

INVESTIGATING THE EFFECTS OF TRANSFORMING LABORATORY LEARNING

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BACKGROUND

At Monash University, a program called Transforming Laboratory Learning (TLL) is being undertaken over the next 3 years which seeks to alter the undergraduate chemistry practical experience to incorporate more inquiry-based learning¹ and to increase the industrial context of the program.

AIMS

The aim of this project is to monitor the effects of the above undertaking on the student cohort, as well as the teaching staff at Monash University.

DESIGN AND METHODS

In order to investigate the effect of TLL, surveys will be given to all undergraduate students, teaching associates, other teaching staff and academics at Monash University. This survey will be a combination of an in-house tested open question (to monitor the potentially shifting beliefs of laboratory aims) and a literature validated tool known as the Meaningful Learning in the Laboratory Instrument² (MLLI, which tests for student learning during a practical experience).

Furthermore, focus groups (of students and teaching associates) as well as one-to-one interviews with academics will be undertaken to obtain a more in-depth measure of the effects of TLL.

RESULTS

To date, preliminary data of one chemistry course has shown that students predominately (>70% response) believe the point of the laboratory exercises is to reinforce lecture material with only a small cohort (<25%) recognizing the need to be prepared for the workforce. Teaching associates typically answer with the same weighting. However, focus group data of the same course has already highlighted that students desire more contextualised inquiry-based learning and, upon probing, recognize the need for skills beyond simple knowledge retention. In late July 2016, all teaching staff (100+) and students (~1500) will have participated in the aforementioned survey and results from the data will be discussed at the conference.

CONCLUSIONS

So far, the need for TLL has been highlighted through the lack of student recognition of the importance of workforce preparation as noted in the preliminary survey. Additional data will be gathered to confirm this and the changes tracked over the next three years.

Teaching associate training will also be considered as a means to increase the efficacy of the laboratory experience at Monash University.

REFERENCES

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