

## Submissions Abstract Book - All Papers (Included Submissions)

0461

Student and staff perspectives of open-book versus closed-book assessments – a case study from an undergraduate biology course

Rebecca K. Pike<sup>1</sup>, Sheila Amici-Dargan<sup>1</sup>, Emily Bell<sup>1</sup>, Christopher Cammies<sup>1</sup>, Ben J. Chant<sup>1</sup>, Daniela Dietrich<sup>1</sup>, David A. Lawson<sup>1</sup>, Andy Wakefield<sup>1</sup>, Rose R. Murray<sup>1</sup>

<sup>1</sup>*University of Bristol, Bristol, United Kingdom*

**Research Domain:** Learning, teaching and assessment (LTA)

**Abstract:** Following the global pandemic in 2020, programmes were forced to abandon traditional closed-book end of unit exams in exam-halls and adopt an unfamiliar style of end of unit examination: open-book assessments. This study set out to evaluate student and staff perceptions and experiences of open-book assessments. A mixed method interpretivist approach was used via a survey which included closed Likert scale and binomial questions as well as open ended text-based questions. Following quantitative and thematic analysis we found open book assessments improved student perceptions of deep learning, improved self-regulated learning, increased wellbeing through being a less stressful experience. However, such assessments also highlighted the misalignment of values between staff and students within assessments. Overall, the majority (89.7% of year 2 and 88.2% of year 3 students surveyed) of students preferred open-book assessments compared to traditional exams. This evaluation has proved invaluable in terms of informing our future practice, and the pandemic experience has transformed our programmes for the better, with opportunities for greater inclusivity, stress management and deeper, more self-regulated learning for students. We recommend programme leaders consider including open book assessment in their courses in the future.

**Paper: Student and staff perspectives of open-book versus closed-book assessments – a case study from an undergraduate biology course**

### Introduction

Assessment is one of the key drivers of student learning and it is therefore important to understand the benefits of assessment types in relation to staff and students. COVID-19 led to the closure of campuses which subsequently triggered changes to student examination as students were unable to sit traditional style closed-book assessments in exam halls. Previous studies have demonstrated the benefit of open-book assessment in terms of encouraging engagement and improving understanding of course material (Eilertsen & Valdermo 2000), as an opportunity for students to develop critical thinking skills (Ashri & Sahoo 2019), by being a more authentic task (Feller 1994), and by demonstrating that students prefer open-book to closed-book exams as they are less stressful (Philips 2006, Swart & Sutherland 2014). However, there is limited subject specific research assessing the use of open-book assessment in Biological Sciences.

This research aimed to explore whether the experience of staff and students in our programmes reflects this positive perception of open-book assessments in the literature and whether we should adopt open-book assessments long term, following the emergency adoption during the Covid-19 pandemic. Our research questions are:

1. What is the student experience of open-book assessments compared to closed-book exams on their wellbeing and perceived academic performance?
2. What is the staff experience of online, open -book assessments compared to paper-based closed-book exams, in terms of workload, wellbeing and their perceptions of the quality of student answers?

## **Methods**

The investigation was undertaken with an interpretivist view because we were interested in the lived experience of the students and staff. A survey was sent via email to both year 2 and year 3 undergraduate students and staff in the School of Biological Sciences asking them to participate in the study. Eighty-seven students (c. 40% of the year group) from year 2 and 102 students (c. 46%) from year 3 completed the survey (n = 189); students and staff participated in this study after assessments were handed in and prior to students receiving marks and feedback on their assessment. A mixed methods design approach was used where the survey included a mix of Likert scale, binomial questions and open-ended text-based questions. A combination of quantitative and thematic analysis was then completed following the six-stage method outlined in Braun & Clark (2006, 2012), with researchers independently coding the qualitative data in a latent fashion according to an interpretivist approach, comparing codes in small sub-groups and then generating themes in larger group discussion.

## **Findings and discussion**

Overall, the majority (89.7% of year 2 and 88.2% of year 3) of students surveyed preferred open-book assessments compared to traditional exams. Following quantitative and thematic analysis, we found four main themes: deep learning; self-regulated learning; stress and wellbeing; misaligned values. Students reported evidence of deeper learning when compared to traditional exams in reference to higher order cognitive skills (revised Bloom's taxonomy), and that this assessment provided the opportunity to drive deeper independent learning *during* the assessment window rather than prior to a traditional exam. They also indicated that they were more capable of managing their own learning through editing, revising and taking pride and even enjoyment in their own work. Whilst stress and anxiety were not eliminated, many students and staff reported a better wellbeing experience when compared to traditional exams, and that these stressors tended to be of a different nature. It was interesting to learn that many students held differential values for assessment components and types, notably with regards to expressing their ability within the word limits of the assessment, or that those with a natural inclination for exams would be disadvantaged as their propensity for "remembering" would be of limited use

This evaluation has proved invaluable in terms of informing our future practice, and the pandemic experience has transformed our programmes for the better, with opportunities for greater inclusivity, stress management and deeper, more self-regulated learning for students. Results have

also highlighted focal areas for enhancing the student experience.

We were pleased to learn of the positive impact the new assessment type had on our students and staff and recommend programme leaders consider including open-book assessment in the future, even after restrictions related to COVID-19 and online learning are over. Addressing these questions allow us to make suggestions for instructors who wish to improve critical thinking within assessments and a better wellbeing experience for students and staff.

**References:** Ashri, D. & Sahoo, B.P. (2021). Open book examination and higher education during COVID-19-case of University of Delhi. *Journal of Educational Technology Systems*, **0**(0), pp. 1-14.

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, **3**(2), pp.77-101.

Braun, V. & Clarke, V. (2012). *Thematic analysis*. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology*, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological (pp. 57–71). American Psychological Association. missing publisher location

Eilertsen, T.V. & Valdermo, O. (2000). Open-book assessment: a contribution to improved learning? *Studies in Educational Evaluation*, **26**(2), pp: 91-103.

Feller, M. (1994). Open-book testing and education for the future. *Studies in Educational Evaluation*, **20**, pp: 235–238.

Phillips, G. (2006). Using open-book tests to strengthen the study skills of community-college biology students. *Journal of Adolescent and Adult Literacy*, **49**(7), pp: 574-582.

Swart, A. & Sutherland, T. (2014). Student perspectives of open book versus closed book examinations—a case study in satellite communication. *International Journal of Engineering Education*, **30**, pp: 210-217.