PRIOR LEARNING FACTORS IMPACTING SUCCESS IN FIRST YEAR GENERAL CHEMISTRY

Anna Miltiadousa,b, Deepa Ramc,d, Kieran Fergus Lim (林百君) a,e, Damien L. Callahan a,e, Madeleine Schultza,b

Presenting Author: Anna Miltiadous (anna.miltiadous@deakin.edu.au)
a Deakin University, Geelong, Australia
b Postal address: School of Life and Environmental Sciences, Deakin University, Locked Bag 20000, Geelong VIC 3220, Australia
c Deakin College at Deakin University, 221 Burwood Hwy, Burwood, Victoria 3125, Australia
d Postal address: Deakin College at Deakin University, Building 1a, Pigdons Road, Waurn Ponds VIC 3216, Australia
e Postal address: School of Life and Environmental Sciences, Deakin University, 221 Burwood Hwy, Burwood, Victoria 3125, Australia

KEYWORDS: chemistry education, prior learning, transition to university, engagement

Many students find the first semester of tertiary chemistry very challenging. This may be due to having weak backgrounds in chemistry and mathematics, lack of sufficient study time, poor prior teaching or lack of interest in chemistry. Academic staff have implemented various measures to support student engagement and achievement including small group tutorials, a variety of online resources, in-class polling, PASS sessions and weekly online quizzes. In this study we have used a diagnostic survey at the transition to university to investigate students’ prior knowledge in mathematics and chemistry and to establish demographic factors. The results from this survey have been compared with student engagement in various resources and their final scores in the unit in an effort to determine factors that could be used to identify students at risk of failure, and to evaluate the utility of the additional resources offered to students. Gender effects have also been explored.

ACKNOWLEDGEMENTS
This study has Deakin University human research ethics approval (STEC-52-2018-SCHULTZ).

Proceedings of the Australian Conference on Science and Mathematics Education, The University of Sydney and University of Technology Sydney, 2 - 4 October 2019, page 79, ISBN Number 978-0-9871834-8-4