Journal-club style presentations in a first year undergraduate course

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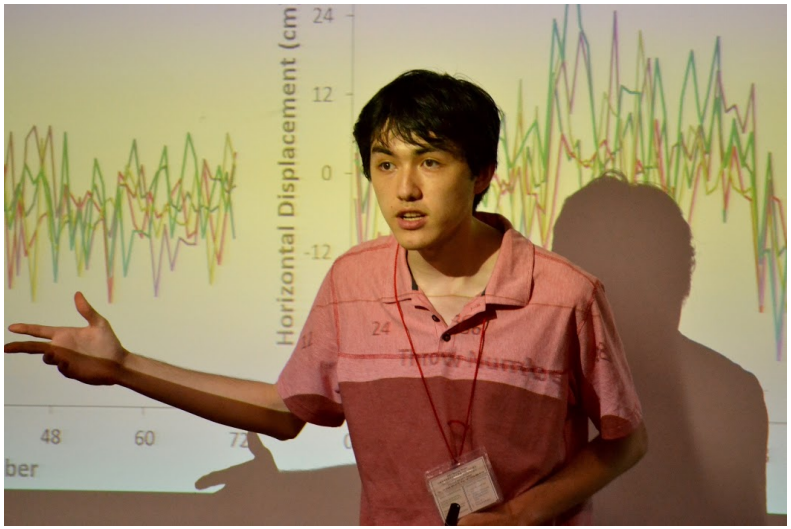
The setting

- Edinburgh-Zhejiang joint degree programmes in Haining, China
- Taught in English; most (but not all) students are Chinese
- Biomedical Sciences, Biomedical Informatics
- Introduction to Cellular and Molecular Biology is a compulsory first-year course
- Curriculum includes a lot of small-group learning and skills development

Idea behind "Journal Club" assessments



By Agoston Tyll and Yuuki Guzman, Okinawa Institute of Science and Technology, 2015 (with permission)

- Students to read an original research paper and present it to their peers
- Assessment that is close to a "real-life" task for a scientist
- Opportunity to read an original research paper
- Opportunity to present
- Opportunity for peer feedback

The secret:

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Provide steps

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6. **Prepare summative journal club:** Students are given paper 2 weeks in advance, and have at least 2 weeks after formative journal club
7. **Feedback and grade from summative journal club**

Grading rubric

Peer-grading form

Presenter: Date:

	3	2	1	0
Structure and Timing	The presentation was well structured, the structure was made clear, and the presentation was within the allocated time	The presentation could have been better structured in places, but was within the allocated time (or a bit shorter)	The presentation was not very well structured, or ran over time (had to be stopped by the instructor) or was a lot shorter than it should be	There was no recogniseable structure; the presentation was much too long (even after being stopped) or much too short.
Introduction	The introduction gave a very clear overview of the biological topic and other research that has been done in this area. The presenter explained the research question and hypotheses addressed in the paper.	The introduction gave a clear overview of the biological topic, but without considering other work done in the area. The research question and hypotheses were stated.	The biological topic was explained, but not very clearly. The research question or hpyotheses of the paper were not stated.	There was no explanation of the biological topic, and the research question and hypotheses of the paper were not stated.
Approach	The presenter explained the experimental approach the authors took. This can include a short explanation of unfamiliar methods (without going into too much detail). The presenter addressed the experimental design.	The approach used in the paper was explained, but some of the explanations were unclear. The experimental design was touched on, but not explained in detail.	The approach was stated, but not explained. There was little or no explanation of experimental design.	The experimental approach of the paper was not addressed. The presenter did not address the experimental design.
Results	The results were clearly stated. The presenter showed and explained the most important figures from the paper.	The results were stated and the most important figures from the paper were shown, but the explanation left questions open	The main results were stated, and figures were shown, but without adequate explanation.	The main results were stated, but no figures were shown.

Grading rubric

Critical thinking	The presenter provided an excellent critical evaluation of the paper, including an evaluation of *several* of the following: the approach and and experimental design, ideas for improvement and/or further research, how the results relate to the research question, the importance of the results in the context of what we know etc.	The presenter provided a good critical evaluation of the paper, including *some* of the criteria mentioned earlier	The presenter provided a small amount of critical evaluation.	The presenter provided no critical evaluation.
Questions	The presenter was able to respond well to all questions from students and instructors: They were able to explain concepts when asked, provided thoughts on ideas. They behaved respectfully towards other participants in the discussion, and encouraged them to ask questions.	The presenter was able to respond well to most questions, including both questions that asked for explanations and discussion points. They showed respect towards other participants in the discussion.	The presenter was only able to respond to some questions. No real discussion was possible.	The presenter was not able to respond to most or all of the question. And/or the presenter was rude towards participants who asked questions.
Delivery	The presenter spoke clearly and used appropriate presentation aids (diagrams etc.) to illustrate their points. Diagrams were clearly labeled. The presenter looked at the audience, rather than turning their back to them.	The presenter mostly spoke clearly and used appropriate presentation aids, but there were some small issues with the presentation (e.g. diagrams not labelled)	There were several issues with the presentation, but it was possible to follow.	The presentation style was so poor that it was impossible to follow.

Grading rubric

For the presenter:

Name one example of a thing the presenter did really well today:

Name one thing that they could improve in the future:

For the grader:

Name one thing about the presentation you liked and you would like to try in the future:

Feedback from students

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Which aspect(s) of the course have you found most challenging and why? You may wish to comment on lectures, tutorials, practicals, weekly quizzes, formative feedback and/or in course assessment (ICAs).

- Also the lectures, although they are helpful, they can be really difficult sometimes.
- Computational report is a difficult task and needs more instruction before the task.
- I think computational biology project is the most challenging. our group spared no effort to finish the project, but finally we got a low grade.
- ICAs
  journal club requires good understanding of the paper and logically organized presentation
- ICAs. Too hard and compose of too much marks.
- Journal Club can be a big challenge. Having a good understanding of the journal article, designing proper slides to transmit what I have learned makes anxious very much.
- Journal Clubs
- Journal club. It is difficult to present in English.
- Lecture. Some of lectures have around 50 slides and it is not easy to go through it.
- Lectures is most challenging. It takes most time to understand the key points in lectures.
- Some weekly quizzes were too simple, but some were difficult.
  Almost all quizzes lacked enough explanation and information for us to understand the idea.
  The assignment from our Journal Club was a little bit unfair...
  The feedback of our ICAs was provided a little bit later.
- The Journal Club. They are challenging since they are articles from journals.

Feedback from students

What did you find most valuable about the course?

- About the research methods.
- Get to know some professors who are very patient and kind towards undergraduates.
- Give very clear and detailed information about the cellular and molecular biology.
- I enjoy the practical classes.
- I have view the biology in a different level, and it is quite amazing.
- In lecture class, we knew the basic knowledge about Cellular and Molecular Biology. In tutorial class, Journal club improved our ability to read and understand paper and present key points to others in English.
- It offers me a integrated look into basic molecular and cell biology.
- It's difficult and challenging
- JC is very useful.
- Jouranl Club
- Journal club
- Journal club. It helped to develop the skills of reading and interpreting scientific journals, and also presentation skills.
- Journal club. It improved my presentation skills.
- Large amount of information in lectures.
- Link chemical knowledge and biomedical science together.

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- Fairness (difficulty of articles)
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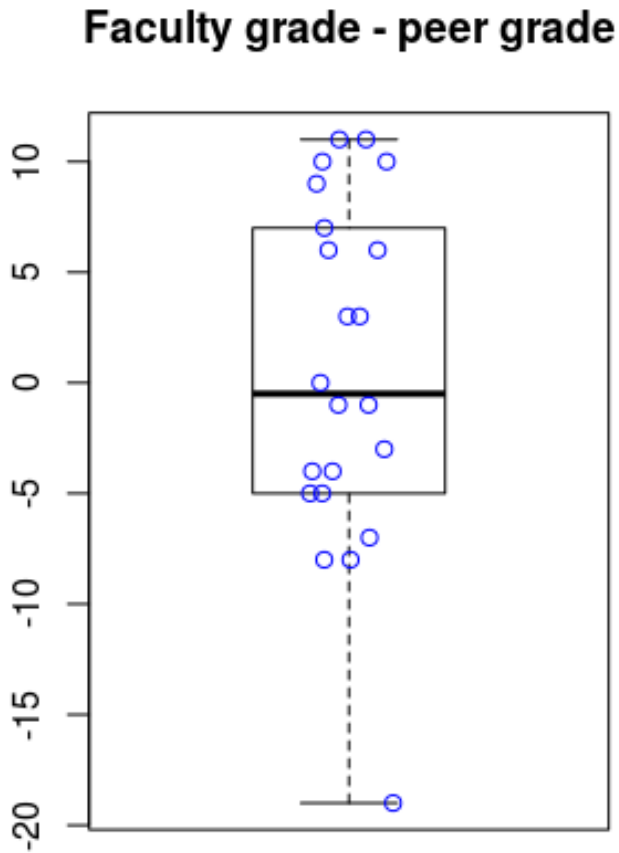

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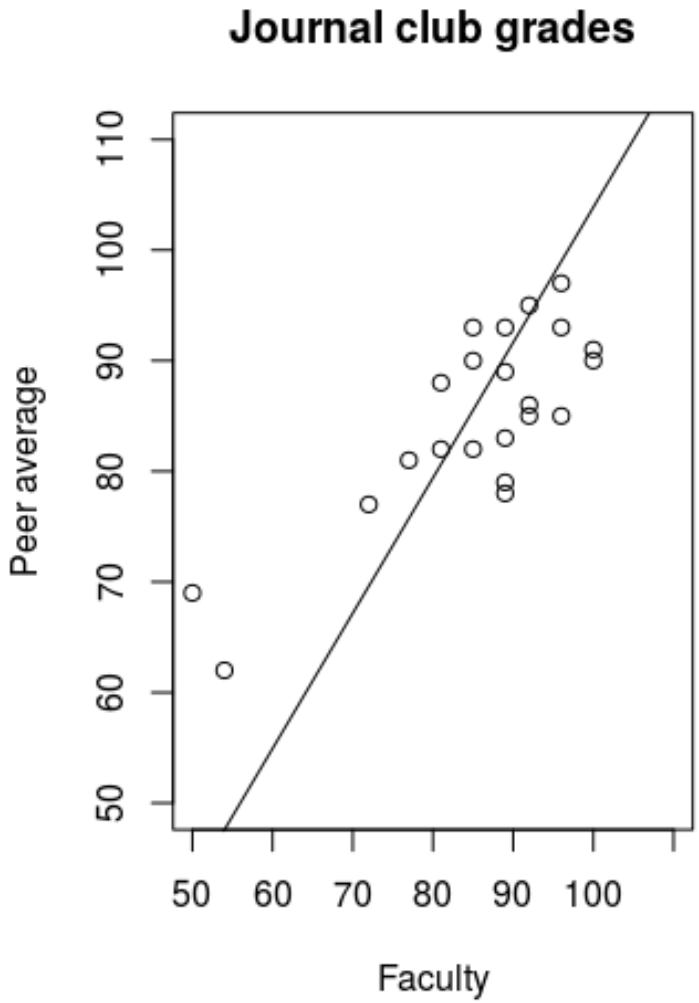

Lessons learnt

- Even a difficult task can be tackled in first year with enough preparation
- This requires a lot of faculty time and buy-in
- Students appreciate the challenge, even if they find it difficult
- Issues around fairness (and perceived fairness) must be carefully managed

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Happy New Year!

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