
Mapping University Mathematics Assessment Practices

Edited by

Paola Iannone
University of East Anglia

Adrian Simpson
Durham University



Chapter 8

Presentations of Applications of Pure Mathematics

Abstract This case study presents the use of individual posters and presentations as coursework for a year 3 Game Theory module. The originality of the assessment in this module consists of creating a poster which illustrates an application of game theory to real world problems and presenting it.

8.1 Background and rationale

The introduction of individual posters and presentations as part of assessment of this module was motivated by discussion in the department about enhancing students' employability skills. There is a concern in the department about communication skills: students are offered only three opportunities to undertake a presentation in modules from the department, of which this module may be the first opportunity. In the lecturer's experience this sequence of assessment by presentations really improves students' communication skills: by the time they come to the presentation associated with their final year project, they appear to have grown in confidence.

8.2 Implementation

The Game Theory module was previously assessed by one-third class tests and two-thirds final exam. The coursework now consists of a poster and a 3-minute presentation. Students can choose among a list of small projects such as

- Contribution of John Nash to game theory
- The use of game theory to describe sexual selection
- Is believing in God a game theoretical problem? Consider Pascal's wager

as the subject for their poster. Students are also given the option to work as a group, but the final product has to be an individual contribution. The module outline contains a list of transferable skills developed by this assessment which includes: independent research, presenting results succinctly both on the poster and orally and group working.

The key advantages of this assessment are that the nature of the projects helps students appreciate how mathematics can be used to solve real-life problems. It also helps them develop both their oral and written presentation skills. However, there is

a concern that some students can become extremely nervous about the presentation component which may cause issues about fairness and equality.

8.3 Assessment

Stage	No. of students	Assessment pattern
Year 3/4	55	67% closed book exam 33% posters and presentations

8.4 Discussion, learning and impact

The lecturer who coordinates the Game Theory module believes that the coursework format she has adopted will contribute to an improvement in students' performance in other modules in mathematics. Moreover, students gain experience in new ways of presenting both orally and in written form. In her experience, the oral presentations have given the shy student confidence to speak in public and present their own ideas and work on the topic of the poster. Her view is that the majority of students enjoy the process, engage with it and are pleased with the outcomes. It also gives students new assessment experiences: some have never made a poster before, never researched a story, or worked as part of a team. This assessment also gives the lecturer the opportunity to get to know her students better and to see who might be suitable for postgraduate studies.

Mapping University Mathematics Assessment Practices
Published 2012.
University of East Anglia
ISBN 978-1-870284-01-1

The Intellectual Property Rights (IPR) for the material contained within this document remains with its respective author(s).

This work is released under a Creative Commons Attribution-NoDerivs 2.0 UK: England & Wales Licence as a part of the National HE STEM Programme.



Photographs on the cover are reproduced courtesy of Durham University, and under Creative Commons license from pcgn7 and ILRI.