Teaching advancement at Universities (TAU) project
Improving the integrity of open-book online assessments in the faculty of law
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The Teaching Advancement at Universities (TAU) project offered me the opportunity to contribute to a project that is aimed at improving the integrity of open-book online assessments in a non-proctored environment. The Covid-19 pandemic forced academics and students to move learning, teaching, and assessment online. This project specifically focused on the incorporation of problem-based questioning in open book assessments as opposed to other forms of questioning. The ensuing section will give a brief overview of specific components the examiner needs to consider before embarking on the open book assessment route. Following this, it will look at the advantages and disadvantages of open book assessments. Thereafter, it will look at the aims of an open book assessment and assess whether these aims can be achieved through problem-based assessments. Furthermore, it will draw inferences and recommendations from other fields of study that may be adopted to assist in improving the problem-based questioning technique within the legal field of study.

Introduction

Assessments are a tool used by lecturers to assess the students' ability to understand a specific module. These assessments may take the form of a traditional assessment, like a closed book assessment or an alternative assessment, like an open book assessment.[1] In cases where students are assessed in a closed-book fashion, the intention is usually to assess the ability of the student to memorize the work and students will not be allowed to check their study materials during the assessment.[2] Closed book assessments arguably do not allow students to either have room for creativity or to acquire requisite skills in problem-solving because their cognitive goal is mainly to test a student's ability to recall information.[3] In contrast, in cases where students are assessed in an open book manner, the intention is to assess whether the student is able to comprehend or understand the subject matter in a practical sense and apply it to the questions posed. In this instance, students are allowed to make use of various study materials whilst undertaking the assessment.[4]

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[1] Chan and Mui "The use of open-book examinations to motivate students: a case study from Hong Kong" 3 1 2004 *World Transactions on Engineering and Technology Education* 111.
[2] Rakes "Open Book Testing in Online Learning Environments" 7 1 2008 *Journal of Interactive Online Learning* 1.
[3] Gupta "Open-Book Examinations for Assessing Higher Cognitive Abilities" (2007-12-12) *IEEE Microwave Magazine* 46.
[4] Myyry and Joutsenvirta "Open-book, open-web online examinations: Developing examination practices to support university students" learning and self-efficacy" 12 2 2015 *Active Learning in Higher Education* 121.

<u>Background</u>

A departure from the traditional assessment approach is not an easy task for either the examiner or the students. There are multiple factors that need to be considered when an examiner opts to start making use of open book assessments. From as early as 1999, academics like Dr Paul Maharg, postulated that to fulfil the purpose of an open book assessment three components need to be met. Firstly, the examiner needs to carefully examine the learning objectives, assess the teaching methods, and ensure that both the learning objectives and teaching methods align with how the module is administered. Secondly, when considering adopting open book assessments, there may need to be a restructuring of the models used in the learning process and reshaping of attitudes in relation to professional practice. Thirdly, the examiner needs to ensure that open book assessments are part of the prescribed assessment criteria in cases where the specific course is subject to complying with a professional regulatory body.[5] Maharg's view is supported by Deneen who reiterates that special attention ought to be placed on the exam design and intended assessment outcomes when opting to have open-book assessments.[6] Unfortunately, the Covid 19 pandemic did not allow the luxury of time to restructure one's modules.

<u>Advantages and disadvantages</u>

From a students' point of view, open book assessments have the potential to reduce anxiety to a large extent, as students will no longer have to memorize all the content for the module.[7] Depending on whether the module is designed for lower order thinking or higher order thinking, the way students prepare for the assessment may differ. According to Myyry and Joutsenvirta, a study found that when faced with low order assessments which have multiple choice questions, students read on the surface, and when faced with higher order assessments like essays, students studied in detail.[8] This study reflects the possibility that in cases where students are aware that they will be required to show higher order thinking, they do not just study to know the work, but rather study to understand the work, so as to apply it later when answering a question. Kaur argues that open books assessments generate a good environment for students to think.[9] He argues that:

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[5] Maharg "The Culture of Mnemosyne: Open book assessment and the theory and practice of legal education" 6 2 1999 *International Journal of the Legal Profession* 217-218.

[6] Deneen "Assessment considerations in moving from closed-book to open-book exams" May 2020 *Melbourne centre for the Study of Higher Education* 1.

[7] Rakes 2008 *Journal of Interactive Online Learning* 2; Chan and Mui "2004 *World Transactions on Engineering and Technology Education* 111; Spiegel and Nivette "The relative impact of in-class closed-book versus take-home open-book examination type on academic performance, student knowledge retention and wellbeing 2021 *Assessment & Evaluation in Higher Education* 2.3

[8] Myyry and Joutsenvirta 2015 *Active Learning in Higher Education* 122.

[9] Kaur "Open book examination: A tool for assessment" 5 4 2016 *International Multidisciplinary E-Journal* 117.

"in order to develop creative and independent thinkers, more open-ended tasks that reflect real-life situations – questions involving problem-solving should be incorporated in examinations."[10]

Through this argument, Kaur not only shows support for open book assessment but also emphasizes the need from the questions to be problem-based. This is important for three reasons which also show the advantages of open book assessments. Firstly, open book assessments that are problem-based can measure the students' capability to find information, organize it and apply it to the question at hand.[11] Secondly, it gives the student an opportunity to learn whilst doing the assessment.[12] Thirdly, it stimulates creative thinking, as in most cases students are not confined to specific prescribed study materials, thereby affording them the opportunity to provide creative but practical solutions.[13] These advantages are also supported by Parker who reiterates that open book assessment that are problem based force the student to actively engage with the content in order to come up with a solution.[14] By doing so, students develop interpersonal skills like identifying the crux of the problem, finding relevant sources and subsequently acquire various other learning and research skills.[15] Additionally, answering problem based questions equips the student with problem solving skills that will prepare them for the professional world.[16] Problem based assessments are an opportunity for the examiner to incorporate real world scenarios into teaching and learning program.[17] Where open book problem based assessments take the form of group work, it equips students with learning collaboration or teamwork skills, which is something that they may be exposed to in the professional world.[18]

Open book problem-based assessments promote comprehensive preparation and allows consistent deeper learning throughout.[19] The student is forced to read, think, and apply the knowledge they would have acquired from various sources that they would not have

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[10] Kaur 2016 *International Multidisciplinary E-Journal* 117.

[11] Rakes 2008 *Journal of Interactive Online Learning* 1.

[12] Parker, Watson, Dyck and Carey "Traditional versus Open-book exams in remote course delivery: A narrative review of the literature" June 2021 Paper 029 presented at the Proceedings 2021 Canadian Engineering Education Association Conference 1.

[13] Myyry and Joutsenvirta '2015 *Active Learning in Higher Education* 122.

[14] Parker *et al* Paper 029 presented at the Proceedings 2021 Canadian Engineering Education Association Conference 4.

[15] Kilroy "Problem based learning" 21 4 2004 *Emergency Medicine Journal* 413.

[16] Parker *et al* Paper 029 presented at the Proceedings 2021 Canadian Engineering Education Association Conference 4.

[17] Baviera-Puig, Ecriba-Perez, Buitrago-Vera, Ramon-Fernandez, Rivera-Villas, Roig-Merino, Sigalat-Signes and Pons-Valverde "An example of problem-based learning (PBL) from a collaborative and multidisciplinary approach" Proceedings of EDULEARN16 Conference (4- 6 July 2016) Spain, Barcelona 5873.

[18] Parker *et al* Paper 029 presented at the Proceedings 2021 Canadian Engineering Education Association Conference 4.

[19] Rakes 2008 *Journal of Interactive Online Learning* 2; Chan and Mui 2004 *World Transactions on Engineering and Technology Education* 111; Jeijne, Kuks, Schonrock-Adema and Snijders "Open-book Tests to Complement assessment programmes: Analysis on open and closed book tests" 13 2006 *Advances in Health Sciences* 264.

ordinarily read in a traditional assessment setting. In other words, open book assessments lend themselves towards forcing students to seek more sources related to the topic, for them to formulate a well-balanced solution to the problem. By doing so, students engage in higher order thinking to make sure that their answer is practical and confined to a specific area that touches on the subject matter in question.[20]

However, there are also disadvantages associated with open book assessments. Academic integrity in an online space when the assessment is open book is questionable.[21] The examiner cannot monitor who is taking the assessment and where their information is coming from as students make use of a multiplicity of sources that may also be foreign to the examiner. As a result, the examiner hopes that the student will abide to the code of conduct by doing their own assessment and not plagiarise work from other authors. This rationale of an academic hoping and not having a controlled environment to assess the students' understanding of the modules already compromises the academic integrity of their open book assessment. Students lose time and at times tend to focus on irrelevant material when they are not limited to using specific reference material.[22]

Another disadvantage one also needs to consider is the different educational backgrounds of the students. Some students have the requisite research skills to deal with problem-based questions as they know where and how to access sources, whilst those from rural areas may not have had any prior research skills development. As a result, the former student will likely reference primary sources like legislation, books, and journal articles, whilst the latter student will reference the first sources, they find in a google search like newspaper articles and blogs which are less reliable sources. In a traditional closed book assessment, all students would have had access to the same materials as prescribed by the examiner.[23] There is also a common perception that open book assessments result in standards falling and shallower learning for students as they copy and paste various information.[24]

Furthermore, if the examiner does not design the open book assessment properly, this may lead to various problems not only for the examiner but the students. If the examiner's questions are too wide, this will increase their marking load because they must verify a multiplicity of sources and ensure that the students did not plagiarize. By not being specific, an examiner may end up getting answers that contain information that is not relevant to the module. As a result, examination design can be a disadvantage if the examiner phrases his questions in a particular way. For the student, an open-ended open book assessment that

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[20] Deneen Melbourne Centre for the Study of Higher Education: Teaching and Learning Short Guide Series 1.
[21] Rakes 2008 *Journal of Interactive Online Learning* 1.
[22] Maharg 1999 *International Journal of the Legal Profession* 218.
[23] Gupta (2007-12-12) *IEEE Microwave Magazine* 47.
[24] Maharg 1999 *International Journal of the Legal Profession* 220.1

does not clearly identify a specific issue may lead to confusion and lead the student to applying irrelevant information.

According to Rakes open book assessments enhance learning because they accentuate higher order thinking skills.[25] The rationale behind this statement stems from the notion that open book assessments do not involve memorization and students are pushed towards adopting higher level thinking skills to answer the questions.[26] Consequently, to resolve some of the disadvantages of open book assessments, an examiner may also play a role in guiding their students accordingly. For example, an examiner may place a warning against copying and pasting information and this may act as a deterrent to stop students from copying and pasting. The examiner may also specify the scope of the resources that the students use and limit them to books and journal articles only to ensure that in the learning and answering process, students rely on reliable sources for information. Additionally, the examiner may go as far as finding methods to teach students how to apply their study material and not simply regurgitate them without applying them prior to the assessment. By doing these things, the examiner also aids the development of higher order thinking within their students as they will now have a clarity regarding what is expected from them.

The TAU project sought to determine how students' approach and answer open book assessments and to determine the views of academics. Discussions with students revealed that they thought that assessments will now be much easier because they will have access to all their resources when answering questions. Most students indicated that the merely mimicked what they did in a closed book assessment in the open-book online assessment. Academics raised concerns around an increase in academic dishonesty and plagiarism. Statistics from the legal services department at the university showed a marked increase in the number of disciplinary matters that were being reported for academic dishonesty and plagiarism. Some academics reported receiving answers that was nothing more than a copy and paste of the textbook or notes the academic compiled for the students.

A review of the nature of questions used during open-book online assessments was that many questions were not problem-based assessments. Interviews with academics revealed that there was enormous pressure on writing extensive notes for students who were from rural areas and who could not afford to purchase the prescribed textbooks. Academics tended to merely take what they did in a face-to-face classroom setting and simulate that online. In modules where true problem-based assessment questions were used students tended to do worse than when they completed assessments in a controlled environment. In these modules the most common complaint from academics were that students tend to provide a 'copy and paste' of the notes or textbook without offering a solution to the problem that the question required. Additional research must be done to review course material to determine to what

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[25] Rakes 2008 *Journal of Interactive Online Learning* 1.
[26] Parker *et al* Paper 029 presented at the Proceedings 2021 Canadian Engineering Education Association Conference 1.

extent academics prepared students for open-book problem-based assessments during online lectures. 6 two-hour "teaching and learning hubs" on problem-based learning were facilitated with academics within the faculty.

<u>Appraisal and next steps</u>

Open book assessment that are problem based do achieve the aim assessing higher order thinking. Wood argues that problem-based learning can be considered as a tool for increasing knowledge and understanding.[27] More can be done to ensure that open book assessments that are problem-based assessments become effective tools to assess higher order thinking in students. To ensure that open book assessments are being dealt with in the correct manner, I must still create a guide for staff and students on problem-based learning and assessment. This could unfortunately not be completed prior to the end of TAU and the project will continue despite TAU having ended for my group. The idea of having the guideline updated yearly allows the faculty to progressively develop by ensuring that they are resolving the various problems or loopholes that were available in the previous guideline.

Some institutions like the University of Dublin, have a yearly Handbook on Open-book assessments. The Handbook aims to support all the teaching and sets out key components that all staff need to consider in design of open-book assessments.[28] Going forward the faculty of law will design its own guide on designing and drafting open book problem-based assessments for academics and a guide for law students on how to approach and prepare for open-book problem-based assessments. Furthermore, it may also set out what higher order thinking questions ought to entail using verbs like compare and contrast or evaluate or interpret as opposed to list or identify questions which align themselves towards lower order thinking.[29]

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[27] Wood "ABC of learning and teaching in medicine" 326 2003 *Clinical Review* 328.

[28] Johnston and Rooney "Open-Book assessment: A handbook for Academics" The University of Dublin (March 2021) https://www.tcd.ie/CAPSL/Assets/pdf/gateway/OBA_HandbookStaff_FromTARA.pdf (accessed 2022-03-10). See also Johnston and Rooney "Open-Book assessment: A handbook for Academics" The University of Dublin (2020) https://www.tcd.ie/CAPSL/Assets/pdf/gateway/Handbook_Academics.pdf (accessed 2022-03-10).

[29] Charles Sturt University "(Re)Writing Better Exam Questions" 2020 https://cdn.csu.edu.au/__data/assets/pdf_file/0004/3486046/ReWriting-Better-Exam-Questions.pdf (accessed 2022-03-12).

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