

AIM for change: Supporting first year learning of best practice in scientific writing with a flipped, embedded Academic Integrity Module

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Abstract text:

Scientific writing is a fundamental professional skill but remains a daunting task for the trainee scientist. Understanding, synthesising and integrating research are essential scientific writing skills; however, appropriate use of the literature continues to be problematic with many students accidentally plagiarising because they lack paraphrasing and citation skills [1]. Materials to support students in developing these skills tend to be decontextualised, generic, and even ignored if they simply inform students about what plagiarism is without providing opportunities for hands-on training [2]. Furthermore, appropriate use of literature varies within professional disciplines, causing potential confusion if learned outside a given course of study. As writing scientific reports accounts for a substantial proportion of most undergraduate science assessments, discipline-specific academic literacy resources must be embedded early in the science curriculum. Such resources enhance student learning, build confidence and support the development of competent, employable science graduates.

Integrating discipline-specific resources requires disciplinary experts to re-evaluate curriculum design and teaching practice. At our university, this re-evaluation is encouraged through both institutionally driven and grassroots level initiatives. For example, the university promotes the embedding of First Year curriculum principles [3] into subject design for a scaffolded transition to university learning and has implemented the First Year Experience project, in which small interdisciplinary teams embark on curriculum change and share their findings at faculty-developed Communities of Practice. These initiatives supported our project on embedding an interactive online Academic Integrity Module (AIM) on academic literacy and professional skills in scientific writing in a first year core subject. By blending out-of-classroom exercises (flipped learning approach) with workshops incorporating peer-to-peer interaction, students engaged in independent learning that was strengthened in a supportive, "learning by doing" environment.

In the pilot program, engagement in the project was strong, as 60% of students completed the bespoke AIM even though no marks were associated with it. Evaluation surveys revealed that

students identified the importance of academic integrity to a science career (Likert score 4.19, n=245) and had a better understanding of why the correct use of the scientific literature was important for a scientific career (Likert score 4.17, n=247). On average, students who completed the online AIM performed better for the referencing criterion in their assessment than those who did not attempt the AIM.

Following the principles of good practice of SoTL [4] we disseminated our findings locally via university forums, showcasing our working example of embedding institutional initiatives in the discipline of science. This has led to collaboration with other disciplines to further develop and reframe our online AIM for different contexts. Our project clearly demonstrates how institutional initiatives can be successfully implemented and embedded into a large, first year science subject with positive outcomes for students' learning and changing practice within the University.

- 1.Devlin, Gray (2007) Higher Education Research & Development, 26:181-198.
- 2.Bretag et al. (2014) Studies in Higher Education, 39:1150-1169.
- 3.Kift et al. (2010) The International Journal of the First Year in Higher Education, 1:1-20.
- 4.Felten (2013) Teaching & Learning Inquiry: The ISSOTL Journal, 1:121-125.