



The development of model of teaching focused on engagement and retention in large first year science courses

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Abstract: *Our objective was to produce a model to transform the way in which large first year science courses are delivered. We did this by researching the problem, directly implementing a series of changes and carefully evaluating the changes that were made. We compared student exam grades before and after the redevelopment, and found a clear improvement across each passing grade level (average 3.5%), in addition, failure and withdrawal rate dropped by 14%. More specifically, students without a biology background, who traditionally fail at twice the rate as those with a background, succeeded at the same rate after the changes were made. This clearly indicates that the initiatives introduced, such as the introduction of PASS (peer assisted study sessions) and prelectures (giving year 12 background), were especially important in giving this group of students the opportunity to perform on an even level. Most notably for the School of Biological Sciences and the Faculty of Science, the increased engagement of our students has led to significantly more students enrolling in second year topics, an increase of 21%. These data clearly detail how the overall student experience in first year biology must have improved. The student perspective on the value of our changes actually demonstrates this quite clearly. A comparison of Student Evaluation of teaching was overwhelming positive toward the redeveloped course structure with mean responses on a 7 point Likert scale up by at least one point in all categories. We are therefore able to say with confidence that not only did students do better academically, but they also enjoyed the course more and were consequently more likely to continue in Biology in their second year of university study.*