Identifying Effective Feedback Strategies for Research Skills Teaching across STEM Subjects

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Abstract

STEM, a grouping of subjects which are considered to have a common scientific basis that unites them, yet is this the case? This workshop aims to explore the possibility of producing a framework to identify effective feedback strategies that can be implemented in research skills teaching across STEM subjects.

Research skills is taught by all STEM degrees, and although commonly used, research methods may vary from discipline to discipline, the core topics covered by research modules is the same, such as writing a literature review, referencing, etc. Therefore if there is any homogeneity in STEM modules where best practice can be shared across all subjects, research skills provides the greatest opportunity.

Research previously conducted with Informatics MSc students at the University of Wolverhampton found that research skills students' grades improved by one grade when feedback was provided to them in a variety of different ways, not simply as a written document. Written tutor feedback opportunities were planned into the module, but other feedback types were introduced, e.g. regular reviews of work by peers; written feedback from the tutor and verbal group feedback by the tutor. This was in response to student need when feedback provided in only one format did not appear to be completely understood, preventing students from maximising potential improvement to their work or developing their understanding of topics.

A feedback framework was produced as the result of working with the MSc students and this workshop aims to explore if the framework could be used across STEM subjects or if it is only applicable to Informatics students. Further exploration of feedback types for research skills teaching across a range of STEM subjects based on student characteristics could provide effective feedback strategies that meet STEM student needs.

Keywords
Feedback, formative, research skills, STEM student characteristics.

Plans for participants

Participants will be asked to discuss the following questions in small groups:

1. What are the characteristics of STEM students?
2. Based on the characteristics of STEM students what feedback types would be effective for research skills teaching?
3. Can a framework be developed for effective feedback strategies for research skills teaching across STEM subjects?

It is anticipated that the groups will be made up of participants from different STEM disciplines. A spokesperson for each group will be asked to feedback to the whole group to enable overall reflections.