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UNIVERSITY OF
ABERDEEN

**14TH ANNUAL ACADEMIC DEVELOPMENT
SYMPOSIUM | THURSDAY 27 APRIL 2023
FROM SURVIVING TO THRIVING:
BUILDING RESILIENT LEARNERS
THROUGH ASSESSMENT & FEEDBACK
POSTERS**

INTRODUCTION

This poster e-booklet showcases pedagogical research and teaching practice from across the University. The posters align with the current, QAA (Scotland) Enhancement Theme, **Resilient Learning Communities**, and illustrate ways in which we are addressing the Theme.

The best judged poster on the day, as voted for by symposium delegates, will be awarded a prize. There will also be a highly commended poster prize awarded. Both Awards will be presented at the end of the symposium.

While judging the posters, you are encouraged to use the following criteria:

- Creativity, visual appeal and flair of the poster.
- Legibility, is the poster information clearly communicated?
- Balance of text and diagrammatic information.
- Succinctness of the information presented.
- Innovative teaching and learning or research content.

VOTING INSTRUCTIONS

Using the guidelines above, please cast your **ONE** vote by scanning the QR code below or by following this link: <https://forms.office.com/e/75iR6nGa66>

Voting closes on **THURSDAY 27 APRIL AT 15:00**. Professor Ruth Taylor, Vice-Principal (Education) will present the prizes for the 'best judged poster' and 'highly commended poster' at 15:40-16:00.

YOUR VOTE WILL BE ANONYMOUS.



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Enhancing Assessment and Feedback Practices: The Student Wishlist



Joanna Wilson-Scott, Joy Perkins, Mary Pryor, and Sara Preston (Centre for Academic Development), Mailie Besson and Samu Turi (TESTA student interns), Kirsty Kiezebrink (Dean for Educational Innovation), Stuart Durkin (Director of Education for the School of Social Science), and Bill Harrison (Director of Education for the School of Natural and Computing Sciences)

Background

As part of the University of Aberdeen's 'Transforming the Experience of Students Through Assessment' (TESTA) pilot project, focus groups were run with third- and final-year students in two academic schools, to ascertain their perceptions of the feedback and assessment practices they encounter as part of their degree programme.

Aim

The aim of the focus groups was to gather qualitative data from students to use alongside student survey data and staff reflections of current assessment and feedback practices. This approach is designed to investigate assessment and feedback patterns across degree programmes, to identify how these can enhance learning.

Focus Groups

After obtaining ethical approval from the Committee for Research Ethics and Governance in Arts, Social Sciences, and Business at the University of Aberdeen, we conducted focus groups with **22** undergraduate students from the following two academic schools:

13 students from the School of Social Science **9** students from the School of Natural and Computing Sciences

Of these, **13** were female and **9** were male. In total, **11** were third-year and **11** were final-year students.

In order to elicit student experiences of **assessment** and **feedback** across the programme, we asked participants the following two questions at the end of each focus group:

If you could improve **One thing about current assessment / feedback practices at the University of Aberdeen, what would it be?**

Findings

There were: **17** suggestions for assessment enhancements

Areas of potential **assessment** enhancement include:

- More formative assessments
- Staggered deadlines
- Varied assessments
- Continuous assessment
- Practical assessments
- Clearer expectations
- Inclusion of a revision week

17 suggestions for feedback enhancements

Areas of potential **feedback** enhancement include:

- Oral feedback
- Specific and detailed feedback
- Exam feedback
- Class feedback
- Peer feedback
- Timely feedback
- Standardised feedback/marking

The following sample quotations illustrate some of the main findings.

An interest in **specific and detailed feedback**:

“If they just say it is wrong, that is not going to help you. If it is good, why is it good? If it is bad, why is it bad?”

“I'd like to see more in depth feedback that corresponds with the weighting.”

An interest in **more varied assessments**:

“There's so many different types of personalities and even learning disabilities, stuff like that. [...] Maybe we would all benefit from having different types of assessment that maybe draw also upon different types of careers.”

“I'd like to see more in depth feedback that corresponds with the weighting.”

An interest in **staggered deadlines** to avoid pockets of overassessment:

“Collaboration between courses to stagger deadlines so that we don't get bombarded with three in a week.”

An interest in receiving **feedback on exams**:

“Once we turn in our exam scripts, we never see them again.”

Next Steps

We will continue the collaborative TESTA process and offer academic disciplines opportunities to:

- Exchange interdisciplinary practice to disseminate innovative and varied assessments.
- Offer CPD opportunities for staff to explore various feedback methods (e.g., audio, video, oral, written, peer, class, rubric).
- Discuss to what extent formative assessments are currently used across degree programmes.



The House Cup: Fostering engagement with qualitative grading for more meaningful assessment and feedback in Mathematics.

Dr Jean-Baptiste Gramain - jbgramain@abdn.ac.uk
School of Natural and Computing Sciences



Context and Approach

Traditionally, mathematics assessments are graded numerically. This tends to favour the correctness of answers over their quality, and leads to poorly understood or non-constructive feedback. By using instead the CGS grade descriptors to grade our students qualitatively, we can avoid grade inflation, but also deliver feedback which focusses on the quality of answers and is therefore more actionable.

Question	Mark	Grade
Exercise 1 (1 question)	10	A
Exercise 2 (1 question)	10	B
Exercise 3 (1 question)	10	C
Exercise 4 (1 question)	10	D
Exercise 5 (1 question)	10	E

Figure 1: Mapping solutions to grade descriptors.

Familiarizing students with qualitative grading

A simple mapping exercise can be used. Students are presented with five solutions to a given exercise and suggested grade bands. This leads to a discussion of the grade descriptors and ensures students are engaged from the beginning with qualitative grading.



Figure 2: The sorting bag.

The House Cup – In a nutshell

- At the beginning of the course, students are asked to sit in groups of 4-5 and to choose a (mathematical) name for their house.
- You can let your students choose their fellow house members or use a sorting hat.
- Throughout the course, houses have to prepare and present solutions to chosen exercises (these can be allocated randomly, using a sorting bag!).
- Each solution presented is then discussed and graded qualitatively.
- Earning points for the quality of their solutions, the best house is eventually awarded the House Cup.
- The House Cup facilitates **group work** (an essential skill rarely developed in maths courses), fosters **friendly competition**, and stimulates the **engagement of students** with the course material in a fun and motivating way.

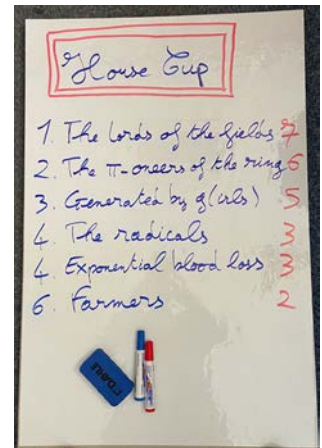


Figure 4: The weekly scoreboard.



Figure 3: Some student feedback.

Useful tips and lessons

- Use formative assessments.** Give your students the opportunity to submit their solutions to selected tutorial exercises, and mark them quantitatively.
- Use peer-assessment.** When a house presents a solution, get the other houses to discuss the grade it deserves. This will allow students to reflect on the grade descriptors and what makes a good answer (clarity, completeness, concision ...).
- Keep it fun!**
 - Display a **weekly scoreboard**.
 - Distribute **bonus points** for various achievements.
 - Allow houses complete freedom when they present.
 - Organise an **award ceremony**, presenting the winners with an actual cup.
 - Make sure all students are rewarded.

Scan me to watch



Figure 5: A great submission.

The 2022 Galois House Cup Winners:



π -onesers of the ring

Figure 6: Happy winners.

Scan me to learn more about the House Cup



Creation, Development and Enhancement of Academic Peer Review Panel to support the development and deployment of assessments

Kirsty Kiezebrink, Janet Kyle, Samuel Bennett, Dimitra Blana, Shelley Farrar, Toni Gibson, Louisa Lawrie, Maria Ntessalen, Kay Penny, Rute Vieira & Diane McCosh



Institute of Applied Health Sciences; School of Medicine, Medical Science and Nutrition



Background

Peer review in higher education is commonly associated with observation of teaching delivery with few examples of it being used to enhance the assessment design and deployment.

Many staff prior to this project relied solely on external examiners to provide review of assessments.

Few opportunities for staff to share examples of good practice

Solution:

Assessment Review Panel

Based on UK Quality Code for Higher Education Advice and Guidance – 10 items

Approach

Focus on a different item each year – adapting the speed for progression to individual coordinators starting point

Initial group selected from experienced staff, joined in subsequent years by all new scholarship staff and other volunteers

Year 1: self-selected if courses wished to submit for peer review, evaluated and refined process

Year 2 & 3: Individual summative assessment to be reviewed as and when ready (compulsory), evaluated and refined process

Year 4: All assessments for a course reviewed together rather than individually.

Outputs

- ✓ Developed (with students) a standardised template for communication assessment information.
- ✓ Developed standardised approaches to managing common practice such as word counts, submission deadlines (by date, teaching week or UoA week), feedback timing
- ✓ Developed template for providing peer review comments



Templates Here

Future Considerations

Approach to conducting peer review:

- Inviting coordinators to review meeting or only providing written feedback?

Actioning recommendations:

- Sharing report with external examiners?
- Require response to peer review report?

Evaluation of effectiveness

- How do we determine if this approach is improving the quality of assessments?

Future

Assessment is inclusive and equitable – decolonising curriculum

Students are supported and prepared for assessment – formative supporting summative

Assessment is reliable, consistent, and valid - Evaluation of assessment performance used in multiple years & between assessment performance analysis

Not (yet) included

Programmatic review. Mapping course assessment within and across programmes to review scheduling and spread assessment techniques

Completed

2016

Assessment methods and criteria aligned to learning outcomes

Assessment information is explicit and transparent.

Assessment feedback is timely, purposeful and supports learning

Assessment is reliable, consistent, fair and valid - marking guides

Assessment is inclusive and equitable - accessibility

Assessment encourages academic integrity.

Additional Benefits

Enhancing professional development (for those being reviewed and those conducting the review): Peer review provides opportunities for staff to engage in ongoing professional development by learning from the experiences and insights of their colleagues. By becoming a peer reviewer this enabled staff to be supported in engaging with the latest assessment practices, strategies, and technologies, working as part of a group to identify areas for improvement which can enhance their own professional growth.

Fostering a culture of collaboration: Peer review encouraged collaboration and collegiality among staff, creating a supportive and collaborative learning environment. By engaging in peer review, staff can share their knowledge, experiences, and perspectives, and work together to improve assessment practice, which ultimately benefits students. This needs careful management create this positive culture

The Phoenix Project: Near-peer tutors working with staff in Anatomy to help students



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By Ronan Docherty, Shazia Syeda Nusky and Dr Asha Venkatesh, Aberdeen University School of Medicine, Medical Sciences & Nutrition

Background

- COVID-19 led to an unprecedented reshaping of medical education. The recent transition to online learning further affecting their abilities to engage with and progress in medical school.
- Anatomy was one of the disciplines affected, leading to a higher number of students struggling to grasp key anatomical concepts.
- To understand the role of peer teaching in providing academic support to these students post-COVID-19, we developed the Phoenix Project.

Aims

To evaluate the effect of peer teaching on the anatomical knowledge and confidence of Year 2 medical students who had either previously failed second year or struggled with first-year anatomy.

Methods

- Twenty-eight suitable students were identified, from which 12 signed up after email correspondence.
- Eight 90-minute online teaching sessions on curricular topics were delivered online. The teaching material was developed using existing course material, including workbooks.

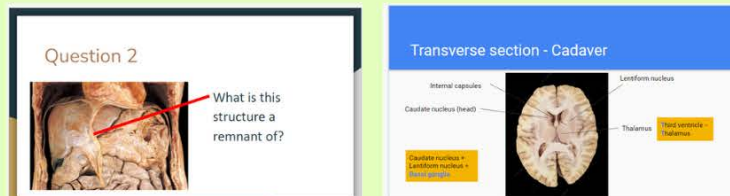


Figure 1: Example slides of the online teaching sessions delivered on Microsoft Teams.

- Each session also encompassed a mock assessment with four OSPE-style questions with immediate feedback, including a discussion of strategies to approach each question.
- Participants' anatomical knowledge and confidence were assessed with a quiz and survey at the start and end of the project.

Results

- The number of participants that attended each session ranged from 6-11 (median=9).
- Quiz scores increased from an average of 33.3% pre-project to 59.7% post-project, showing an average improvement of 26.4 percentage points.
- Average self-reported confidence in passing formal anatomy assessments, assessed using a 7-point Likert scale, increased from 4 pre-project to 6 post-project.

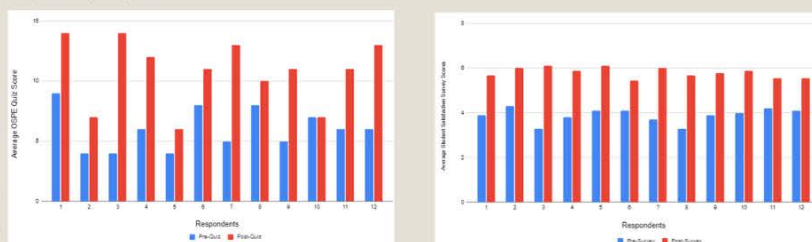


Figure 2: Histograms illustrating the average OSPE quiz results and average student satisfaction of the Phoenix Project, respectively. Qualitative data was also collected on the students experience of the Phoenix Project.

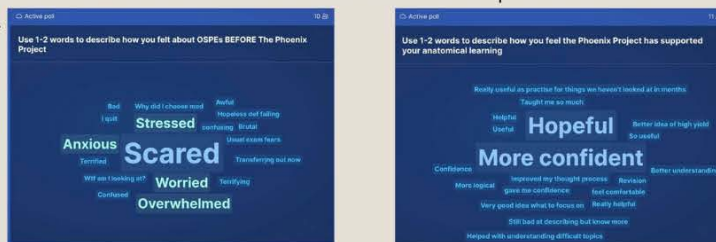


Figure 3: Qualitative feedback of the Phoenix Project by the year 2 medical student participants.

Discussion

The Phoenix project was a small experiment providing additional targeted support for students that needed it most. The value of near-peer teaching is well-established in the literature, and our experience is similar. However, limitations such as small sample size and mixed attendance call for more formal and large-scale peer-assisted teaching within the curriculum to determine its true effects.

Conclusion

- Peer tutors are a valuable resource for developing support programmes for students.
- A future full-scale roll-out of the project across the curriculum within the medical school is currently under consideration.

Disclosure: All the data from this poster has been collected and processed by the Phoenix Project team by the students involved. No secondary data was used.



Collaborating with Students to Improve and Raise Awareness of Digital Accessibility

Maija Koukkari, maija.koukkari@abdn.ac.uk, eLearning Adviser, Centre for Academic Development (CAD); Kristina Benedikova, Laura Forero, Jack Murray-Bird, eLearning Support Assistants, CAD

Our commitment to digital accessibility

Since at least 1 in 5 people in the UK have a disability and many more have a temporary disability (1), it is important that the University takes positive steps to ensure disabled students and staff are not disadvantaged or discriminated against. The [Equality Act 2010](#) and the [Public Sector Bodies \(Websites and Mobile Applications\) \(No. 2\) Accessibility Regulations 2018](#) oblige the University to ensure that any digital materials, including learning materials, can be used by as many people as possible, including those with disabilities and specific learning differences. The [University of Aberdeen Policy on Digital Accessibility](#) (2) defines expectations for staff who create, purchase and publish digital materials, and the Centre for Academic Development is responsible for providing training, guidance and support on making teaching and learning materials accessible.



The definition of disability is very wide and includes, but is not limited to the following:

- dyslexia and other Specific Learning Differences (SpLDs)
- visual impairment
- hearing impairment
- long-term illness
- mental health conditions
- physical impairment
- autism spectrum disorder (ASD), including Asperger's syndrome
- temporary disability or injury. (3)

Many people can also have hidden or undiagnosed disabilities and temporary needs (e.g. recovering from surgery). One can imagine people as being on a spectrum of ability/disability which varies over time. (4)

The challenge

Since all digital material (e.g. documents, videos, images, etc.) created and published on MyAberdeen must meet accessibility standards, the scale of the challenge is evident from the accessibility data extracted from MyAberdeen. In Spring Term 2022-23 courses on MyAberdeen alone (n=1421) there are:

25,701

(avg. 18/course)
Images without a description

17,504

(avg. 12/course)
Documents with colour contrast issues

10,172

(avg. 8/course)
PDF files that are missing a title

9,022

(avg. 6/course)
PDFs with language not set

8,715

(avg. 6/course)
Documents without headings

5,128

(avg. 3/course)
Documents with tables without headings

Following the introduction of the new regulations, digital accessibility-related communications focused especially on the importance of captioning videos to make them more accessible. Additional funding and institutional processes have been set up to ensure quality-assured captions can be provided, as a minimum for any students who rely on them. However, a significant proportion of learning material, assessment and feedback are provided in other digital formats (such as Word, PowerPoint, PDF and image files) and accessibility issues in these formats can equally be barriers to accessing education.

How are we trying to address this?

The eLearning team were inspired by a similar initiative at the [University of Southampton](#) (5) to employ current UoA students as eLearning Support Assistants (eLSAs) who are now involved in making accessibility improvements to learning materials, assessments and feedback methods, and advising academic staff about how to improve accessibility.

Between January and August 2022, the eLSAs piloted a new Course Accessibility Service, which aims to raise awareness of digital accessibility and provides support to course coordinators to improve the accessibility of digital learning materials. Considering staff workloads, the service is designed to save staff time because a lot of the work to fix existing accessibility issues could be taken on by the eLSAs, which will allow staff to focus on making any new documents they create as accessible as possible.

Working with students

We argue that employing current UoA students to work on raising awareness of digital accessibility at the University has been hugely beneficial for all parties involved, including employability skills and experience for the students involved, but also enabling staff-student collaboration on this issue. Having an accessibility audit conducted by a student can help teaching staff build resilient student learners by providing useful insights on current and future student support needs.

In the words of our current eLSAs:

We have previous experience with MyAberdeen as students, but also from the point of view an eLSA. This unique position allows us to bring together the needs of students and the expectations of academic staff.

We are a diverse group of students that come from different cultural and academic backgrounds.

We have learned about accessibility both through training and the delivery of the Digital Accessibility Service.

What is the Course Accessibility Service?

1. Accessibility audit

We create a report that summarises the main accessibility issues in the course and provide general guidance on how to fix them.

2. Meeting with the course coordinator*

We talk through the findings from the audit with the coordinator and agree on the next steps (e.g. assistance to improve accessibility of existing files, involvement from coordinators, files to be prioritised, timeline).

3. Guidance for creating accessible materials*

We can arrange a session to demonstrate use of Ally and MS Accessibility Checker to help you ensure all new course materials created are as accessible as possible.

4. Remediation*

We can fix existing accessibility issues found in the course (as agreed with the course coordinator).

*Steps are liable to vary depending on course coordinators' needs and preferences.

Evaluation and what's next?

During the pilot, the eLSAs audited over 30 courses, held meetings with 24 course coordinators, remediated over 5,500 files and achieved on average a 15% improvement in the overall course accessibility score. In September 2022, we advertised the service via multiple communication channels but have so far only received a small number of requests from staff to make use of the service. We would love to hear your thoughts about raising awareness of and improving digital accessibility.

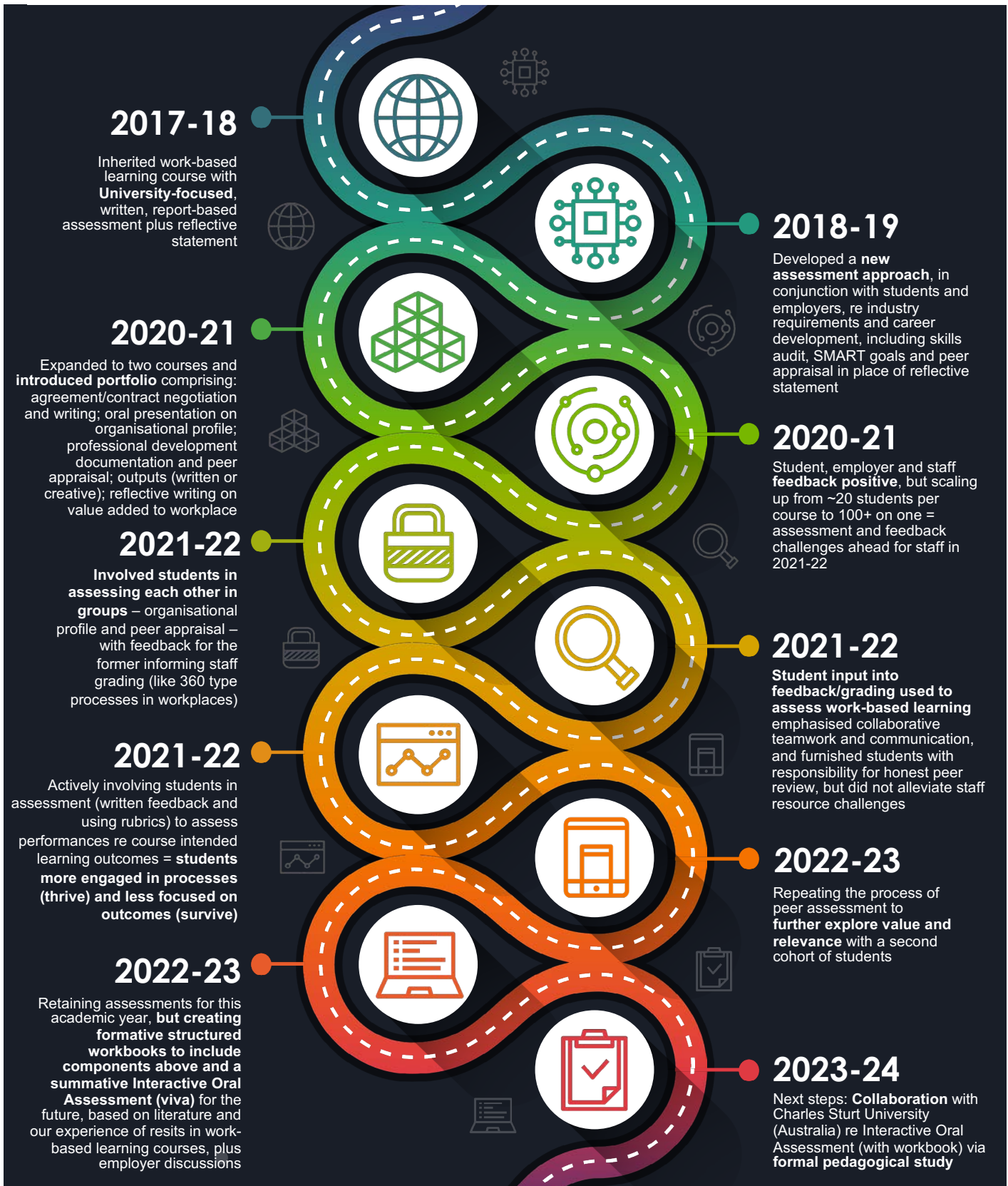
- What have you done in your course to make it more accessible to disabled students?
- What support would you like to see available to help you improve the accessibility of digital learning materials?
- How can we target this service so that it will reach students who would benefit the most?
- Would you be interested in the Course Accessibility Service? [Sign up here.](#)

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Active Assessment in Postgraduate Applied Health Sciences: Embedding University Practices that Connect with the 'World Outside'



*Heather May Morgan (E: h.morgan@abdn.ac.uk), Toni Gibson, Taniya Mondal & Emma Berry;
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Reasons Behind Contract Cheating

Investigation on students' views on academic integrity and contract cheating

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Background

- Contract cheating can take the form of online companies (essay mills) that offer to complete students' coursework in exchange of a monetary fee.
- Over a 1,000 of these services are estimated to be in current operation¹.
- Such an environment threatens academic integrity and engagement can put students at risk of blackmail.
- To develop strategies to minimize service engagement, it is important to investigate reasons why students may use this service.



Research question

What do university students perceive to be the barriers and facilitators to engaging with contract cheating services?

Method

Q Methodology Study (card sort)

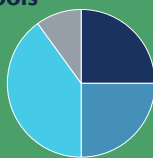
- Students placed statements (34) on a disagree to agree axis.
- Statements were reasons a student may use a contract cheating service.



Figure 1. Schematic of the task with exemplar statements.

Preliminary Results

Participants by academic schools



- Life Sciences and Medicine
- Physical Sciences
- Arts and Social Sciences
- Business

The Emergent Themes



Figure 2. Summary of the 4 themes when data was analysed using factor analysis (Conditions: principle components, varimax). N = 20 participants.

Suggested Actions

- Promotion of Student Advice & Support Team Service + Student Learning Service.
- Greater student awareness of the consequences of this misconduct and of the systems in place to detect plagiarism.
- An annual academic integrity awareness day, where the benefits of personal effort and achievement are highlighted in fun games and activities.
- Promotion of the university's study strategies and time management guides.

References

1. The Quality Assurance Agency for Higher Education. Contracting to Cheat in Higher Education. 3rd ed. QAA. 2022.

Reflections on going paperless in the Science Teaching Hub

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Background

The opening of the Science Teaching Hub led to many changes in the way we run practical classes. Here, we reflect on taking SM2001, Foundation Skills for Medical Sciences, paperless. This is a compulsory level 2 course for undergraduate medical science students consisting of 5 group workshops and 5 individual assessments, covering skills including data analysis and study design.

Summary of work

All workshops and assessments were migrated onto Lt, a cloud-based learning platform. This facilitated a range of question styles including multiple choice, short answers, tables, and labelling of images (Fig. 1). Marking was also completed in Lt. A change from previous years was that staff were asked to mark one question rather than a small number of complete scripts with the aim of increasing consistency and reducing staff time. Additionally, questions were adapted to allow for some automated marking.

Feedback from students and staff was collected via the SCEF and a short online survey respectively. Both Likert scales and free text comment questions were used.

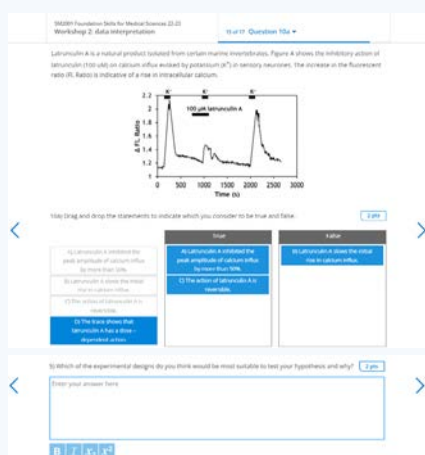


Figure 1: Screenshots from Lt workshops.

Feedback

A total of 58/179 (32.4%) students completed the SCEF with >90% rating teaching as effective (Fig. 2A). Additionally, in 5 individual Likert scores >83% of students agreed the workshops helped them develop their numerical, data interpretation, data handling and experimental design skills.

In the free text comments, there were 7 positive mentions of the use of Lt and 11 positive comments on the course structure (Fig. 2C).

A total of 9/16 (56.3%) staff responded to the survey. Overall, the feedback showed staff felt that the transition of the course to Lt was successful and marking was straightforward (Fig. 2B). However, there was no consensus on how Lt changed marking time with responses ranging from greatly decreased to greatly increased.

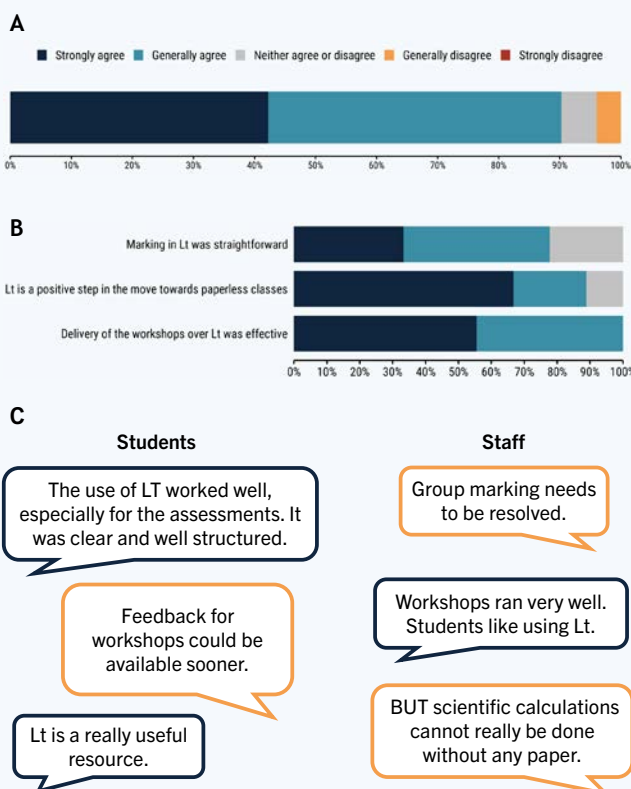


Figure 2: Likert scores from SCEF (A) and staff survey (B). Selected free text comments from students and staff.

Discussion

- Overall, feedback from both staff and students was very positive
- While there were some more negative comments on feedback this could be explained by the integration issues with Blackboard Ultra leading to delays in grades being published
- All marking was completed on time and for the majority of workshops, feedback was returned within 5 days
- There was no consensus on if the use of Lt decreased marking workload but it did improve consistency
- In future years, we will make more use of group submission for workshops to decrease marking time

Designing Educational Computer Games as a Form of Active Student Learning



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A new educational paradigm: Instead of memorisation - understanding

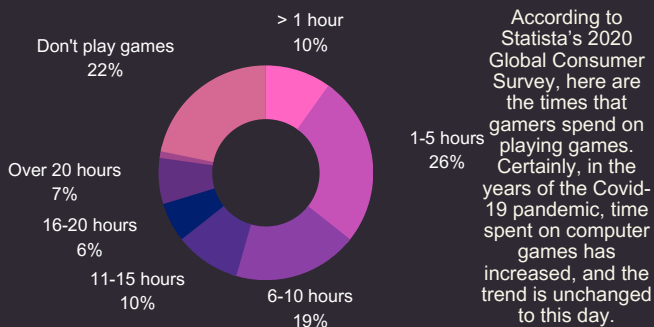
What is this understanding?



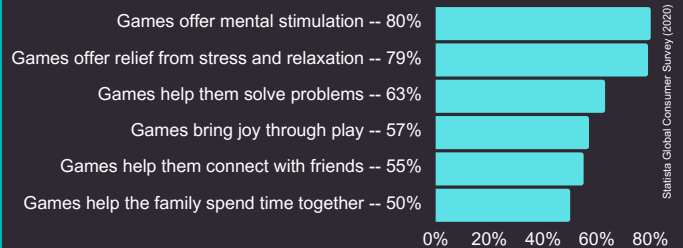
The main purpose of educational computer games: nontrivial thinking



The main task of education is not to perceive and memorise new information but to think in a way that no one else has ever thought about what everyone sees.



The Potential of Computer Games:



Knowledge and Assessment in Computer Games

Computer games provide different ways of assessing a student's level of 'advancement' in the game:

- Strength
- Dexterity
- Intelligence
- Wisdom
- Charisma
- Willpower
- Perception
- Luck
- Experience

Knowledge can be interpreted, comprehended, criticised, supplemented, accepted, rejected, used, accumulated, and never be fully understood.

Basic Game Design Documentation

Game Concept Document – a document with illustrations showing the game's primary features, roughly showing what resources will be required for game development (staff, budget, timelines etc.)

Proposal Document – a brief description of the game, without details of the development, explaining to a potential investor why the game will be profitable and its socio-economic impact.

Interface and game mechanics – a description of the functional part and how the game is world organised, what characteristics its objects have, motion patterns, role system, and physics.

Technical Design Document and UML Diagram – a description of the technical requirements for the game (memory size, use of databases, etc.); defines utilities and programming language.

Didactic Expertise Document – a description of the educational features of the game, what skills the player will develop, what areas of knowledge and topics the game will cover, what types of tasks the player will solve, and how assessment and feedback will be provided during the game.

Interdisciplinary game development team:

- ★ **Designer** – a person who designs gameplay, conceiving and designing the rules and structure of a game. This is a specialist in the field in which the educational game is being developed: biology, chemistry, physics, history, law, psychology, management, philosophy, etc.
- ★ **Programmer** – a software engineer who develops related software.
- ★ **Level designers–specialists** who create video game levels, challenges or missions.



- ★ **Artist** – a person responsible for the graphical visualisation of the game. This specialist creates a collection of drawings, renderings, and sketches of the main characters and objects in the game.
- ★ **Sound designer** – a sound engineer who is a technical professional responsible for sound effects and sound positioning.
- ★ **Tester** – a specialist who analyses games to document software defects as part of quality control.

Empowering learners and developing digital resilience with Microsoft Modern Workplace



Feedback

Teacher feedback is a key part of student learning and cognitive skills development¹. Giving and receiving peer feedback benefits learning and motivation as well². Feedback need not be in person: regular online feedback can boost student learning and motivation too³. Feedback from students⁴ and colleagues also helps educators develop their pedagogical practice.

Microsoft Modern Workplace can enable effective feedback between you, your students, and colleagues.

Digital resilience

"Digital resilience helps individuals recognise and manage the risks they come across when they socialise, explore or work online. [...] Digital resilience grows [...] through engaging with appropriate opportunities and challenges online".⁵

Microsoft Modern Workplace offers collaborative tools and a safe learning environment to help students gain the foundational skills they need for their digital resilience.



OneDrive and SharePoint

Students can create documents in their OneDrive for Business and share with group members. They can collaborate on a shared document in real time.

When ready, move or copy the document to the class's files area in Teams so everyone in the class can see it.



OneNote Class Notebook

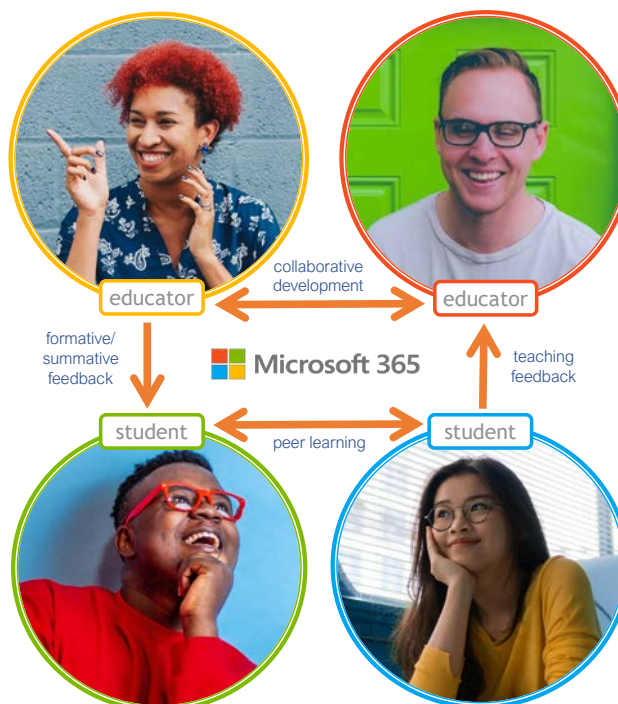
Student Notebooks: a personal workspace for every student which only the tutor and student can access.

Collaboration Space: where all class members can share ideas and content.

Content Library: all class members can view, but only tutors can add and edit content.

Encourage students to use different elements in their notes, eg files, pictures, screen clippings, audio, video and links.

Provide feedback directly on each student's notebook. You could include elements like audio recordings, links and files.



Teams

Students can:

- Deliver presentations or discuss data during a Teams meeting using PowerPoint Live or Excel Live.
- Participate in Teams meetings through features such as Breakout Rooms, Whiteboards, Polls, Reactions, Raise Hands and Spotlighting.
- Use the OneNote Class Notebook in a Class team.



Word, PowerPoint and Excel

Give and receive feedback using features such as Comments, Track Changes and Show Changes.

In Word, PowerPoint and other Microsoft 365 apps, use Dictate to add comments without typing.

In Word, enable automatic punctuation and use dictation commands such as 'Add comment'.



Other Microsoft 365 tools

Whiteboard: Collaborate on a digital canvas. You can prepare a Whiteboard in advance, then others can annotate and add to it.

Loop components: Add to your messages in Teams or Outlook for instant collaboration. These include paragraphs, lists and tables.

Forms: Create surveys, quizzes or polls. Share them, then analyse the results.

Conclusion

Microsoft Modern Workplace can facilitate feedback and peer learning. It can help students gain experience to improve their digital resilience.

If you have questions about using these Microsoft tools in your own teaching, contact the Digital Skills Team: library@abdn.ac.uk.

Digital Skills is part of Digital and Information Services. Our team is: Claire Molloy, Elaine Fitzgerald, Kim Richmond, Pauline Fraser, Tim Riley.

References

1. Wisniewski, B. et al. 2020. The Power of Feedback Revisited: A Meta-Analysis of Educational Feedback Research. *Frontiers in Psychology*, 10.
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3. Theobald, M. and Bellhäuser, H. 2022. How am I going and where to next? Elaborated online feedback improves university students' self-regulated learning and performance. *The Internet and Higher Education*, 55.
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EVALUATING PROBLEM-BASED LEARNING IN HUMAN FACTORS ENGINEERING

School of Engineering

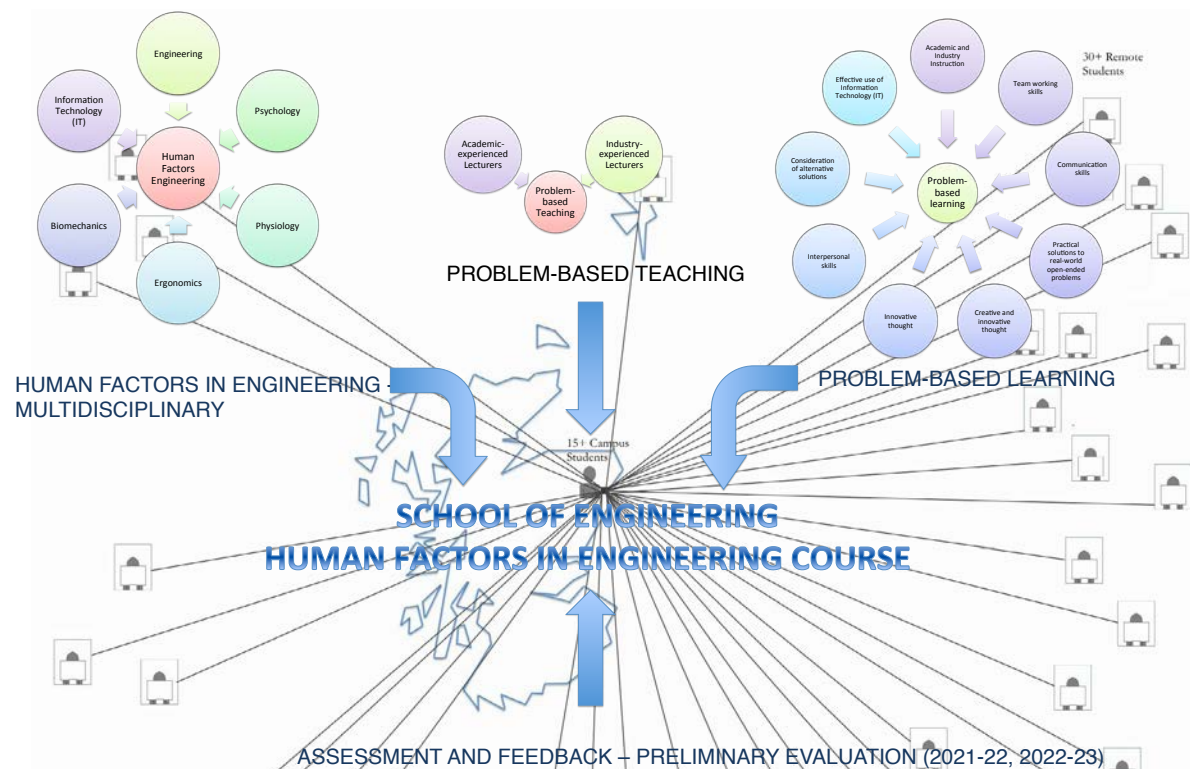
Authors: Dr Maureen Jennings, Dr Henry Tan, Dr Fawaz Bitar, Dr Waheed Afzal

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h.tan@abdn.ac.uk, Fawaz.Bitar@uk.bp.com, waheed@abdn.ac.uk

The School of Engineering at the University of Aberdeen is evaluating the introduction of problem-based (authentic) learning to the postgraduate (SCQF Level 11) Human Factors in Engineering (HFE) Course in response to research, e.g. [Atkinson & Pennington \(2012\)](#) and [Kovesi & Csizmadia \(2016\)](#), investigating employer perceptions of recent engineering graduates. The work is being funded by the Royal Academy of Engineering (2021 – 2024). A key part of this work is evaluation of the effectiveness of different assessment and feedback-to-student practices. Initial evaluation is from student feedback and lecturer experience over the academic years 2021-22 and 2022-23.

The HFE Course exists as a mandatory part of three taught MSc programmes: MSc Safety & Reliability Engineering, MSc Process Safety, and MSc in Advanced Chemical Engineering (EG55P9) and also as a stand-alone online course (EG55Q5).



ASSESSMENT AND FEEDBACK – PRELIMINARY EVALUATION (2021-22, 2022-23)

Assessment
Course assessment comprises 4 formative weekly assignments and 3 summative assignments for all students (campus and online). With few exceptions, student feedback (particularly from those studying online) indicates that the formative assignments, part of the problem-based learning, have been enjoyable and enhanced their learning. The benefits of formative assessment are discussed by McCallum & Milner (2021) . The few exceptions were predominantly campus-based students who cite giving 10-15 hrs. per week to course study and problems with providing qualitative responses to assignments as their main difficulties. Some students were also reluctant to participate in group activities. Whilst these issues are reported by few on the HFE Course, they need to be addressed within the School of Engineering as they are similar to those reported by Todd et al. (1993) investigating perceptions of weaknesses in engineering graduates by industry.
Feedback
Feedback on the course consists of peer and lecturer feedback on summative Assignment 1, lecturer feedforward on formative assignments and feedback on summative Assignment 2, and lecturer feedback on summative Assignment 3. Our evaluation to date is primarily focused on the feedforward given to students on their formative assignments (Part II of the Course). Initial indications, including feedback from students, suggests that feedforward on formative assignments assists students in the writing of the summative assignments and enhances their active learning of course material. The evaluation recognises the limitations of feedback/feedforward discussed by others, e.g. Buckley (2021) and Price et al. (2010) .

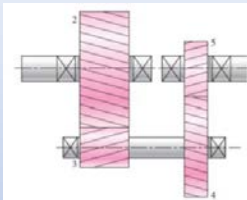
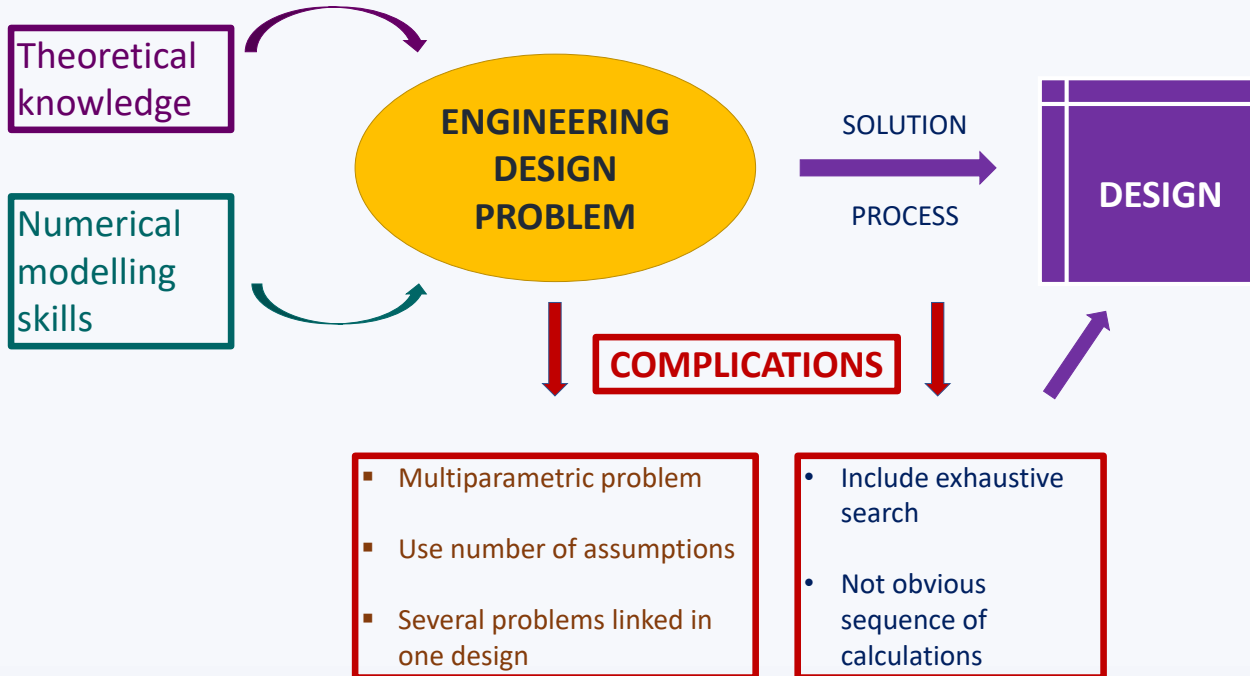
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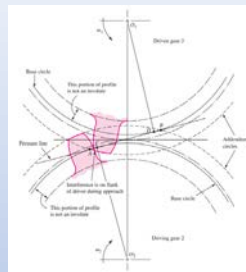


ENHANCE STUDENTS' CONFIDENCE IN ENGINEERING DESIGN PROBLEMS SOLUTION

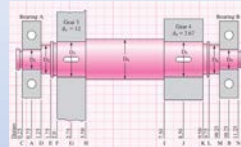
M. Menshykova, O. Menshykov



Budynas R. G., Nisbett K.J., Shigley J.E. Shigley's Mechanical Engineering Design. New York: McGraw-Hill, 2011



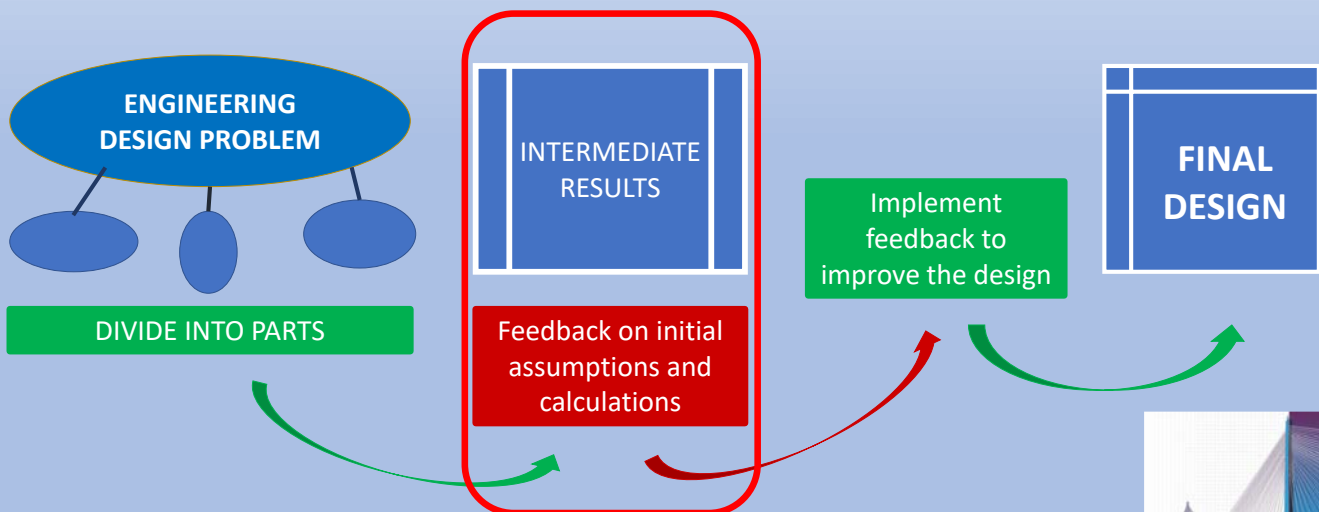
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<https://www.euroricambigroup.com/en/products-and-quality/gearboxes-and-differentials>



SCHOOL OF
ENGINEERING



Developing an integrated, accessible and inclusive web browser-based learning environment to engage with students



Mintu Nath

School of Medicine, Medical Sciences and Nutrition, Email: Mintu.Nath@abdn.ac.uk

An integrated, accessible and inclusive learning environment

Search the full content

- Preface
- Overview >
- 1 Computing Environment
- 2 Statistical Theory
- Data & Plot >
- 3 Data Environment
- 4 Static 2-Dimensional Plot
- 5 Dynamic 2-Dimensional Plot
- 6 Dynamic Time Series Plot
- 7 Dynamic 3-Dimensional Plot
- Move between hyperlinked Chapters**
- Environment >
- 8 Scripts and Codes
- 9 User-friendly Interface
- 10 Assessment
- 11 Video
- 12 Report Generation
- 13 Unique Learning Environment
- Learn Anything, Anytime, Anywhere
- Appendices >
- A Software Requirement

Learn Anything, Anytime, Anywhere

Summary

An Integrated Learning Environment

- An integrated approach to delivering multiple types of learning resources
- Harnesses modern web browsers' powerful content delivery and presentation features
- Delivers texts, data, graphics, images, multimedia, animations, web-based resources
- Presents static and dynamic sources of data and graphics
- Includes interactive, user-friendly interface for learners
- Incorporates simple assessment and feedback
- Blends well with the current Blackboard Learn environment.
- Creates the entire course content as a downloadable PDF document for offline viewing.
- A flexible and sustainable approach to managing the content delivery mechanism for tutors
- An enhanced learning experience for students building a resilient learning community (Centre for Academic Development 2023).

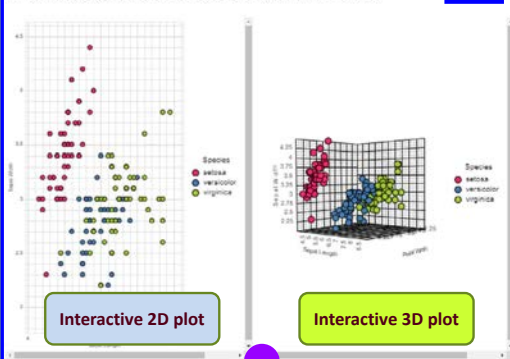
Cross-references and footnotes

Table of contents

- Hyperlinked Cross-referenced Text
- Model **Section headings**
- Script
- Outputs **Move between Sections within a Chapter**
- Conclusion
- Dynamic, Interactive, Searchable Data
- Dynamic and Interactive Graphics
- One Interface for Multimedia
- Interactive and User-friendly Interface
- Assessment and Feedback
- World at your fingertip
- References

Dynamic and Interactive Graphics

The following figure presents 2D and 3D plots of the Iris data.



Interactive 2D plot

Interactive 3D plot

Assessment and Feedback

Question 1

Mean of a variable is a location statistic: TRUE or FALSE

Answer to Q1

Question 2

Write an R script to calculate mean, variance and standard deviation of *sepal length* from the *iris* data

Answer to Q2

Question 3

Explain the *coefficient of variation* of a variable

View [Chapter 10](#) to check the answer to Question 3.

Write script, produce plots and present results in the same environment

Multiple options to incorporate assessment and feedback for learners

Incorporate more complex MCQs with assessment & feedback

Publication-quality plots and diagrams

Hyperlinked Cross-referenced Text

Model

The following equation captures a linear regression model (Equation 1). The linked equation can be references from anywhere in the document.

High-quality typesetting

$$y_i = \beta_0 + \beta_1 x_i + \epsilon_i \quad (1)$$

Cross-referenced Equation

Script

We implemented here the linear regression model presented earlier (Equation 1) on the *iris* data to model *Petal width* using *Petal length* as a predictor variable. Note how the statistical model is translated into the R script.

Code

```
fm <- lm(Petal.Width ~ Petal.Length, data = iris)
```

Access cross-referenced Equations, Tables, Figures and References from anywhere in the document

Dynamic, Interactive, Searchable Data

An example of integrated, downloadable, interactive Iris data with context-sensitive search option is shown below.

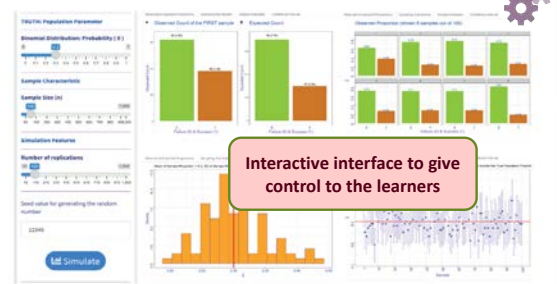
	Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
1	5.1	3.5	1.4	0.2	setosa
2	4.9	3	1.4	0.2	setosa
3	4.7			0.2	setosa

Showing 1 to 3 of 150 entries

Previous 1 2 3 4 5 ... 50 Next

Search, Sort, Copy and Save data

Interactive and User-friendly Interface



Interactive interface to give control to the learners

An Interactive Interface developed using the RShiny library

Save the complete resources as HTML, PDF, EPUB or Word documents for offline access

Very minimal programming knowledge required to develop a resourceful environment

One Document

- Hyperlinked, cross-referenced text
- Citations, bibliography and index
- Dynamic, interactive, searchable data
- Static, dynamic & interactive graphics
- Theory, Data, Codes, Results, Report
- Text, Audio, Video, Web resources

One Community

- Interact with static & dynamic content
- Navigate whole documents smoothly
- Multiple forms of content
- Online and Offline access
- Easy to develop, manage & maintain
- Share and learn together

One World

- Free and open source
- Reproducible content
- Platform-independent
- Blackboard compatible
- Share with the world

Evaluating learning experience of taught postgraduate students

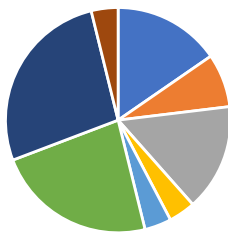
Dr Zeshu Shao, Dr Clare Kirtley & Dr Mirjam Brady-Van den Bos
School of Psychology

Introduction

- **Aim:** Explore how PGT students develop essential resilient skills to efficiently overcome academic and personal challenges, anxiety, and pressure.
- **Participants:** Current PGT students at the School of Psychology with varied educational background, academic and personal challenges, and learning expectations
- **Methods:** Combine quantitative (i.e., Academic Resilience Scale [Martin & Marsh, 2006] and open-ended questions) and qualitative (i.e., focus group interview) research methods

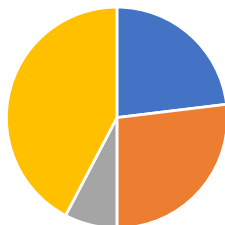
- 26 participants (via Testable)

Nationalities



■ UK ■ US ■ Nigeria ■ Sri Lanka
■ Singapore ■ India ■ China ■ Libya

Experienced teaching styles



■ Both, but more student-centred than teacher-centred
■ Both, but more teacher-centred than student centred
■ Student-centred approach
■ Teacher-centred approach

Quantitative component

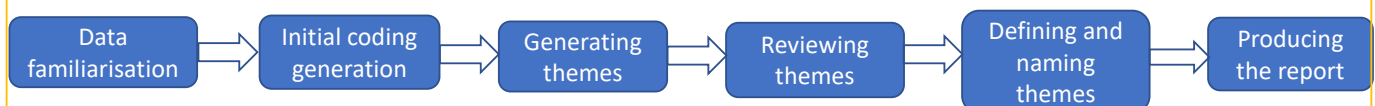
Academic Resilience Scale (ARS-30)

- 30 items, Using 5-point Likert scale, the total score ranges from 30-150, the greater number means better academic resilience
- Context-Specific Constructs: representing significant academic challenge and struggle. An example:
- **The vignette:** *You have received your mark for a recent assignment and it is a 'fail.'* The marks for two other recent assignments were also poorer than you would want as you are aiming to get as good a degree as you can because you have clear career goals in mind and don't want to disappoint your family. The feedback from the tutor for the assignment is quite critical, including reference to 'lack of understanding' and 'poor writing and expression,' but it also includes ways that the work could be improved. Similar comments were made by the tutors who marked your other two assignments.
- Item 1: I would not accept the tutors' feedback
- Three factors measured:
- **Factor 1 - Perseverance** (e.g., hard work and trying, sticking to plans and goals, accepting and utilizing feedback, imaginative problem solving, etc.)
- **Factor 2 - Reflecting and adaptive-help-seeking** (e.g., reflecting on strengths and weakness, altering approaches to study, seeking help, support and encouragement, etc.)
- **Factor 3 - Negative affect and emotional response** (e.g., anxiety, catastrophising, avoiding negative emotional responses, optimism and hopelessness, etc.)

Experienced teaching styles	ARS-30 scores		
	Factor 1	Factor 2	Factor 3
Both, but more student-centred than teacher-centred (N=6)	59	38	20
Both, but more teacher-centred than student centred (N=7)	50	36	18
Student-centred approach (N=2)	60	37	27
Teacher-centred approach (N=11)	57	33	22

Qualitative component

- 2 focus group (in-person interviews, 5-6 participants in each group)
- **Thematic analysis (Braun & Clarke, 2006)**



Expected outcomes

- Identify what factors hinder or enhance the postgraduate students' development of resilient learning skills.
- Provide a critical evaluation of current MSc Psychology course.
- Improve the teaching strategies applied in the relevant courses and learning environments.

References

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The use of crossword puzzles as an enjoyable assessment tool to enhance engagement and foster student-centered learning in PGT courses

W. E. Housen

Institute of Medical Sciences, University of Aberdeen, Foresterhill, Aberdeen AB25 2ZD, Scotland, UK. Email: w.housen@abdn.ac.uk

Abstract: The Launch of **ChatGPT** had raised concerns within the higher education sector about the potential compromise to the integrity of the assessment. **Innovative methods of assessment** that could enhance engagement and foster students' learning **are thus much needed**.

Crossword puzzles have been proposed as an **active learning strategy** that could promote student engagement and knowledge retention. In addition, many students perceive crossword puzzles as enjoyable. However, studies showed that crossword puzzles increased exam scores for some students but not others. Here, I will **summarise the pros and cons** of using crossword puzzles in assessment and **make recommendations**.

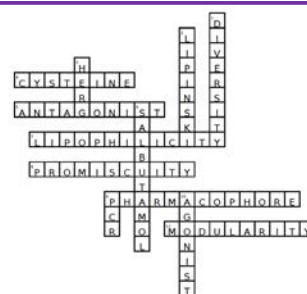
The Challenge: The advanced artificial intelligence (AI) chatbot, ChatGPT could be a useful educational tool, but there are significant concerns about its misuse in assessments. Educators need to **find quickly appropriate ways to assess students**, and to **integrate this new tool in teaching** rather than opposing it. It is also expected that **similar more advanced tools will be developed** very soon. For example, Microsoft has recently invested billions in AI and already has a new AI-powered Bing search engine. They are also adding new functionality to the tools we all use on a daily basis, such as Word, embedding AI to help users create document summaries.



It chat bot: Rafael Henrique / SOPA Images/US via Reuters Connect
https://www.technology2022/12/chatgpt-openai-artificial-intelligence-chatbot-what.html

Crossword puzzles – strengths and limitations from the literature

- Are example of **active learning** which is defined as anything that involves students doing things and thinking about the things they are doing.
- Require the ability to remember factual knowledge and provide foundational knowledge which is at the **remembering level** of Anderson's revision of Bloom's of educational objectives.
- Improve **knowledge retention**.
- **Increase exam scores** for some students but not others.
- Can be **cumulative** and thus are helpful to students who struggle to remember information from early lectures in long courses.
- Help identify knowledge domains and **fix students' information gaps** and weaknesses.
- offers an **enjoyable learning atmosphere** plus an interactive scientific environment for classroom learning.
- Could **raise engagement**, motivation, and performance and **reduce anxiety**.



Down:

1. A character of Natural products libraries.
2. A name of a scientist that has defined the rule of 5.
3. a subtype of potassium ion channel that mediates the repolarizing I_{Kr} current in the cardiac action potential and its inhibition by drugs could result in fatal long QT syndrome.
6. A drug for treatment of asthma that was discovered based on the structure of the natural receptor ligand adrenaline.
9. One of the technologies that enabled combinatorial biosynthesis.
10. A chemical that activates a receptor to produce a biological response

Across:

4. the amino acid that could be processed with the cyanobactin heterocyclase TruD.
5. A chemical that blocks or dampens a biological response by binding to and blocking a receptor rather than activating it
7. a character that should be present in compounds that can cross blood brain barrier
8. A character of the enzymes used for combinatorial biosynthesis toward substrates.
9. The molecular features in the ligand that are necessary to ensure the optimal interaction with the receptor and to trigger (or block) its biological response.
11. One of the features of RPPs pathways that enables combinatorial biosynthesis.

Figure 1: Crossword puzzle created for Small Molecule Drug Discovery course students using education.com/worksheet-generator

Recommendations: I suggest **testing Crossword puzzles as an assessment tool** and measuring the impact on student satisfaction, engagement and overall scores. **Students should be asked to provide meaningful clues** for the puzzle from their teaching material for their classmates with the aim that students engage more with the course and **take an active role in their own assessment**. Clues should be submitted each week to ensure that students are studying regularly. **The academic** can use this student-created bank of clues to **create a crossword puzzle** for the students to **solve either independently or in groups**. This will create an **enjoyable atmosphere** and help students to retain and exchange knowledge. The puzzles should be marked against model answer by peers in the class. This approach make the assessment for learning as well as of learning. It is **difficult for ChatGPT and similar tools to generate valid clues from lecture materials** which are only made available to the student. Even if the students decided to seek help from web resources or by using any other tools, they will still learn a lot from such exercise.

References:

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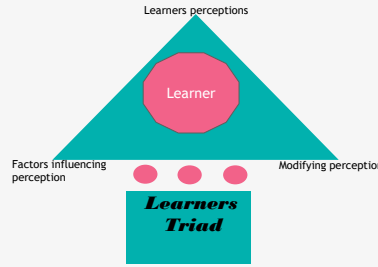
The flip side of the feedback coin: what do learners want

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Introduction-

Feedback is considered a two way and active process which requires learner engagement and acceptance for it to be effective. Understanding the learners' perceptions and what influences their perceptions, is helpful in identifying the steps that can be taken to modify the perceptions. Moreover, focussing on the factors which influence the learner perceptions is essential in formulating effective feedback strategies and acknowledging the challenges in building resilient learners.



Aims -

- To explore how learners perceive feedback and what are their preferences
- To identify the factors which influence learners perceptions
- To highlight the strategies to modify learner perception and promote feedback resilience

Method-

Literature search was carried out from two databases , Scopus and Pubmed using the key phrases- 'learners perception of feedback', 'learners preferences of feedback' and 'feedback learner requirement'. The search generated a total of 3148 articles of which 1978 articles were from Scopus search and 1170 articles were from Pubmed search . Titles and abstracts were screened and 31 relevant articles were selected for synthesis of findings . A narrative review has been conducted and findings with key messages are presented.

Findings-

Perceptions/Preferences

Student perceptions-

General (1) - Feedback is a monologue, process that happened 'to them' rather than 'with them'

Positive (1,2)-

- Constructive
- Based on direct observation and task-specific
- Timely
- Balanced
- Good relationship with the feedback provider

Negative (1,3,4,5)-

- Absent or too little feedback
- Not constructive
- Lacks purpose
- Threatens self-esteem
- Person specific rather than task specific
- Dominant tone or attitude of the provider
- Poor relationship with the provider

Student Preferences (5, 6, 7, 8, 9, 10,11,12)-

- Constructive feedback which is well intentioned, guided and sensitive to emotional and cognitive needs
- Task specific and objective feedback rather than general criticism
- Provider empathy and ability to give concrete advice
- Frequent formative assessments, clear expectations and individualised performance feedback
- Opportunity for agency to influence assessment outcomes
- Good relationship with teachers who don't exercise dominance
- Intraprofessional over interprofessional

Influencing factors

Person centric, Process centric and Relationship

Person centric-

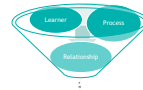
- Cognition- both hot cognition(emotional response), and cold cognition(analytic or unemotional) (13)
- Experience, confidence, fear and biases interacting with cognition (13)
- Readiness(to understand context), Willingness(motivation and growth mindset), Ability to create a positive narrative and incorporate feedback into practice change) (14)
- Sense of control influenced by the design of the assessment programme (15)
- Self-esteem, attitude (5)
- Relation of feedback to self-perception (16)

Process centric-

- Clinical context/Purpose (17)
- Quality of feedback(5)
- Fairness (5)
- Assessment culture(18)
- Learning environment (19)
- Institutional culture (20, 21)

Person and Process Interaction-

- Relationship (2, 7, 17, 22)



Modifying perception

Improving learner perception for enhancing resilience

Feedback literacy for learners-

- Allow student engagement rather than something they are subjected to (23)
- Nurture the skill of receiving feedback (24)
- Support to interpret failure feedback with interventions like prompting internal feedback and self-compassion(25)
- The Prepare to ADAPT (Ask-Discuss-Ask-Plan Together) framework to clarify the process, apply a structure, and develop coaching relationships (26).

Student agency-

- Allow greater control/learner autonomy (14)
- Self-regulated learning to construct self-image, conduct self-reflection and seek diverse learning strategies(16, 27)
- Promote self-assessment exercises, create library of feedback and send grades after feedback acted upon (25)
- Assess as learning (AaL) to make students charge of creating formative assessments to reinforce deep learning and critical thinking(28)

Learner and Educator partnership-

- Exercising teachers positional agency less dominantly(2)
- Faculty development and efforts to improve coaching and mentoring for students, residents, and fellows(7).
- Reviewing culture to allow bidirectional engagement (19)
- Behaviours that enable trust and supportive relationship(21)

Validated tools to understand perception and give feedback-

- Feedback in medical education instruments (FEED-ME) (29)
- The Assessment environment questionnaire (AEQ) (30)
- Modelling with real time informative feedback (MORTIF) (31)

Summary-

The feedback loop depends on the provider, giving specific and actionable feedback and the learner, understanding and accepting the feedback to influence performance. Learners perceptions of the feedback, highlight the facilitators and barriers to engaging with the process and their preferences related to positive encounters. Variations in the perceptions can be related to the individual learner(person-specific), the assessment process (process-centric) and/or the complex dynamics between the two. The learner-provider educational alliance is recognised to be the key point in need of attention to foster a trusting relationship, where student agency is respected and feedback literacy promoted. Validated tools can be used to understand the learners' perceptions further and enhance the quality of feedback provided. To establish feedback as a two way relationship in a true sense, the focus needs to shift towards the learner. Emphasis on empowering the learner will help to balance the scales in levelling up the partnership between the educator and learner and an important strategy in pursuit of creating resilient learners through feedback.

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Fantastic Learners and Where to Find Them

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1. Formative Assessment: Assessment FOR Learning

The known benefits¹:

- Associated with promising learning gains, when timely, effective and meaningful feedback is provided.
- Guides and shapes educator's practice, in real-time.

My questions:

- Can formative assessment be used to encourage students to engage with their studies regularly and in scheduled hours?
- Can formative assessment help learners becoming **FANTASTIC LEARNERS**, by supporting them in identifying alternative learning strategies that are better matched to their individual learning process?

2. Methods

- Embryo to Organs (DB3504), 30-credit third year course (undergraduate), 10 students.
- A range of formative assessments implemented, including online OMBEA polls, group escape room activities and a model building exercise.
- Formative assessment sessions (with the exception of OMBEA polls) delivered at the end of each block of teaching.
- "Open book", to mimic current exam conditions and to ensure authentic assessment.
- Students always asked to work in groups.
- Given the limited number of students, extensive feedback was provided verbally and in real-time to all students.

3. Model Building Exercise



9 students



90 minutes



Scan the QR code to see models from students

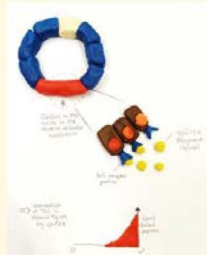


Figure 1. Model illustrating the molecular mechanisms underlying dorso-ventral patterning in Drosophila development.

WHY: The study of developmental biology can be very challenging, due to the abstract and ever-evolving nature of developing organisms. Model Building exercises are particularly useful as they encourage students to give a shape to their thoughts.

HOW: Working in groups of three, and using modelling clay, students were asked to build models representing expression of genes driving early Drosophila development. Models were then used by each group to illustrate various morphogenetic events of Drosophila development to the other groups.

4. Digital Escape Rooms



9 students



90 minutes



Scan the QR code to see escape rooms

WHY: Digital Educational Escape Rooms have acquired popularity in recent years; as most game-based learning, they create an opportunity for active learning, increasing engagement while enlivening the classroom experience².

HOW: Working in groups of three, students were given a scenario to escape; their final lock was the answer to a question on Drosophila development. To get the passcode to open that lock, students were asked to solve a set of 10 problems, designed not only to test knowledge (factual), but also to test critical thinking and the ability to apply knowledge to solve scientific/research questions. Each lock the students opened provided them with a message. Students were asked to collect the messages, which they would then use to collate an answer to the final lock and escape.

5. What did students think?

" [...] the formative assessments allowed us to **break away** from the monotony of lectures and **really engage** with the content."

" [...] we got to consolidate all the information we had been learning about in **fun and engaging activities** and we had the chance **work with our peers** and help each other out."

"In order to effectively revise the content, I feel getting tested so soon after the content being delivered allows us to really identify where we should focus our studies. It also **helps prepare us for the content still to come.**"

"The formative assessment was creative and extremely rewarding. **It inspired ideas for future study methods**, it got the class to engage effectively with each other and the professors, **it got us thinking, not just mindlessly working** through notes and papers we may not fully understand."

"**It challenged us to apply** what we had learnt and pinpoint what we don't know/don't fully understand."

"I would have liked even **more [formative assessment] sessions**"

6. Conclusions

- Students' feedback confirmed they found the range of activities proposed very useful, challenging and engaging.
- **Students highlighted that the sessions did help them in keeping up with content and understanding how to apply the knowledge gained.**
- **Students also commented they found activities such as the model making exercise "inspiring [...] for future study methods".**
- Overall, students highlighted they would like more regular formative assessment sessions, also in other courses.
- Feedback (not shown) highlighted that students much prefer original assessment methods, that allow them to apply their knowledge, to traditional assessment methods (e.g. OMBEA MCQs).

7. Considerations

- Can this be scaled effectively to larger groups of students? How can feedback be provided effectively to a larger cohort of students? Will multiple educators be required?
- Workload issues, both from the students point of view (extra sessions to attend) and from the educator point of view (significant time needed for preparation).

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Managing the return to campus and in-person teaching

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Background

- In January 2020, the outbreak of a new disease called Coronavirus (COVID-19) began. The virus spread rapidly and was declared a pandemic in March 2020.
- Over 144 countries suspended face-to-face classes effecting millions of students.
- The COVID-19 pandemic shifted university teaching to online platforms, which presented challenges for students such as isolation (1), adapting to new studying styles (2) and a decline in student mental health (3).
- Two years after adapting to these new teaching methods, students returned to campus and in-person teaching.
- This study aims to highlight the thoughts, feelings and experiences of university students returning to campus after the global pandemic and how they coped with this change.

Methodology

- Participants were 12 final year psychology students at the University of Aberdeen, who studied both in-person and online throughout their university experience.
- Interviews questions covered four different sections of the university experience.

1. Social life



2. Teaching

3. Learning & self-management

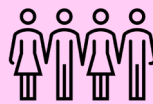
4. Wellbeing & illness

- Semi-structured interviews were used with a series of questions generated to address the key research aim.

Theme 1: The benefits of being back on campus for study and assessment

- Being back on campus prompted a studying mindset.
- Increase in motivation and engagement and being surrounded by students and access to university facilities.
- Being back on campus helped facilitate planning and organisation, linked to increase structure with student routines.
- The main benefit of being on campus was the access to staff support (ability to ask lecturers questions in-person).

Results



Theme 3: Students' attitudes towards COVID-19 and general illnesses

- Majority of students indicated that they did not have anxiety regarding contracting COVID-19.
- The excitement about returning to campus overruled these fears of the virus.
- It was deemed more daunting catching other common illnesses and how this would affect their ability to do their university work.

Theme 2: The ups and downs of online learning

- Lots of negative emotions associated with online learning. Students described learning online as "isolating" and "overwhelming".
- Difficult to communicate effectively during online learning.
- Students often left online classes feeling unaccomplished.
- Main advantage of online learning was its flexibility.
- Students enjoyed having the ability to work at their own pace and pause, rewind and use captions during online lectures.

Theme 4: Impact on socialization

- It became challenging to balance work commitments, university and social life since returning to campus.
- Work-life balance was hard to fulfil, due to having to change routines developed during online learning.
- Lots more opportunities to socialise simply by seeing other student everyday, and through university societies.
- Some anxiety around having to make new friends and worries about social skills not being as good since the pandemic.

Conclusions

Thematic analysis of interviews with participants revealed new insights into student expectations and feelings about returning to campus after years of online education.

The results of this study provide a good starting point in future research on the effects returning to campus after online learning has on students.

Overall, students were excited to be back on campus. The structure of in-person classes as well as the opportunities to use university resources, were cited as some of the ways in-person classes improved the university experience for students. Social interactions on campus were highly important, however some apprehension about socializing was expressed.

Future research on this topic should be expanded by involving a more diverse range of students such as international students and students from different year groups and degree discipline to see if their opinions vary.

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Fostered Maladaption?

Exploring the experience of studying, management of failures and expectations of perfectionistic university students

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INTRO

- **Perfectionism** = striving for flawlessness, having high standards of performance, being excessively critical in self-evaluation of behaviour [1,2]; previous research: positive correlation between perfectionism and **psychological maladjustments** - anxiety, depression, eating disorders [1,2]
- **Not an edge-phenomenon**: Meta-analysis with birth-cohorts from 1989-2016: linear increase in perfectionist tendencies over the last decades [3]
- Maladaptive Perfectionism affects **25% to 30% of young adults** [4]
- Positive relationship between perfectionism and depression, anxiety & stress level in Australian university students [5]

METHODS

- **Thematic Analysis** (Braun & Clarke, 2006, 2019)
- Semi-structured interviews; essentialist epistemology; semantic/latent coding
- 12 University of Aberdeen Psychology students (Single & Joint Honours)
- Age, M=20.6, Undergraduate Level 1-4
- Interview Duration, M= 46,75
- **Self-identifying perfectionists**

THEME 1 Conceptualisation of perfectionism

(Rather) explicit features:
 High (internal) standards, fear of failure, affect-cognition discrepancy, all-or-nothing-dichotomy, high quality output/academic performance
 (Rather) implicit features:
 Self-worth contingency, high responsibility/over-commitment/conscientiousness, self-worth defence
 Awareness over & evaluation of own perfectionism:
 High (internal) standards, fear of failure, affect-cognition discrepancy, all-or-nothing-dichotomy, high quality output/academic performance

So, I would say like...yeah, my expectations [can be] quite unrealistic. And then it's quite hard to meet them. So, then you're constantly faced with like, a form of like, failure or something negative. (P9)

THEME 2 Educational development

SUBTHEMES:
Primary/secondary school experience
 Highly consistent pattern of **over-average performance** in school including **high awareness** of performance, meeting primary school standards with ease, met by subliminal reinforcing behaviour by parents
Felt struggle with education at later stage
 equally consistent pattern of **experienced struggle** and **perceived failure** in secondary school, upon finishing school

Like, even as a kid, I was always like, I was really good at school. I was always like, the golden child in every sense. (P11)

THEME 5 Anticipation of self & opportunities in the future

SUBTHEMES:
Rather unspecific plans
 Students aim for high GPA, often validated with **'fear of limiting oneself'**
Rather specific plans
 Students can have very specific plans that require high GPA, where plans do not require **excellent GPA**, students tend to aim for it nevertheless
Adaptation to future outlook through past experience
 Through earlier experience of failure, often at end of secondary school, students admit to believe that things will **'turn out for the better'** even if overly high expectations are not met

I want to come out of it with like [...] a sense of direction [...] like an idea of what I want to [...] do in the future, and just feeling fulfilled and being like, this was a good decision to go to uni like, rather than to not to go. (P13)

THEME 6 Identity & Self-Worth

Studying experience & degree are closely intertwined with **identity, sense of self & self-worth**: Essentially, academic performance appears to be a mechanism for stabilising self-worth, doing degree aligns with strive to fulfill **pre-established idea of self**; on the other hand side a high sense of identity appears closely linked to experienced **joy and passion** over studying process, that is sustainable and renders studying an overall positive experience despite pronounced challenges

THEME 3 Studying experience

SUBTHEMES:
Pre-assignment
 Where students have established a strong attachment to high grading, the pre-assignment experience is characterised by **anxiety, stress & worry**; on the other hand an inherent interest in learning and studying render it a rewarding experience
Post-assignment
 Negatively rated grades are received with **pronounced negativity bias**, lasting negative affect, feedback immunity, feedback denial
 Positively rated grades are followed by unstained positive affect, feedback that can be accepted leads to rewarding experience
Recurrent studying issues
 Studying experience is accompanied by recurrent issues, e.g., **procrastination**, extended & challenging to meet time-needs, 'overshooting', no point of stopping, misunderstanding expectations
Adaptation over time
 Students increasingly **adapt mindset** to overall challenging experience over time, both through development of **self-established study methods** (try & fail), and mindset development, negative affect however appears overall lasting

"I kind of think I overreacted a bit. I'm like, it's not even that bad [laughs]. Because I remember the situation quite well. And then I was actually looking back the other day, and I was like, oh, I thought I got like a 13 or 14, like 15 is still a B... [...] if you actually look at it, in its own right, then you think, well, it could be a lot worse. Like it's not...it's not bad. (P6)

THEME 4 Overall university experience

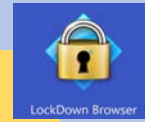
SUBTHEMES:
Overwhelming experience
 Patterns of **responsibility-taking and overcommitment**, in connection with inherent interest in a lot of different things and high academic expectations render university an overwhelming experience, characterised by ongoing **multitasking-struggle**
Overall enjoyment of university/academic experience
 University is overall deemed a positive experience, central herein appears to be the sense of **satisfaction with 'doing the right thing'**, additionally, academic performance is deemed **satisfactory** in review

DISCUSSION

- ! Patterns of **perfectionistic maladaption in academia** appear to be inherently interwoven with educational & university structures
- ? Is experienced academic struggle in conjunction with perfectionism a **precursor** for high performance or a **concomitant**? How bearable are perfectionistic maladaptions deemed, is the mental health trade-off 'worth' the high performance? To what extent is task fulfilling and content integrating lost in a culture of **assessment focus**?
- **Education & educational psychological intervention** (on both school & higher education level)

References:

- 1 Farmer, J. R., Mackinnon, S. P., & Cowie, M. (2017). Perfectionism and Life Narratives: A Qualitative Study. *SAGE Open*, 7(3). <https://doi.org/10.1177/2158244017721733>
- 2 Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology*, 60, 456-470. [doi: 10.1037/0022-3514.60.3.456](https://doi.org/10.1037/0022-3514.60.3.456)
- 3 Curran, T., & Hill, A. P. (2019). Perfectionism is increasing over time: A meta-analysis of birth cohort differences from 1989 to 2016. *Psychological Bulletin*, 145(4), 410-429. <https://doi.org/10.1037/bul0000138>
- 4 Flett, G. L., Hewitt, P. L., Besser, A., Su, C., Vaillancourt, T., Boucher, D., Munro, Y., Davidson, L. A., & Galle, O. (2016). The Child-Adolescent Perfectionism Scale: Development, Psychometric Properties, and Association with Stress, Distress, and Psychiatric Symptoms. *Journal of Psychoeducational Assessment*, 24(7), 634-652. <https://doi.org/10.1177/0274807516661381>
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- Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-1.
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- Title Image URL: https://img-cdn.inr.com/imageupload/1920_h_1080_c_fill/images/panoramio/Gettyimages-1265179381-523011_xuajap.jpg



DIGITAL EXAMINATIONS AT SCALE RESPONDUS LOCKDOWN BROWSER

DR NIGEL BEACHAM AND DR ANDY YULE
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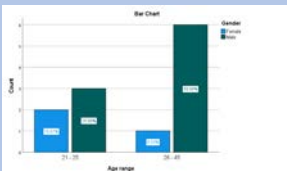
INTRODUCTION

There remains a number of areas within education where digital technology has still to be fully adopted. The continued use of paper-based examinations by universities ensures reliability and validity, despite learners rarely having to write. This poster presents findings from a pilot using Respondus, a tool for Blackboard that locks down the device from which an assessment is accessed. The pilot helped to explore the challenges students faced using BYODs within examinations and the University in terms of electrical power and resource concerns. The poster aims to initiate a conversation about the use of Respondus at scale.

PILOT STUDY

The pilot aimed to evaluate the usability of Respondus

- Pilot targeted 25 PGT students
- Students studying CS551S Web Development course as part of MSc IT programme
- Respondus embedded within assessment as part of final MCQ exam



METHODOLOGY

- Students previously used their own standard browser for MCQ tests on own device
- Students were informed exam to take place in computer lab
- Students could select to use lab computer or own laptop
- Students given instructions to download, install and check Respondus lockdown browser
- Students first given short MCQ mock test to practice using lockdown browser
- Students then given access to exam using lockdown browser
- Students given survey to complete following week

EASY TO USE

- 1) Download & Install once using unique University of Aberdeen URL



Start the Browser by double clicking icon



Login to Course and Select Exam

Take the Exam with no access to computer functions and websites.

CONCLUSIONS

Respondus is able to prevent some elements of academic misconduct

Differences in perceptions exist between male and female students

Lockdown browser is just as usable as standard browser

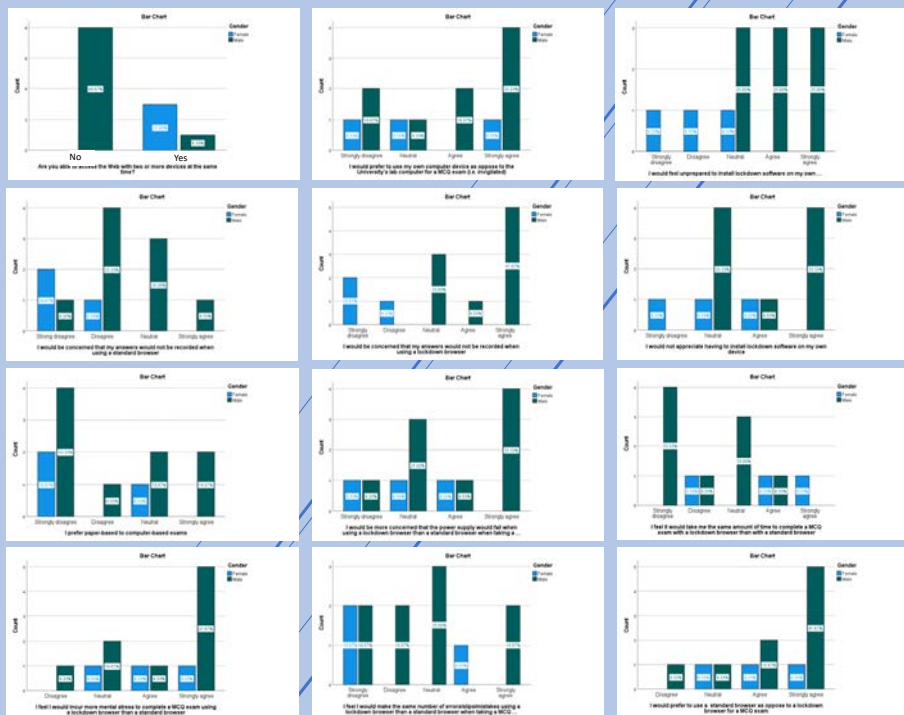
Usability varies between computer devices

Students need to feel confident in University assessment and recovery procedures

Challenges remain using Respondus at scale for some examinations

KEY FINDINGS

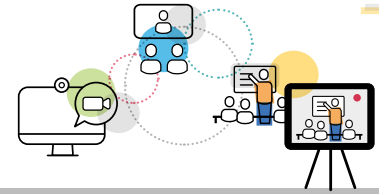
12 students completed survey



For more information:
<https://web.respondus.com/lockdownbrowser/>

How does the use of video observations foster resilient learning communities?

John Paul Mynott, Faye Hendry, Kaitlyn Edwards & Rebecca Hossick | School of Education



01 CONTEXT

DURING COVID-19 - university tutors were not able to undertake physical, in-person visits to schools to assess student teachers. As such, we explored virtual observations whereby students recorded themselves teaching and shared this with university tutors.

POST-COVID - we wanted to explore the extent to which such virtual observations might continue to be useful in facilitating student teachers' reflection on their own practice. We wanted to discover whether this student-led reflection would build autonomy, flexibility and therefore resilience in their teaching practice.

02 PARTICIPANTS

- Focus was to explore how the pandemic-initiated use of video as a form of observation assessment is experienced by student teachers.
- Focused on the students who were being assessed through virtual observation.
- Interviews of 4 MA3 students alongside questionnaire responses.

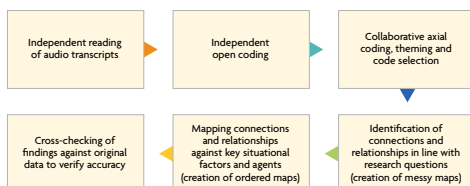
QUESTION PROMPTS - INTERVIEWS

Questions were tailored to each interview and were subject to change in response to discussion.

- Tell us about your experience and how you found using video as part of your assessment?
- Did you watch the video of yourself teaching afterwards? If so, was that useful to you at all?
- Did you use the video to reflect on your practice at all?
- Did you experience any technical difficulties at all?
- Did it cause you any anxiety or concerns knowing that the technology may not work?
- Did you find that not being able to record the pupils affected your experience at all?
- Do you have anything else you would like to share?

03 METHODS

- Exploration utilised Grounded Theory (Merriam & Tisdell, 2016; Kolb, 2012) so that findings were not pre-empted but emerged from the data analysis.
- Clarke's situational mapping (Clarke, 2003; Clarke, Friesse & Washburn, 2018) of both messy and ordered maps was used to clarify the emerging findings.
- The process was iterative, with themes checked back against the original transcripts to ensure discussions were securely grounded in data set.

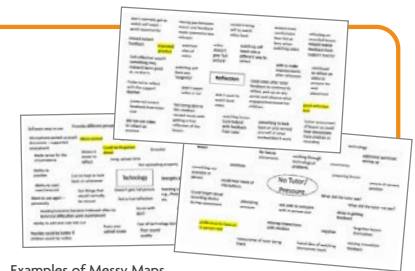


Process of Coding Analysis

04 FINDINGS

Through reworking and discussions of the final maps, we connected our findings with the QAA's Resilient Learning Communities Project for the following themes:

- SUPPORTING STUDENT SUCCESS
- FLEXIBLE, ACCESSIBLE LEARNING
- FUTURE USAGE



Examples of Messy Maps

SUPPORTING STUDENT SUCCESS

- Alleviated pressure of in-person visit
- Performed more naturally
- Feeling more comfortable
- More control if something went wrong
- Improving practice through reflection and evaluation
- Opportunity to observe own practice
- Made feedback more meaningful

"So, it's helpful to kind of be able to have something to look back on and be like, okay, so this is what I said and that worked, and this didn't."

Sam

"Not having the tutor come in and watch me do the lesson, I felt like I was able to perform at my best."

Charlie

FLEXIBLE, ACCESSIBLE LEARNING

- Could record lesson at any time
- Opportunity to restart if needed
- Could watch back video at any time for a number of reasons
- Different perspective of teaching
- Able to access deeper insight into learners' experiences
- Better assessment of learning

"I was able to see what was interesting to the [pupils] and where they were engaged."

Sam

"I thought it was quite insightful because obviously, I don't get to see myself teaching, or myself in practice... so that was a good like, like a good point of view and like a good opportunity for me to like reflect on my own teaching."

Charlie

FUTURE USAGE

- Video can be used for a long time to reflect
- Used to prepare for placement
- Desire to use video in the future
- Can compare practice – see what improvements have been made
- Mixed preference for in-person vs. virtual assessment
- Potential for hybrid/mixed approach in future

"It is something that I wanted to maybe look at using again just for myself."

Sam

"Even though it puts more pressure on the person there, I do think I prefer it. [having an in-person visit]."

Jordan

"I almost kind of preferred it. It took the pressure off a little bit."

Sam

05 CONCLUSION

Virtual Observations have the potential to foster resilient learning communities by promoting student success, providing **flexible** and **accessible learning**, and could be used to support learners in the future.

- Virtual Observations were a reliable, transparent and valid form of assessment of student teacher competency during the Covid-19 pandemic
- A valuable reflective tool that provides students with the opportunity to observe their own teaching
- Can be used at any time to reflect, develop practice or assess learning
- Future use should be explored in more depth

DESIGN: SC0103



SCAN THE QR CODE - TO VIEW THE FULL REFERENCES LIST

- Clarke, A. (2003). 'Situational Analyses: Grounded Theory mapping after the Postmodern turn', *Symbolic Interaction*, 26 (4); pp. 553-576.
- Merriam, S. and Tisdell, E. (2016). *Qualitative research: A guide to design and implementation*. Jossey-Bass: San Francisco.

FOR MORE INFORMATION PLEASE CONTACT: John Paul Mynott (Lead Researcher) Email: john.mynott@abd.ac.uk

"An Assessment Without a Grade": Students' Attitudes to and Understanding of Formative Assessment

Dr Stuart Durkin, Director of Education, School of Social Science (stuartdurkin@abdn.ac.uk) &
 Dr Joy Perkins, Educational & Employability Development Adviser, Centre for Academic Development
 (j.perkins@abdn.ac.uk)



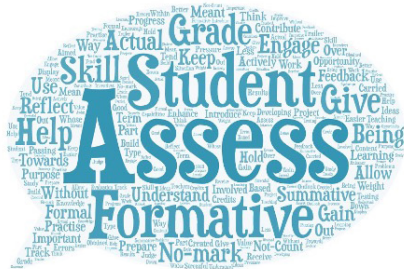
What is the research context and rationale?

At the start of the 30-credit third year course, 'Employer-led Interdisciplinary Project' ED3537, all 25 students undertaking the course were invited to complete a short survey on assessment. In this third year course, students complete a group consultancy style project for a small and medium-sized enterprise (SME), micro-business, or charity, and undertake both formative and summative course assessments. The survey was designed to investigate formative assessment use, and students' views on its implementation in this employability-focused course.

This poster shares our survey findings, while also highlighting the potential wider use of this evidence to inform formative assessment practice.

What are the key survey findings?

The following word clouds illustrate visual summaries of the qualitative survey data (n = 21), in which the size of each word indicates its importance in the student survey responses.



What do you understand by the term formative assessment?

Illustrative student quotes for this survey question response include:

“ Non-marked assessment based on feedback rather than marks. ”

“ I would see it as a trailer for the summative assessment to build up ideas and skills. ”



How do you think ED3537 formative assessments will influence your course engagement?

Illustrative student quotes for this survey question response include:

“ Sometimes I may be guilty of being passive in my learning when it comes to study, so this will help me maintain focus and stay engaged. ”

“ Some of these involve self-introduction as well as working in teams. By working with new students this will certainly boost confidence and by working on a group project, there is a common goal in mind, this will influence motivation. ”



How do you plan to use your formative assessment feedback?

Illustrative student quotes for this survey question response include:

“ I am going to self-reflect and work on the areas I'm lacking and make myself more competitive in the employability market. ”

“ Try to learn as much as I can from it and maybe also ask further questions to understand better. ”

What are the implications from this survey for teaching and learning?

Key learning points from this study are:

- Not to underestimate the extent that an Honours student self-reflects to support their learning and development.
- Team-based formative assessments provide an ideal opportunity for students to develop their skills and build their confidence, especially for those who are not used to collaborative learning.
- Gathered data provides strong evidence for implementing team-based formative assessment and feedback, to support student engagement and attainment in academic courses.

Results of a student survey of additional teaching for self-study



Jenny Gregory, Carmen Brack, Sophie Lee, John Barrow, Catriona Cunningham

Background

Learning that compliments the taught curriculum may help students:

- Build skills, knowledge and resilience
- Move between disciplines
- Aid project and exam performance
- Develop self-directed learning and other graduate attributes.

The demand for and preferred style and content of additional teaching is however unknown. This study gathered feedback from medical science undergraduates via an anonymous questionnaire.

Questionnaire design and analysis was supported by internal funding for two postgraduate placement students (CB and SL) over summer.

Results

Fifty-four students across 20 degrees, all levels responded to an online questionnaire about demand for self-study modules. A summary of questions and responses are given below. The greatest response came from Level 3 students (46%) followed by Level 2 (22%). 17% of responses came from Level 4 or recently graduated students.

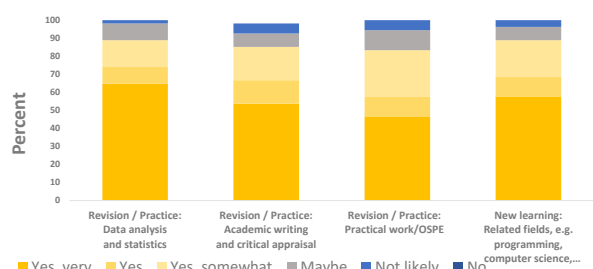


Figure 1. Bar chart Would you find self-study modules (in addition to the taught material for your courses) useful for the following:

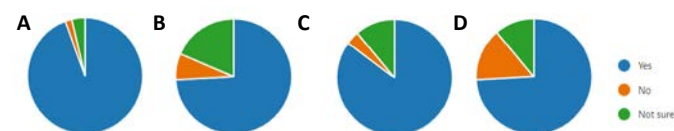


Figure 2. Would you find additional self-study materials useful for your degree for A)Data analysis B)Academic writing C)Practical Skills D)Computer Science / Programming

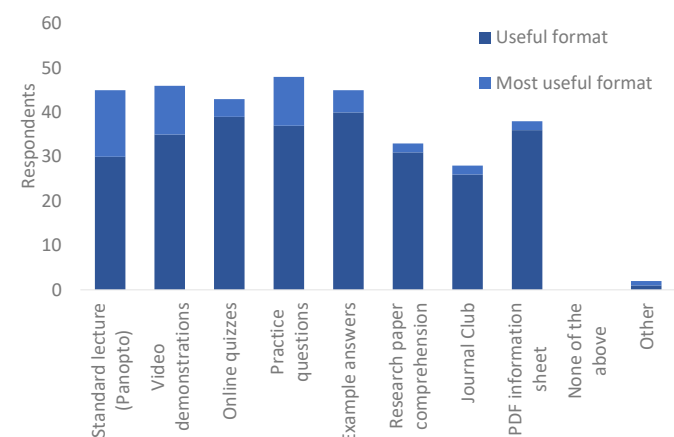


Figure 3. Bar chart showing which formats students thought were useful (both bars stacked) and which of these were the most useful (pale blue) formats.

Reflections

- Most students felt self-learning modules would be useful.
- Greatest demand for data analysis (96%) and practical skills (84%).
- Top ranked formats were Panopto recordings (28%), video demonstrations (20%) and practice questions (20%), though all formats were considered useful.
- A lack of time and recognition were the main reasons expected for non-engagement. The preferred form of recognition was an enhanced transcript (60%).
- Free-text comments showed some concerns about workload and additional pressure so it would be important to make the optional and nature of these clear if deployed.

"Widening ones skillset and increasing employability. These skills may open new doors to more career paths in the future."

"It would be amazing if there are some of the above listed courses for the students to look at in their own time. I am sure everyone who wants to, will benefit from them and I am looking forward to learning something new and useful for me in the future!!!"

"Virtual Q&A with alumni to see what they would have wanted to know (now) that they are 3-5 years into their professional lives."

"Experimental design would be especially valuable with all the "sketchy" studies out there. "

"The only thing that I wouldn't like is if these self-study modules had time limits on top of additional assignments at uni, especially during the hell-months of November and March."

"Finding time in an already busy schedule is difficult"

Table 1. A selection of quotes from free text feedback showing positive feedback (Yellow/top), topic and style suggestions (blue, middle), a list of favoured and student concerns (Orange/bottom)

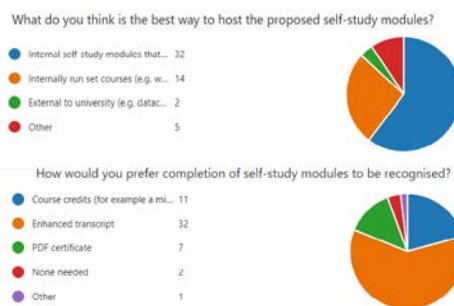


Figure 4. Pie charts showing feedback on the best way to host the modules (top) and preferred methods of recognition (bottom)

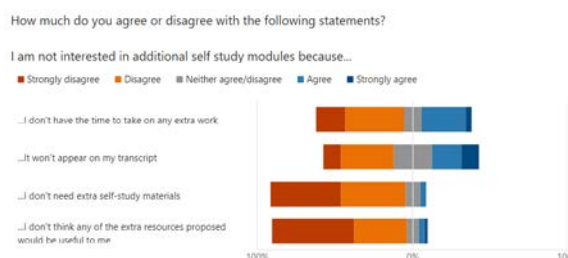


Figure 5. Summary of anticipated reasons for choosing not to engage with self-study modules. Lack of time for extra work and not having official recognition were highlighted, despite considering them useful

Reflecting Death Student engagement and deeper learning in mortuary archaeology

Rebecca Crozier
Dept of Archaeology
University of Aberdeen

Abstract

This research project aims to explore new ways to increase student engagement and achieve deeper learning in a level five archaeology course. The current format utilises student-led seminars. Using the previous year's MyAberdeen discussion boards as a proxy for engagement, clear evidence of a tailing off, or fatigue, as the semester progressed was identified. High numbers of posts on the discussion board at the outset fell away to a few posts in the last 2 weeks of the semester. How might we tackle this situation? Two key interventions have been applied and are detailed here, along with the preliminary results.



Aim

To increase and maintain engagement and deeper learning in a level five course, 'The Archaeology of Death'.

1. Introduction

This project is focused on developing participation and engagement within a new Level 5 module, The Archaeology of Death (AY5512). This module deals with more theoretical concepts needed to engage with the study of mortuary treatments of deceased individuals in the past. This is a rich and fascinating area of archaeological study, but some of the concepts can be challenging. Using the previous year's discussion board (summarised and illustrated below) a downward trajectory emerges. This revelation encouraged me to create a more positive experience of student-led learning.

Table 1: Summary analytics from discussion board 2021-22

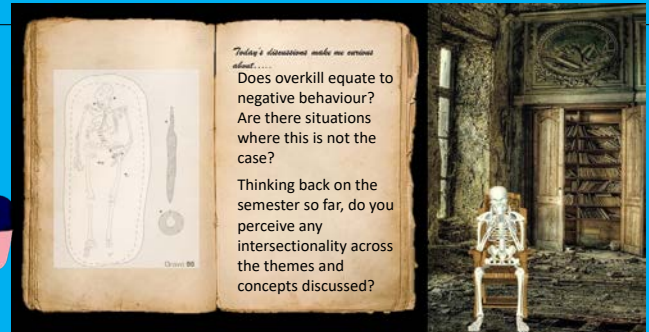
Topic	Posts	Views	Replies	Comments
Introduction	24	156	12	8
Origins of transformation	19	118	10	6
Disappearance of the dead	16	96	8	5
Death for the living	17	102	9	6
Death for the dead	11	66	5	3
Death for the past	16	96	8	5
Death for the future	18	108	10	6
Death for the present	16	96	8	5
Death for the unknown	16	96	8	5
Death for the individual	16	96	8	5
Death for the community	16	96	8	5
Death for the world	16	96	8	5
Death for the universe	16	96	8	5

2. Methods

Intervention 1
Seminar directions
The seminar lead is sent clear discussion goals and questions to incorporate within the seminar.
The discussion board is presented/reinforced as a team activity (1 post 1 response minimum)
The discussion board is reinforced as a resource to help the week's seminar leader.

3. Methods

Intervention 2
Student reflective journal.
Completed every session during dedicated break.
Students are asked to respond to one or two open questions/prompts.

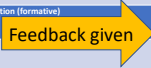


4. Preliminary Results: Engagement

Table 2 illustrates.
A much more favourable level engagement when compared to the previous year.
Positive response to provision of individual feedback on participation when a drop in engagement was noted.
Most students post more than the minimum requirement.

Table 2 : Summary of average posts and word counts per student for each discussion board

Week	Title	Average posts	Word Count
2	The Dynamic Corpse	3	302.15
3*	Origins and transformation	5.33	155.1
4*	Disappearing the dead	4.63	173.49
Individual feedback provided for participation (formative)			
5	Killing the dead	3.22	194.86
6	Friends, Enemies, ancestors	4.22	147.13
7	Sacrificed, punished, deviant	5.89	144.19
8	Powerful or irrelevant?	4.44	131.88



6. Next Steps



5. Preliminary Results: Reflecting on reflection

Analysis using Nvivo is ongoing.
Allows us to gauge student development and learning week by week.
Encourages the student to make links between all the activities (readings, discussion boards, lecture and seminar).
Shift in perspective - students state they are more cognisant of the humanity of the skeletal remains.



Acknowledgements Dr Darren Comber (CAD); Special thanks to all the students on AY5512 2022/3

Do student-created coding learning journals improve the confidence of novice coders?

Amy Gilligan

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@seismo_amy

Context

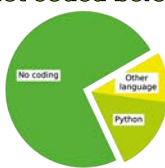
Jan-March
 GL2511 Geophysics
 2nd half session
 15 credit level 2 course
 2 x 3hr sessions per week
 Compulsory for Geology students
 Commonly taken by Geoscience and Geography students
 22 students registered in 2023

Motivation

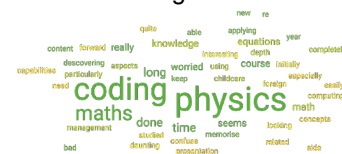
Coding skills are important for further study and employment in geosciences and beyond^[1]

Data from informal pre-course surveys for 3 cohorts of students 2021-2023, total responses: 76

Most GL2511 students have not coded before



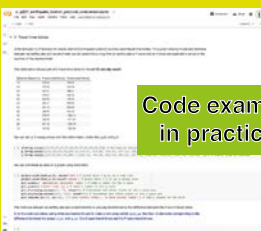
Students are particularly worried about coding prior to taking GL2511



Aim : Improve student confidence in coding to improve their python coding skills^[2]

Intervention: A coding learning journal

Learning journals can empower students and improve engagement^[3]



Code examples in practicals



Weekly summary of what they have learnt

Assessing the intervention

Pre, mid, and post-course surveys delivered using RedCAP

Pre



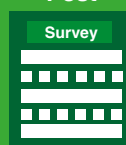
w/b 23/1
n=7

Mid



w/b 27/2
n=14

Post



w/b 27/3

Has confidence increased?

Yes

"I have improved my confidence in coding during this course"



Have coding learning journals been used?

By some

"I have referred back to the content of my learning journal for subsequent coding exercises"



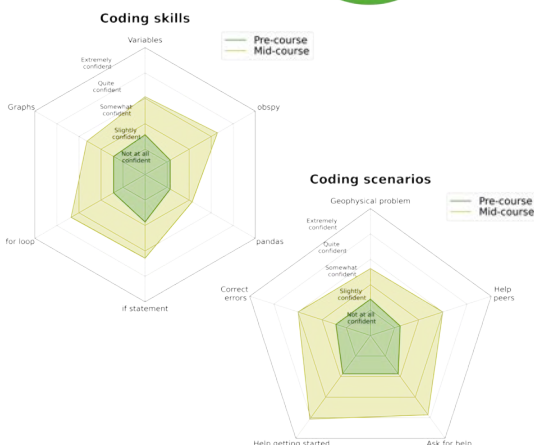
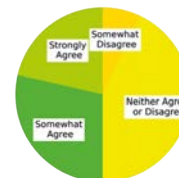
17 students submitted links to their learning journal

6 students' journals show use beyond week 1

Have coding learning journals improved confidence?

"The learning journal has helped improve my confidence in coding"

For some



Key findings

Students with previous coding experience report higher confidence but found the coding learning journal less useful in improving their confidence and skills

Having staff/demonstrators available to answer questions and ask for help has a positive impact on confidence

Acknowledgements and references

I would like to thank the 2023 cohort of GL2511 students for participating in this study. Thanks to colleagues David Cornwell and David Healy and demonstrators Sophia Baker and Heather Kennedy who teach on GL2511. Thanks to Joanna Wilson-Scott for her supervision with this project, and thanks to Barry Crouch for support in using RedCAP. Data were visualised using matplotlib (Hunter, 2007). This study received ethics approval via the University of Aberdeen School of Education ethics process.

[1] Brown (2021) AAPG Explorer, [2] Shoemaker (2010) HortTechnology, [3] Park (2003) J. of Geog. in Higher Ed.

MAKING ASSESSMENTS MORE ENGAGING FOR STUDENTS

Dr Barbara Barreiro Leon
barbara.leon@abdn.ac.uk

INTRODUCTION

Assessments play a critical role in higher education, providing students with feedback on their progress and enabling instructors to evaluate student learning. However, many students view assessments as a necessary evil, rather than an opportunity for engagement and learning. To create engagement with assessments for higher education students, instructors can adopt a number of strategies.

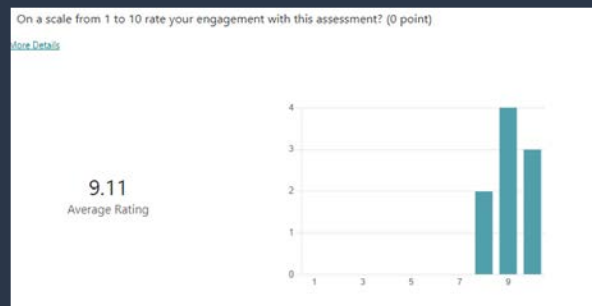


PROCESS

The strategy carried out in this project was making assessments more relevant to students' interests and goals. By making assessments more meaningful and applicable to students' lives, they are more likely to feel motivated to engage with the material. To further promote engagement, students were provided with opportunities for choice and autonomy in their assessments. This included allowing students to select from a range of assessment options, such as podcasts, presentations, or video essays, allowing them to choose the specific topics they wished to focus on.

METHODOLOGY

A survey was created for students to assess the project on engaging assessments which aimed to gather feedback on the effectiveness of the teaching method used. The survey questions were designed to gauge how well students were able to engage with the material, understand the content, and retain the information.



RESULTS

By analysing the results, we could get insights into the strengths and weaknesses of the teaching methods and adjust the approach to better serve the needs of future students. This survey was an essential tool for carrying out this present project.

I picked a topic that I knew had a lot of sources already and I was interested in and so I really enjoyed writing and researching.

I enjoyed researching my chosen topic and compiling my findings in a way which I found the most interesting.

I always appreciate when I can utilize my personal interests to gain knowledge on a new topic. I also enjoy creating audiovisual/artistic content.

I could choose a topic that interested me, which led to more engagement and broader research I undertook.

WHAT GREEK LETTERS MEAN IN EQUATIONS

- IT THIS MATH IS EITHER VERY SIMPLE OR IMPOSSIBLE.
- Δ SOMETHING HAS CHANGED
- δ SOMETHING HAS CHANGED AND IT'S A MATHEMATICIAN'S PRIZE.
- θ CIRCLES!
- φ ORBS!
- ε NOT IMPORTANT. DON'T WORRY ABOUT IT.
- υ IS THAT A V OR A U? OR...OH NO, IT'S ONE OF THOSE.
- μ THIS MATH IS COOL, BUT IT'S NOT ABOUT ANYTHING THAT YOU WILL EVER SEE OR TOUCH, SO UNWATERS.
- Σ THANK YOU FOR PURCHASING ADDITION PROBS!
- Π ...AND THE MULTIPLICATIONS EXPANSION PACK!
- ζ THIS MATH WILL ONLY LEAD TO MORE MATH.
- β THERE ARE JUST TOO MANY COEFFICIENTS.
- α OH BOY NOW THIS IS MATH ABOUT SOMETHING REAL. THIS IS MATH THAT COULD KILL SOMEONE.
- Ω OOH, SOME MATHEMATICIAN THINKS THEIR FUNCTION IS COOL AND IMPORTANT.
- ω A LOT OF WORK WENT INTO THESE EQUATIONS AND YOU ARE GOING TO DIE HERE AMONG THEM.
- σ SOME POOR SOUL IS TRYING TO APPLY THIS MATH TO REAL LIFE AND IT'S NOT WORKING.
- ξ EITHER THIS IS TERRIFYING MATHEMATICS OR THERE WAS A HAIR ON THE SCANNED PAGE.
- Υ ZOO?? PEW PEW PEW [SPACE NOISES] ZOOOOO!!
- ρ UNFORTUNATELY THE TEST VEHICLE SUFFERED AN UNEXPECTED WING SEPARATION EVENT.
- Ξ GREETINGS! WE HOPE TO LEARN A GREAT DEAL BY EXCHANGING KNOWLEDGE WITH YOUR EARTH MATHEMATICIANS.
- Ψ YOU HAVE ENTERED THE DOMAIN OF KING TRITON, RULER OF THE WAVES.

1. Level 1 to level 2 transition in Mathematics

Rather challenging!

Very different from school maths [1]:

- Formal notation and new vocabulary
- Lots of definitions, propositions, lemmas, theorems
- Everything needs proving
- No recipes – but rather use of tricks



2. Co-creation pedagogy applied to Mathematics

Could this help?

- Examples are central to mathematics education [2]:
 - Practising and creating examples and counter-examples
 - Helps building concept-image

Research question:

- Can co-creation of teaching and learning pedagogy [3] help improve understanding and motivation?
- Foster a sense of belonging to the Mathematics Community of Practice and the larger University Community of Practice [4, 5]?

Could students learn better when creating teaching activities?

3. Proposed intervention

- **Aim:** to measure perceived benefits for authors of group work and participation in creation of teaching and learning resources
- Recruit student volunteers in the Linear Algebra (LA) 1 course
- Form groups of perceived mixed abilities
- Tasks:
 - Discuss and identify challenging topics
 - Create tutorial-style questions and code them in e-assessment tool NUMBAS

4. Proposed methodology

- Pre and post-activity questionnaires
 - Motivation, enthusiasm, understanding
- Focus group after activity
 - Feedback on individual and group experience
- Students marks in first and second semester LA courses
- Ethics approval in November 2022

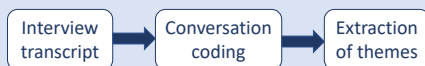


5. Current progress

- Only 1 student volunteered
- Designed tutorial-style questions and coded them in NUMBAS



- Interview happened 15 March 2023
- Interpretative Phenomenological Analysis (IPA) [6] as analysis method to explore above aspects with participant



6. Discussion

- Data processing in progress and early evidence of:
 - Increased motivation and confidence
 - Different appreciation of teaching
 - Opportunity to learn new skills
- Recruitment was difficult
- Project was short
- Benefits of group work/peer-assisted learning could not be explored
- No insight into staff perspective or benefits

7. Future work

- Planning a cross-institutional internship to pursue the work
- Student pair to devise questions
- Interview peers to identify topics
- Roll out resources with next year cohort



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Enhancing Teaching and Learning in the Applied Artificial Intelligence (AI) Postgraduate Course

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1 - Introduction

I investigated the impact of several factors on the effectiveness of teaching and learning in a computer-science course within the MSc Artificial Intelligence program. The research involved:

1. Analysing student mark distribution, engagement time with the materials, and course feedback forms over 3 years (2020, 2021, and 2022).
2. Performing a five-day intervention in 2022 to evaluate how programming scenarios on Codio could enhance students' learning
3. Reflecting on the impact of external factors (e.g., number/change of course coordinators, number of assessments, or COVID) on teaching.

2 - The Applied AI Course

- Taught in December for Jan/Sept-start cohorts

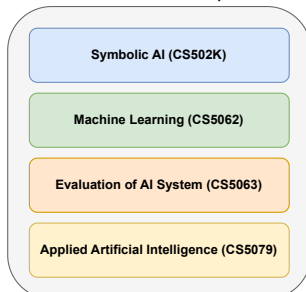


Fig. 1: Position of the course in the semester.

- Average of 22 students every year

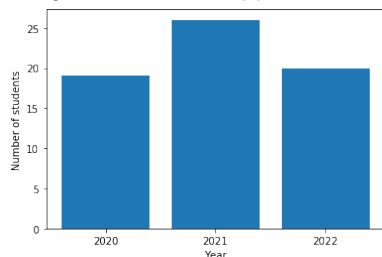


Fig. 2: Number of students over the years

- 10 teaching days over 3 weeks

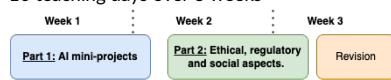


Fig. 3: Teaching schedule

3 - Research Approach

- 1 questionnaire after each mini-project:
 - Day 1: Scrapping the web
 - Day 2: Predicting bike sharing demand
 - Day 3: RL on the boxing Atari game
 - Day 4: Predicting wine type and quality
 - Day 5: Online retail customer segmentation

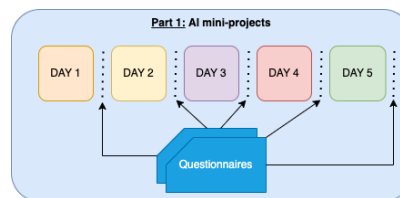


Fig. 4: Schedule of the questionnaires

- Number of participants decreased due to the fatigue effect



Fig. 5: Number of participants per questionnaire

- New materials and technologies had a positive impact on teaching, learning, and confidence

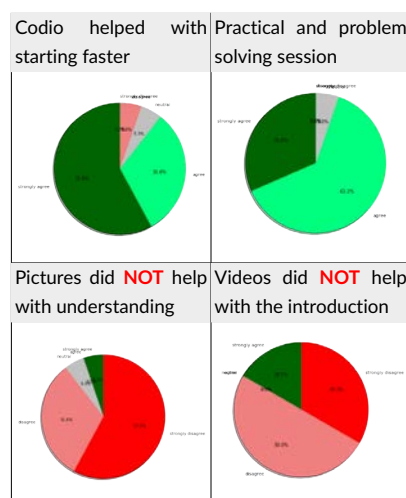


Fig. 6: Answers to the questionnaires

4 - Statistical Analysis

- Overall statistically lower grades in 2021



Fig. 7: Mark distribution per year and assessment

- Perception of teaching effectiveness was improved in 2022

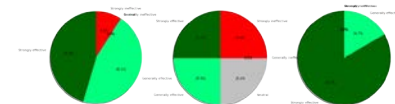


Fig. 8: Effectiveness of teaching per year

- Students reported more stress and degraded mental health in 2021

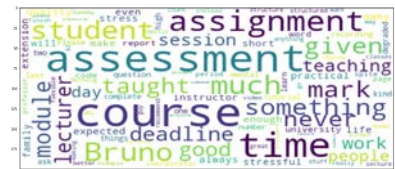


Fig. 9: Wordcloud of students' feedback

5 - Difficulties

- Low number of responses to the intervention and course feedback forms
- Too many questionnaires led to fatigue
- The course has to be versatile (end of 1st or 2nd semester)
- Many factors are changed which makes it hard to identify the causes and effects.

6 - Key Findings

- The Codio platform allows for an easy setup of the environment
- Mini-projects are perceived as practical and problem-solving sessions
- The use of pictures and videos helps with understanding and introducing the session.



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Exploring threshold concepts in undergraduate clinical neurology

Diane M A Swallow



Background & Aims

Neurology is perceived to be one of the more challenging clinical specialties by medical students and postgraduate clinicians at various stages of the clinician training pathway. This has potential implications for health services and patient care and may result in fewer postgraduates choosing a career in neurology.

"Threshold concepts", first described by economists (Meyer and Land, 2003), are crucial, profound shifts in learning, fundamental to the mastery of a particular subject.

Key characteristics	Description
Transformative	A significant shift in perception/understanding
Troublesome	Difficult to grasp, counterintuitive
Irreversible	Difficult to unlearn
Integrative	Reveals the association between various topics
Bounded	Specific to a particular discipline
Discursive	Extends use of vocabulary
Reconstitutive	Reconfiguration of previous knowledge
Liminal	Unstable space in which the learner may oscillate between old and emergent understandings

Threshold concepts have not been explored in undergraduate clinical neurology in the existing literature. The current project aims to: (1) identify and explore threshold concepts in undergraduate clinical neurology; (2) evaluate their current integration into undergraduate teaching and (3) adapt existing teaching provision to target identified threshold concepts and assess effectiveness of intervention via written feedback

Methods



Study population: MBChB Year 5 (survey), MBChB Year 4 (teaching adaptations)

Study design: Explorative, qualitative online questionnaire to identify threshold concepts including demographics, time/experience in clinical neurology, Likert scale ratings of difficulty, enjoyment, confidence and career interest in neurology and 8 questions identifying and exploring threshold concepts using a framework of their 8 identified characteristics. (Transformative, Troublesome, Irreversible, Integrative, Bounded, Discursive, Reconstituted, Liminal).

Participant selection and enrolment: Dissemination of invitation email by undergraduate medical school office containing a link to online questionnaire (containing participant information leaflet and participant consent form), to all Year 5 MBChB students via their email lists. A smaller proportion of students will be invited (to participate in a learning activity which seeks to integrate identified threshold concepts into learning content, assessed via written student feedback).

Data analysis and management: Quantitative data was summarised using simple descriptive statistics. Qualitative data was analysed using thematic analysis consisting of five key phases: (1) familiarisation with data (reading/re-reading/initial memos), (2) systematic generation of initial codes, (3) collation of codes into potential themes, (4) review and testing of themes, (5) definition and naming of themes.

Results

-  n=14 students
- Average age 23.1 years (range 22-26 years)
- n=7 female, n=6 male, n=1 unknown
-  Exposure to neurology: Year 1-3 MB ChB n=8 (57.1%), Year 4 n=11 (78.6%), Year 5 n=1. (7.1%), medical elective n=4 (28.6%), intercalated degree n=2 (14.3%).
- n=12 (85.7%) received all undergraduate training at UoA

Comparing neurology to other specialties:



General themes

1. Students experience greater difficulty in understanding and applying the principles of assessment (examination, identification & interpretation of clinical signs) and diagnosis (localisation of pathology, aetiology) in neurology compared to other clinical specialties.



"...you might feel I understand...but unsure if you could apply it..." "...getting comfortable with performing a full detailed neuro examination..." "...think methodically about different causes of neuro symptoms..." "...the concept of Upper and lower motor neurone signs can help to quickly group conditions and narrow down differentials much more easily within the speciality..."

2. Students primarily achieve breakthroughs, or movement through liminal space towards understanding, when they integrate active participation in "real-life" clinical environments (including teaching/supervision by practicing neurologists), in parallel with self-study or peer-teaching (both in and out with clinical environments).



"...Sometimes neurology feels abstract. Textbooks describe...but until you have seen them in real life, it can be difficult..." "...Without clinical experience, learning the theory was difficult...language is hard..." "...one of the societies did do revision session 'OSCE style...'..." "...I was asked to present...in preparing for this I felt increasingly confident...and sharing this knowledge with younger med students..."

3. Students have a strong professional awareness of their role/purpose of their learning and can feel a strong sense of discouragement or inadequacy in the liminal phase, resorting to superficial learning or mimicry.



"...perception that neurology is difficult...you have to be very clever to understand it super well and be [a] neurologist..." "...I know the knowledge you would need as a FY [Foundation Year doctor] but it would be daunting applying it to a real neurology patient..." "...sufficient to make a referral..." "...I often learn it right before I go into a neuro-specific situation..." "...I still don't feel confident..."

4. Both during and after neurology clinical placements, clinical teachers must support student's ongoing self-directed learning to support them through liminal space to reach and maintain breakthroughs.



"...I have since forgotten my lightbulb moment as it was not a topic I have since come across during clinical placement..." "...without constant practice & application, I would never have it in my head..."

Action

Facilitation of peer-teaching is not currently incorporated into my routine teaching practice. I will assess the impact of integration of peer-teaching of identified threshold concepts into my existing workplace based teaching.

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Acknowledgements: Year 5 MB ChB students who took time to reflect upon their experiences in learning neurology, Dr Mirjam Brady-Van den Bos and Dr Mary Pryor for their guidance and helpful suggestions.

Privilege, Ethics and Work Placements: A Museum Studies Perspective

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Context

Work-based learning is a key element of the Aberdeen 2040 Strategic Plan.

In 2023, we are resurrecting our Museum Studies Work Placement Course after shuttering it during COVID-19.

Gaining work in the museum sector typically requires a postgraduate degree and extensive work experience, often conducted without pay or expenses.

There is a growing pay crisis in the museum and heritage sector, which along with the cost of living crisis, is pricing workers out of the field.

Volunteering has long been a crucial part of the sector - however, it has also been unregulated and open to exploitation. See Fair Museum Jobs for more.

Research Questions & Methods

- Are work placements a barrier to engagement with PGT degrees?
- What is 'privilege' in the context of Museum Studies?
- How does 'privilege' impact the take up of placements?

Surveys of current (ARC1) and potential students (ARC2b), as well as focus groups with current students (ARC2) were planned. Take up of ARC1 was very limited, and impeded progression to ARC2b. Focus has now shifted to current students only, and focus groups will be held in April/May.



Preliminary Conclusions

- Experience from professionals cited as a positive.
- Lack of pay cited as a negative.
- Uncertain nature of work cited as a negative.
- 2/3 of respondents had prior experience in the sector.
- 2/3 of respondents also had other placement experience.
- 2/3 cited no barriers.
- Finance was cited as a potential barrier.
- Transportation, mental health, compensation, detail, and quality communication are cited as enablers to participation.
- Financial privilege cited as factor in the sector.
- Social privilege cited as factor (gender, background, nationality).
- These privileges also cited as an issue in HE.



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