
Mapping University Mathematics Assessment Practices

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Chapter 5

Presentations in Galois Theory

Abstract This case study presents the introduction of presentation and group work in the assessment of a year 3 Galois Theory module. The module syllabus follows a set textbook (Stewart, 2004) and as part of assessment the students are asked to present chapters from this book in group presentations.

5.1 Background and rationale

Changes in the module assessment occurred as a result of the lecturer's wish to offer students the opportunity to engage with mathematics in a more active way than the traditional lecture style. The lecturer thought it would be helpful for the students to work collaboratively for a mini-project on a section of the set textbook. This assessment was also intended to encourage students to think about how to present and communicate an advanced part of pure mathematics. In the past this module was assessed by the standard combination of 90% closed book examination and 10% coursework (weekly exercise sheets). The new assessment structure retains the exam component and introduces group presentations to complement the weekly exercise sheets.

5.2 Implementation

The advantages of introducing a presentation component in the assessment of this module appear to be that students participate in more active discussion in class and engage actively in their mathematics learning with their peers. The lecturer provides some instructions in how to prepare the presentation. They also gain experience of working in groups with their peers to prepare the presentation and practice oral communication skills. It should be noted, however, that while most appreciated the course, some students did not take well to the new style, and the lecturer felt that slightly less material was covered. In addition, as the class size has grown from 10 to nearly 50, the audience feels less inclined to get involved or feels more anxious about asking questions during the student presentations. There is also a concern that, with students presenting core material, a poor presentation could affect the whole class.

5.3 Assessment

Note that for the presentations everyone in the group receives the same mark. The presentations are assessed immediately and no marks are given to the written report.

Stage	No. of students	Assessment pattern
Year 3	55	80% closed book exam 10% presentation of a small group project 10% 3 weekly exercise sheets

5.4 Discussion, learning and impact

The new format of presentations and lectures encourages students to engage more actively with the course material and gives students practice working in groups and presenting mathematics, something that the lecturer felt was missing in the final year of the course. The lecturer believes that this teaching approach produces lively class interaction with much discussion of mathematical topics amongst students. He reported that the quality of the presentations varied: some students struggled, while others presented in a very professional way. The lecturer perceives that a drawback of this assessment method is the reliability of the marks for the presentations, but as closed book examination accounts for the majority of marks for the module he does not perceive this to be a big problem. Students' feedback indicates that the module is well received. One student wrote:

Interesting and enjoyable course in general. Having a specified text to follow also made things a lot more convenient. In addition the lecturer clarified many concepts and ideas from other algebra courses that were explained inadequately in those courses.

A few students were concerned about the novelty of teaching and assessment and indicated they preferred a more traditional type of module:

The course was very different . . . it wasn't very effective, compared to the lecturer lecturing.

Resistance of this kind can often be caused by the novelty of the assessment (and in this case of some of the teaching) and the lack of experience students have with these assessment methods. The lecturer's experience of teaching this module is also very positive, and he is planning to retain this assessment in future years.

References

Stewart, I. (2004) *Galois Theory*. Chapman Hall/CRC Mathematics Series.

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

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