

Thursday Session 2a

Damien Raftery and P.J. Wall	Online quizzes and generative AI: impacts on the processes of learning and assessment
Miguel Nicolau, Michael O'Neill, Allen Higgins, Jenny Munnelly and James McDermott	On the Advantages of Computer-Based Examinations
Olumide Popoola and Heather McClean	Developing Academic Integrity Training for GTAs: Near Peers and Natural Advocates
Jonny Johnston, Ana Elena Schalk and Jade Elizabeth Concannon	Supporting assessment integrity in the context of a low direct teaching encounter online-delivered module

Online quizzes and generative AI: impacts on the processes of learning and assessment.

Damien Raftery (South East Technological University) and P.J. Wall (South East Technological University).

Abstract. As generative AI (artificial intelligence) technologies, such as ChatGPT, become increasingly available, traditional online assessments must be re-evaluated to maintain their educational value. Open-book online quizzes have long been an effective tool for engaging students, effectively supporting learning (Angus and Watson, 2009), and reinforcing fundamental knowledge and skills (Lyng and Kelleher, 2019). However, the ease of using AI to complete online quizzes may undermine their intended purpose, with ChatGPT's accuracy improving from the modest performance on multiple-choice questions reported last February by Newton (2023).

Recent informal discussions about generative AI with my students indicate there is a small but growing awareness with little admitted use. Malmström, Stöhr, and Ou (2023), in a survey of Swedish university students undertaken mostly in April 2023, found that almost all are familiar with ChatGPT with more than a third using it regularly. Thus, for the current academic year 2023 – 2024, it is likely that most of my students will (be able to) use generative AI tools.

This presentation will report the initial findings of using ChatGPT to answer twelve online quizzes used for continuous assessment in two first-year quantitative techniques modules on business programmes in an Irish technological university. This investigation was undertaken in May 2023 with ChatGPT-3.5, ChatGPT-4 and ChatGPT with Wolfram plugin (as ChatGPT can be poor at arithmetic, the Wolfram plugin significantly improves the performance of calculations). The details will be presented, but the overall conclusion is that the online quizzes on these modules can be quickly completed with the assistance of ChatGPT with a high level of success.

The implications of this for using online quizzes as an assessment strategy will be discussed; potential assessment redesigns will be outlined, including how to thoughtfully integrate generative AI into the learning and assessment process in an ethical and constructive manner. Access to generative AI does not mean students will no longer need to be able to solve problems, develop mathematical and statistical literacy, and do calculations. Although generative AI provides a challenge to traditional online quizzes, it also has the potential to aid student comprehension and learning, and the skills of prompt engineering are likely to become increasingly relevant and useful.

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Keywords: Generative AI, ChatGPT, Online quizzes, Retrieval practice

On the Advantages of Computer-Based Examinations.

Miguel Nicolau (University College Dublin), Michael O'Neill (University College Dublin), Allen Higgins (University College Dublin), Jenny Munnelly (Technological University Dublin) and James McDermott (University of Galway).

Abstract. The arrival and free availability of AI systems, particularly Large-Language Models (LLMs) such as ChatGPT, has caused panic in most third level education institutions. In some cases, it has forced those institutions to rethink computer-based assessment [1], whereas in more extreme cases, it has forced a resurgence of pen-and-paper examinations [2].

Yet there are very clear advantages to computer-based assessment over handwritten examinations [3]. We present a framework put in place for a cohort in excess of 350 students in University College Dublin (UCD), regarding their end-of-delivery examination. The examination consists of a quiz in Brightspace, the Virtual Learning Environment (VLE) used in UCD. Brightspace and other widely used VLEs (Blackboard, Moodle, Canvas, etc) all provide support for online examinations, including access to very detailed logs, which allow for extremely rich real-time and post-delivery analytics.

These tools and data provide clear benefits for student assessment, particularly for in-classroom, computer-based examinations:

- Creation of unique examinations for each student (through scrambling of question order, question options, and/or providing each student with unique variations of questions);
- Inter-student plagiarism detection (easily detectable correlated answers);
- Better examination design (easy analysis of difficulty/discrimination of questions, better examination timing management, etc);
- Difficulty and grade prediction (using question banks from past examinations, the difficulty of examinations can be fine-tuned for specific cohorts);
- Consistency of grading (most quiz-based questions can be automatically graded, and even long answer questions are easier to read/grade, reducing errors and biases from the grading process);
- Comfort for students (most students are more comfortable typing than handwriting [4]);
- Accessibility and Universal Design (computer-based quizzes provide many advantages for students with special needs, such as screen-reading software, speech-to-text tools, etc);
- Easier support for open-book / open-web examinations;

- Potential for provision of detailed feedback to students (potentially automatable).

There are undoubtedly some challenges that need careful consideration as well:

- Careful invigilation is required to control access forbidden material (particularly if students are using their own computers);

- Room requirements (ample bandwidth, power plugs, etc);

- Dealing with technical difficulties (non-starting/crashing/non-responsive computers, etc).

Despite the challenges, the deployment of such computer-based examinations has been a repeated success with the UCD module, for both students and instructors. We will present detailed analytics, and discuss the future challenges that tools like LLMs pose (and how to address them).

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Keywords: assessment design, academic integrity, computer-based examinations, LLMs, ChatGPT, learning technology

Developing Academic Integrity Training for GTAs: Near Peers and Natural Advocates.

Olumide Popoola (Queen Mary University of London) and Heather McClean (Queen Mary University of London).

Abstract. Increasingly, teaching at university is being conducted by Graduate Teaching Assistants (GTAs). Their role involves not only planning and teaching but also assessing, grading and giving feedback on submissions. GTAs typically get very little training in assessment processes: while they may receive guidance on using assessment criteria and providing feedback, they rarely receive training on academic integrity. Any knowledge they possess about this area is likely to come from their experience as learners (i.e., doctoral students) students rather than as instructors. Compounding this is the fact that GTAs are also far less likely to have access to Continuous Professional Development opportunities or access to up-to-date developments in Scholarship of Teaching and Learning (SoTL) e.g., educational developments regarding academic integrity and Artificial Intelligence.

This lack of training and development means that GTAs may be particularly vulnerable to student academic misconduct. Research in the US suggests that cheating is 32% more likely in classes taught by GTAs (Seals et al., 2014).

This presentation will describe the results of qualitative research undertaken at a research-intensive UK university to understand GTA perceptions of academic integrity. A mixed-mode approach was used, employing questionnaires, focus groups and semi-structured interviews with 23 GTAs.

Key findings exposed worrying gaps in knowledge regarding a wide range of common academic misconduct, such as collusion, self-plagiarism, and citation/reference list padding - despite most GTAs expressing a high level of confidence in their knowledge of general academic integrity rules.

At the same time, GTAs were aware of their lack of knowledge about the university's academic integrity policies and processes, often learning about them only after they had encountered academic misconduct. This reactive approach meant that GTAs, while understanding the social/psychological reasons behind cheating, were more focused on describing academic misconduct than promoting academic integrity. This was in stark contrast to GTA perceptions of research integrity, which was very much associated with values and culture rather than rules and regulations.

The presentation will report on how the findings have been used to develop an innovative GTA training module that supports GTAs to construct a professional identity as academic champions whilst developing their knowledge of institutional governance of academic integrity; it will argue that, as near-peers and research integrity specialists, GTAs have a unique status within the university which they can utilise to promote and enhance institutional academic integrity from a grassroots level.

References:

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Keywords: Graduate Teaching Assistants, training, knowledge gaps, professional development, academic integrity, research integrity

Supporting assessment integrity in the context of a low direct teaching encounter online-delivered module.

Jonny Johnston (Trinity College Dublin, the University of Dublin), Ana Elena Schalk (Trinity College Dublin) and Jade Elizabeth Concannon (Trinity College Dublin).

Abstract. Academic Practice, Trinity College Dublin worked collaboratively with Ireland's National Forum for Teaching & Learning to develop a fully-online 5 ECTS structured educational development module suitable for the needs of postgraduate researchers with roles in teaching and supporting learning (GTAs), first delivered at Trinity in 2018. Teaching encounters in the module focus on educational practice and theory: these have been traditionally staged and supported through pre-recorded lecture materials, resources, participant engagement in asynchronous online discussion boards, and through participation in interactive tutorial-style webinars. Enrolment in the module is high; the module is seen as highly successful and 'graduates' may use the 5 ECTS from the module to contribute to the award of Trinity's structured PhD.

It has become increasingly clear that the delivery mechanisms and structure of the 'Teaching & Supporting Learning for Graduate Teaching Assistants' module are no longer cutting edge in the context of contemporary approaches to online teaching and learning. Furthermore, recent developments in digital tools and technologies (e.g. the advent of generative academic intelligence) pose significant challenges to assuring the integrity of module assessment and to promoting peer-to-peer engagement and supporting rich conversations enabling participants to connect to the Scholarship of Teaching & Learning.

Our conference presentation seeks to document and disseminate potential solutions to these challenges subsequent to the re-design & redevelopment of teaching and assessment approaches in the module undertaken in spring/summer 2023.

In this presentation we outline key challenges faced in relation to: academic and administrative workload in the context of a small programme team and large student enrolments; evidence-derived approaches to supporting assessment integrity in the context of a relatively 'hands-off' online-delivered module; promoting student interactivity to develop a GTA Community of Practice (Lave & Wenger, 1991); and acknowledging existing and emerging challenges to academic and assessment integrity through teaching and assessment approaches.

Our aim through this presentation is to highlight specific solutions and strategies likely to be use to academics, educational developers, and other colleagues with roles in teaching and supporting learning to develop and revise teaching and assessment strategies to de-risk and accommodate recent challenges to 'good' academic practice.

Keywords: educational development, graduate teaching assistants, assessment integrity, academic integrity, community of practice

Thursday Session 2b

Gwen Moore and Maria Varvarigou	Authentic Assessment and Meaning-Making in Teacher Education: Insights from Practice in Music Education
Loretta Goff	Academic Integrity Education for Students and Staff: An Institutional Approach to Building a Culture of Integrity
Mary Heneghan and Eva Campion	Using Lego to instil academic integrity in undergraduate laboratory report writing.

Authentic Assessment and Meaning-Making in Teacher Education: Insights from Practice in Music Education.

Gwen Moore (Mary Immaculate College) and Maria Varvarigou (Mary Immaculate College).

Abstract. Contested approaches and philosophies in the discipline of music (Elliott, 1995) and the product-process continuum within creative arts programmes can give rise to learner disaffection (Kleiman 2017). In the context of general teacher education, students may have varied levels of experience of engagement in discipline-specific practices of music-making, potentially compounding assumptions and values in relation to creativity and the purpose and role of music in education. In this presentation, we share insights from authentic assessment design and innovative approaches to real-world practices in group music-making and learning. We argue that discipline-specific learning and assessment strategies are critical to meaning-making processes for learners in their development as musicians and as student teachers. In particular, we will share strategies for the collaborative design and implementation of authentic assessment within music education modules that promote innovative approaches underpinning principles of assessment as learning (O'Neill, 2017). Consequently, we share insights and vignettes from practice in relation to possibilities for 'meaningful' authentic assessment (McArthur, 2021) in the context of generalist teacher education. We will conclude by considering multiple perspectives on authentic assessment in arts education from scholarly literature that can inform future practice in the arts/music in higher education.

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Keywords: Authentic Assessment, Creativity, Music Education, Assessment as learning

Academic Integrity Education for Students and Staff: An Institutional Approach to Building a Culture of Integrity.

Loretta Goff (University College Cork).

Abstract. The aim of University College Cork's institutional approach to academic integrity is to create an environment that fosters it, focusing in the first instance on a developmental educational approach (Bertram Gallant & Stephens, 2020) that supports student success rather than solely punitive measures. To achieve this environment, consistent modelling of academic integrity, underpinned by joined-up communications, is required at all levels of the institution, from our leadership to our academic and professional service staff, and our students. In this paper, the results of a research collaboration between the student-facing Skills Centre and the staff-facing Centre for the Integration of Research, Teaching and Learning that laid the groundwork for this developmental approach will be shared. The results of this project include the creation of resources, training opportunities, and events for both staff and students that clearly demarcate academic integrity and academic misconduct in order to focus on skill development, facilitate engaged learning, and encourage student and staff understanding, partnership and shared responsibility. The teaching and learning approach to academic integrity (Eaton, 2020; Morris, 2016) that informed this project will be illustrated through specific examples of project work that highlight the importance of a shared understanding across student and staff populations and demonstrate how resources and trainings in were developed in support of this, including an evaluation of the impact of these measures. In addition, the work carried out in this project will be situated within the national context, demonstrating alignment with objectives laid out by Ireland's National Academic Integrity Network (2021). The practice examples of academic integrity education shared in this paper, along with the impacts of these, will be particularly beneficial for conference attendees who may be interested in implementing some of these approaches themselves.

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Keywords: academic integrity, developmental approach, professional development, education, shared responsibility

Using Lego to instill academic integrity in undergraduate laboratory report writing.

Mary Heneghan (ATU Sligo) and Eva Campion (ATU Sligo).

Abstract. Report writing in a laboratory setting is a fundamental skill required by all science undergraduate and postgraduate students. While this skill is essential and transferable to the workplace, it is extremely challenging for students to master. Often, report writing is perceived as complicated; students do not know how to approach the task, get frustrated, and this frequently leads to decreased academic integrity. Having taught L6-L9 laboratory sessions for over 10 years, we have observed more plagiarism issues in laboratory report assessments than any other assignment. Strategies to increase academic integrity often focus on policies of enforcement i.e., outlining penalties associated with academic misconduct. Our objective is to develop strategies to enable student success in report writing, and concurrently embed academic integrity in a positive and constructive manner.

This study describes the implementation of a report writing workshop with L6 undergraduate students studying a 10-credit laboratory module. Our approach focused on scaffolding, feed forward and fading to empower students to master this task. A second-year cohort was selected for the study as we felt it was important to develop these skills early. Prior to the workshop, students completed a laboratory experiment and subsequently submitted a report. The experiment and its associated report were intentionally designed to be relatively uncomplicated and straight forward to document. A tutorial, which included guidance on plagiarism, was delivered to the students before submitting their reports. Additionally, a written guide to report writing, a Harvard referencing guide, and a rubric mark scheme, were provided to support the students in this assessment. Following submission, a comprehensive workshop was conducted where students initially self-assessed their own report and a range of sample reports that were provided to them. During the workshop the concept of plagiarism was taught in an innovative way using Lego. The grading process for the sample reports provided was explained and discussed in detail. Following this process students then reassessed their own reports. Individual grades as assessed by academic staff and written feedback were also provided during the workshop. Students were given the opportunity to reflect on their learning and resubmit the same report for academic assessment.

Student feedback on the workshop was extremely positive “This class was highly informative”; “Practical examples of real reports made it easy to relate to your own work”; “This course should be offered to first and second years”; Using Lego helped visualise plagiarism”. Notably, the class confidence level in report writing rose by 23% after completion of the workshop. In addition, the impact on academic performance was dramatic. The class average GPA increased by 47% upon resubmission of the report, while the class average Turnitin similarity score decreased by 20%. Furthermore, when students were then challenged with a more complicated experiment and associated report, the class average GPA increased by 30% as compared to their original submission, while the class average Turnitin similarity score decreased by 11%. Following the success of this workshop we intend to expand on this research and implement this report writing strategy across other programs.

Keywords: Academic Integrity, Plagiarism, Scientific report writing, Lego

Thursday Session 2c

Ciara Egan	Open Scholarship in teaching and research: Opportunities and challenges for a more equitable academia
Karen Matvienko-Sikar, Aoife Coffey, Darren Dahly, Samantha Dockray, Catherine Houghton, Brendan Palmer and Elaine Toomey	The Principles and Practices of Open Research (PaPOR TRaIL) course: An open educational resource for open research:
Maura Hiney	When heroes fall: How can we prevent bias and dishonesty in research publications?
Hardy Schwamm and Aisling Coyne	Predatory Publishing – The dark side of Open Access?

Open Scholarship in teaching and research: Opportunities and challenges for a more equitable academia.

Ciara Egan (University of Galway).

Abstract. Open Scholarship has quickly become a major focus in research and funding policy both nationally and internationally, with the aim that it may help research integrity, and combat reproducibility issues across various fields. Within the open scholarship community there is a consensus that education centred on reproducibility and open methods at undergraduate level will be beneficial for both the research community and the learners. A simultaneous discussion is happening around the inequalities that are perpetuated within academia. This talk will outline some of the issues currently facing academics, and how these impact on both research and teaching. It will then look at the ways in which a cultural shift towards open science/scholarship could be used to foster better research (cf. Elsherif et al., 2022) and teaching environments (Pownall et al., 2023). Consideration will also be given to the challenges that hinder such progress, including academic incentive structures, the possibility that current inequalities will persist in a more open system, and the potential for the work of opening science to fall on already marginalised academics.

Keywords: Open Scholarship, Open Science, Research Integrity, Equality and Inclusion

The Principles and Practices of Open Research (PaPOR TRaIL) course: An open educational resource for open research.

Karen Matvienko-Sikar (University College Cork), Aoife Coffey (University College Cork), Darren Dahly (Health Research Board Clinical Research Facility Cork, University College Cork), Samantha Dockray (University College Cork), Catherine Houghton (University of Galway), Brendan Palmer (Health Research Board Clinical Research Facility Cork, University College Cork) and Elaine Toomey (University of Galway).

Abstract. Background: Open research involves actions at all stages of the research cycle to make research processes and outputs more transparent and accessible. Developing educational resources for students is essential to enhance awareness and early engagement with open research practices, and promote a culture of research integrity. A number of initiatives exist for researchers at PhD, post-doctoral and more senior levels to support teaching and learning of open research. However there is a critical need for development of educational resources for research students at earlier career stages in their research journeys, namely undergraduate and postgraduate students. As such, the aim of the PaPOR TRaIL project was to develop an open educational resource (OER) on open research for undergraduate and postgraduate students, the PaPOR TRaIL course.

Methods: To understand student and research supervisor attitudes, knowledge, and experiences of open research, as well as needs and preferences for open research educational content and delivery, we conducted interviews and surveys. Students were recruited from University College Cork and supervisors were recruited across institutions in Ireland. Findings from interviews and surveys were integrated with international guidance on best practice in open research to develop the PaPOR TRaIL course. The preliminary course was user-tested by students and supervisors, who provided feedback to enable refinement of the course prior to its launch in December 2019.

Findings: Inconsistencies in open research knowledge and attitudes were observed in interviews with 16 students and 14 supervisors. Surveys completed by 74 students and 76 supervisors, indicated perceptions of importance of open research and preferences for course content (e.g., reproducibility, open data) and delivery (e.g., videos, templates). Following this, the PaPOR TRaIL course was developed as an OER to include a stand-alone introductory module, and six optional follow-on skills-based modules on specific open research practices. The six practice-based modules cover: Research Integrity; Pre-registration; Research Data Management; Reproducible Practices; Open Reporting; and Knowledge Dissemination. Following user-testing by five students and three research supervisors, the course was refined and finalised. Since its launch in December 2019, nearly 500 students from 15 countries have enrolled in the course.

Discussion: The PaPOR TRaIL course is an evidence-based OER that provides a comprehensive foundation in open research theory & practice. PaPOR TRaIL promotes development of core research values and equips students with transferable competencies and skills, including how to conduct, consume, and use research in a trustworthy and ethical manner. The PaPOR TRaIL course promotes openly accessible and transparent teaching and research, which have important benefits for individuals, society, and research and academia.

<https://open.ucc.ie/browse/all/cpd/courses/papor-trail-principles-and-practices-of-open-research-003cpd>

Keywords: Open Research, Open Educational Resource, Research Integrity, Pre-registration, Research Data Management, Reproducible Practices, Open Reporting, Knowledge Dissemination

When heroes fall: How can we prevent bias and dishonesty in research publications?

Maura Hiney (Institute for Discovery, University College Dublin).

Abstract. What makes research valuable to society? The intellectual contribution of the research community is vital to understanding how our physical, social, political and cultural environment works and what will enhance it. It leads to the development of ideas, policies and innovations that impact and improve the quality of our daily lives. Therefore, the activities of researchers and the outputs of their endeavours touch every part of society, so it is critical that society can trust those outputs to be true and unbiased. That society includes fellow researchers, who rely on the truthfulness of the research record, the foundation upon which advances are built, to make progress in their field and add to the store of knowledge worldwide. Bias and dishonesty in research publications turn the research record into a house of cards.

Therefore, addressing bias and dishonesty in research reporting is vital. Through the lens of an example of a personal fallen hero, this presentation will look at some evidence for the level of bias and dishonesty in publications and ask what can be done to prevent this. What is the evidence for better research through methods such as pre-registration, registered reports, pre-submission review, open peer review and open data? Can the widespread uptake and implementation of these methods improve the quality, validity and credibility of reporting in the research literature, and how might this change the face of scholarly publication in the future?

Keywords: Dishonesty, Scholarly publication, Pre-registration, Registered reports, Pre-submission review, Open peer review

Predatory Publishing – The dark side of Open Access?

Hardy Schwamm (University of Galway) and Aisling Coyne (TU Dublin).

Abstract. Predatory journals are regarded as a global threat to science. These journals are characterised by “false or misleading information, deviation from best editorial and publication practices, a lack of transparency”. Their threat to research integrity is that they claim to perform peer review and editorial procedures but in reality, any article will be published without quality checks if payments are made. Articles in such journals have been found in systematic reviews and were referenced by policy documents.

Involved are not only authors from low- and middle-income countries but also high- and upper-middle-income countries such as Ireland. Motivations to publish in these journals are, from being unaware of the predatory nature of the journal to intentionally ignoring research integrity in order to publish.

There is another effect of predatory journals on the Open Access movement. Predatory behaviour is sometimes described as the “dark side” of Open Access. It is true that predatory publishers work with an Author Pays model in the same way that many Open Access journals use an Article Processing Charge (APC) as their business model. This leaves many authors confused and anxious about publishing Open Access when there might be a risk to their integrity and reputation.

This paper will look at two aspects: How big is the threat of predatory publishers on research integrity (spoiler alert: in some disciplines significant!) and what can be done to minimise the impact of fraudulent actors in Open Access publishing? We will also look at how the Open Access movement can act to uphold principles of integrity, transparency and accessibility when it is faced the unintended consequences of bad actors in the OA ecosystem.

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Keywords: predatory publishing, open access, scholarly communications, research integrity