stranks Medal for Chemical Education in 2003 and Australian Learning and Teaching Council Fellowships in 2006 and 2009. Geoff is a HERDSA Fellow and a Principal Fellow of the HEA.

Recent Publications

1. Learning, Teaching, and Assessment Using Technology. Geoffrey Crisp, In Handbook of College and University Teaching. A Global Perspective. (Ed) James E. Groccia, Mohammed A. Al-Sudairy and William Buskist. Chapter 31, 2012
2. Assessment in Next Generation Learning Spaces. Geoffrey Crisp Ch5 in Kym Fraser (2014), The Future of Learning and Teaching in Next Generation Learning Spaces, in Kym Fraser (ed.) (International Perspectives on Higher Education Research, Volume 12), Emerald Group Publishing Limited, pp. 85 – 100
3. Trends and challenges of e-assessment to enhance student learning in Higher Education. Lourdes Guardia, Geoffrey Crisp and Ivan Alsina (2016) Chapter 3. In Innovative Practices for Higher Education Assessment and Measurement. Ed Elena Cano and Georgeta Ion. IGI Global