



# REFLECTIONS

## Standing on the Shoulders of Technology



By Dr Claire Dewhirst, Centre for Educational Development

***Without a doubt, maintaining connections with our learners has been central to how we have kept our heads above water during this pandemic and the role of technology has been foundational in how we have built those relationships with our learners. In many ways, we have been standing on the shoulders of technology.***

This edition of *Reflections* is a celebration of what has been achieved during a very difficult period that has spanned two academic years. It is important to acknowledge all that has been achieved to ensure a good student learning experience during this time. This year, the **Queen's Teaching Awards** panel will welcome applications demonstrating how colleagues have adapted their approach in response to the Covid-19 restrictions to ensure an excellent learning or learning support experience for their students throughout 2019-20 and 2020-21.

Louise Pick explores the pros and cons of asynchronous versus synchronous learning, considering issues of lock down rules and digital poverty. Something that we as a University have worked hard to overcome. The article explores both the use of Canvas quizzes as well as the work involved in moving what is usually a face-to-face peer activity online. It is clear that whilst students miss the social connectedness, the making of friends at university, there have been benefits to this approach, including increased attendance at tutorials. Food for thought as we move into academic year 2021/22.

In any normal year, a pandemic such as COVID would be hard to deal with. However, as Derek Brazil reflects upon in his article, they also had a new curriculum to introduce to their medical students. Derek explores the

practicalities and solutions that arose as they moved their new curriculum online. Derek's article is full of great ideas about how to engage students and is well worth a read.

With the increased use of our online technologies has come a parallel need to focus on accessibility of such platforms. Tracy Galvin explores some of the support that is available to us all, noting "as an institution our goal should be to make content accessible to all at the point of creation and design. This demonstrates our commitment to our core iCARE values that everyone has an equal right to learn, work and connect."

Eva Sweeney's provides some creative suggestions that helped her move her teaching from an anatomy lab online. Her approaches have included the use of Turningpoint, Google Jamboard, MS Teams for supervision and even the use of Google Forms for a virtual escape room!

A number of other projects have taken place this year to support students. Patricia Durkin outlines a new Professional Skills Programme that is being piloted for students. The programme focuses on seven key skill clusters which are based on the skills identified by the World Economic Forum as being essential for success in the 21st Century. The team behind the programme is looking to evaluate the programme with students before

rolling it out to all students during next academic year.

Following this we have an article that introduces you to our first ever student digital champions. Their role has been to develop a brief survey to gain insight on how students are coping with online learning, to identify where they are having struggles and to discover what needs to be improved. The champions highlight some of their strategies to support students.

John Mackle from the Graduate School also explores the challenges of moving learning and student support online and discusses a number of ways in which the School has supported the academic and personal lives of post-graduate students.

The final article in this issue is from David Simpson in the School of Medicine, Dentistry and Biomedical Sciences. David looks at how he pushed the boundaries of the technology that he had access to, to improve the learning experience for his students.

Seamus Heaney is quoted as saying, "if we winter this one out, we can summer anywhere." We have learnt a lot about online and blended learning during this pandemic. Moving forward the question has to be, how do we take the best bits of what we have learnt and ensure that we embed this to create a better student learning experience in the years ahead? As this edition of *Reflections* demonstrates, there is a vast wealth of knowledge and experience that has been developed over the last year or so, and it is exciting to think about the possibilities for learning that lie ahead.

# Adapting to a Connected Learning Model

*A reflection on the experience of teaching two Stage One engineering modules with large class sizes, during the first semester of 2020/21*

Dr Louise Pick, School of Mechanical and Aerospace Engineering



***This article discusses the experience of adapting two Stage 1 Mechanical and Aerospace Engineering modules, Thermodynamics and Fluid Mechanics 1 and Mathematics 1, to the Connected Learning model. Both are core compulsory modules with over 150 students in each class and had the added challenge this year of being condensed into one semester with 12 weeks teaching when they are normally taught over a full year of 24 teaching weeks. This change was made to facilitate the move of more practical modules to the second semester when it was envisaged that more on-campus teaching could occur.***

If we consider Connected Learning as a form of true blended learning, it should not be a matter of simply teaching the same content in the same way with more reliance on technology. Blended learning “represents a fundamental reconceptualization and reorganization of the teaching and learning dynamic, starting with various specific contextual needs and contingencies (e.g., discipline, developmental level, and resources).” (Garrison and Kanuka, 2004)

A switch to a new model of delivery would normally take place after a period of consideration, consultation, and curriculum review. In these unprecedented times, the Covid-19 pandemic has meant that academics have not had the luxury of long planning and development periods but have been required to make this very significant shift under crisis conditions.

## **Content delivery – Synchronous or Asynchronous?**

As for many other academics, the first consideration for these modules was how to deliver lecture material, followed by how to facilitate tutorials. There is much discussion in the literature of the benefits and shortcomings of online asynchronous and synchronous modes of delivery.

Synchronous delivery is often preferred by academics due to its familiarity, and can encourage students to continuously engage with the course and to develop a sense of connection to both their peer group and their instructors (Yamagata-Lynch, 2014). This style of delivery

offers more opportunity for real-time collaboration, enquiry, and feedback. However, in order for students to be able to access high quality online synchronous teaching requires them to have access to technology at specified times, e.g. computer availability, internet connectivity and suitable connection speeds. (De Guzman and Pastor, 2020) This is of particular concern for students experiencing digital poverty (*‘Digital poverty’ risks leaving students behind*, 2020), but also raises challenges under current work-from-home guidelines in households where multiple members of the family are trying to access devices and broadband connections at the same time.

Asynchronous delivery can be accessed flexibly at a time and place that is convenient for the student, which is particularly helpful for students who have parental and caring responsibilities, as well as those who rely upon accessing technology while in a university space rather than at home. There have been studies which suggest that asynchronous delivery also increases the opportunity for students to process and understand information that is presented, and may increase the quality of contributions made by students in discussions and other activities (Hrastinski, 2008). On the other hand, this type of delivery is often not optimal for creating communities and building social interaction.

Mainly due to the technology considerations, and also as a means of contingency planning in uncertain times, the decision was made to deliver all the lecture content for both of the

modules asynchronously through short, pre-recorded videos and associated worksheets and activities, and to hold live tutorial and feedback sessions, on a rota basis online and on campus. These quickly moved all online due to Covid-19 restrictions.

## **In-semester Formative and Summative Assessment**

Adaptation of coursework elements for the modules was also required, with both modules typically assessed through a coursework element worth 40% and a final exam worth 60% of the module.

## **Canvas Quizzes in Thermodynamics and Fluid Mechanics 1**

The coursework element of this module was previously assessed through two class tests. Last year, in a move to increase student engagement and independent study skills, a series of compulsory formative Canvas quizzes was introduced into the module. The experience with this was very positive, with excellent student engagement, evidence of high motivation levels and notable increases in the mean scores for each summative assessment element and the overall module average. Feedback on the quizzes from students was encouraging e.g., “Regular, non-graded quizzes in Thermodynamics and Fluid Mechanics module helps to identify an understanding/ lack of understanding of the content being covered.”

The previous experiences with the quiz format for formative assessment encouraged the switch to a use of the quizzes for combined formative/summative assessment this year. Based on the very high average scores obtained in the quizzes in 2019/20, the number of attempts allowed for students to complete the quizzes were capped, and further quizzes added. Results from this will be reported on in due course, but initial feedback from students has again been very positive:

*“the Canvas quizzes are an excellent indicator to how easily the content is grasped and understood.”*

*“I think that having the quizzes as coursework is really good. They also help me practise what we covered in the tutorials and see if I now understand it... gives me enough time to work out where I've gone wrong and correct myself.”*

## Peer Review and Reflection via MS Teams Mathematics 1

The Mathematics coursework takes the form of a logbook in which students attempt a worksheet for each topic on a weekly basis. They then attend a feedback session and work in small groups to provide peer support and comments on each other's work. At the end of the module the students write a reflective piece and submit this along with the logbook for marking (Cole and Fraser, 2019).

A number of options were explored when considering how to change this to a suitable online format. In the end it was decided to proceed as follows:

1. Students would attempt the worksheet and then upload a scan of their work to their peer group channel on MS Teams by 9am on the morning of the feedback session.
2. The instructor would deliver a short online feedback session of approximately 45 minutes to the whole class, demonstrating several questions from the relevant worksheet.
3. The peer groups would then breakout into their own MS Teams channels and assess their peers' work. Each member would write some comments into the chat on Teams for each of their peers.
4. Each student would then copy the comments from their peers into a journal and write a short session reflection.

Despite initial difficulties in getting acquainted with technology, and some

typical group dynamic issues, students have engaged extremely well with the process. Indeed, a review of student logbooks in the middle of the semester for formative feedback purposes showed that the quality and depth of the comments written during the peer feedback sessions were generally far superior to the handwritten comments provided in physical logbooks in a normal year.

Some student comments reveal an appreciation for the opportunity to engage with a small group at this time when social interaction with others from the course is limited: *“It's been refreshing to be able to talk to people on my course and not just be watching pre-recorded lectures all day. They've been super helpful with any problems I've had.”*

## Reflections on Connected Learning

As the first semester of connected learning draws to a close, it seems appropriate to reflect on the experience over the last 12 weeks, delivering teaching in an entirely new way under difficult circumstances.

## What developments are worth retaining Post-Covid?

Considering what has worked well, it has been surprising how effective a blended learning model has been for these modules. Students have engaged very well with prepared content on Canvas, and with independently working through videos, pre-reading resources, and completing worksheets in advance of attending live sessions.

The live online sessions have had consistently high attendance despite all the necessary content being provided in advance, with between 75% and 85% of the class logging in every session up to week 12. This is very comparable with attendance at in-person lectures for the module last year, and certainly higher than typical

tutorial session attendance. Even the optional revision session held in week 13 had 60% attendance. Students seem to be well-prepared at the live sessions and are happy to ask lots of chat questions which demonstrate that they have been thinking about the subject matter. Initial results from formative and summative assessment have been very encouraging and show that students have developed as good an understanding of the content, if not better, compared to normal years. This experience would increase confidence in trialling a blended approach in future and with a stronger on-campus element, incorporating some additional practical elements, it could be extremely beneficial for the student learning experience.

When students were asked in the final class of the semester what they thought had worked well, the response was almost unanimous; most students have had very positive experiences with asynchronous elements including lecture videos, and other content on Canvas. They appreciate the opportunity to access content at a time and a pace that suits them, and to be able to revise content with the full lectures available to watch and review as many times as needed.

## What has been lacking and what did not work well?

Thinking about what has been missing or difficult this year as a teacher mainly revolves around lack of social connection with students and workload.

From the social perspective, the very large class sizes have necessitated large MS Teams meetings where students have been asked to keep their cameras off to avoid bandwidth issues. As many academics have found, it is not a particularly pleasant experience talking to a blank screen for hours on end (Heaton, 2020), questioning if the students are really there and if they are listening! The lack of feedback cues that are absorbed naturally during teaching a



live class are also conspicuously missing: Am I going too fast? Too slow? Do the students need a break? Tools such as polls, asking for a show of “virtual hands”, or requesting a response in the chat box can help, but it is not really the same as being there in the room with students.

Similarly, it was clear from student comments in the final class, as had been apparent across the semester, that the element that they missed the most was having the opportunity to build a social network with their classmates. This must have been particularly challenging for new entry students who would not have already developed a social network within the university. This is further complicated by the fact that new students had no prior experience at QUB and would not have already been familiar with systems and processes such as Canvas.

My view on the success of the Connected Learning model at this early stage is that academics and students have adapted remarkably well to using new technology and communicating and collaborating in new ways. We have managed to successfully navigate a full semester of teaching and learning using new methods and technologies

all against the backdrop of constantly changing regulations and individual circumstances. My experience is that the students and staff are certainly “connected” digitally, and the evidence is that both of us are most definitely “learning”, but as we move into semester 2 it seems that we need to maximise the opportunities for social interactions and the building of communities either online or on campus, to provide the best experience for students and staff as we move into the “new normal” in higher education.

Cole, J. and Fraser, K. (2019) *Formative Assessment in First-Year Mathematics through Peer Review and Reflection*. In: QUB Assessment Hub

‘Digital poverty’ risks leaving students behind (2020) *Office for Students*. Available at: <https://www.officeforstudents.org.uk/news-blog-and-events/press-and-media/digital-poverty-risks-leaving-students-behind/> (Accessed: 17 December 2020).

Garrison, D. R. and Kanuka, H. (2004) ‘Blended learning: Uncovering its transformative

potential in higher education’, *Internet and Higher Education*, 7(2), pp. 95–105. doi: 10.1016/j.iheduc.2004.02.001.

De Guzman, M. J. and Pastor, C. K. (2020) ‘Business Administration Students’ Skills and Capability on Synchronous and Asynchronous Alternative Delivery of Learning’, *Asian Journal of Multidisciplinary Studies*, 3(1), pp. 28–34.

Heaton, M. (2020) *Academics must not rage against ‘death by blank screen’*, *Times Higher Education*. Available at: <https://www.timeshighereducation.com/blog/academics-must-not-rage-against-death-blank-screen> (Accessed: 17 December 2020).

Hrastinski, S. (2008) ‘Asynchronous and Synchronous E-Learning’, *Educause Quarterly*, 4, pp. 51–55.

Yamagata-lynch, L. C. (2014) ‘View of Blending online asynchronous and synchronous learning | The International Review of Research in Open and Distributed Learning’, 15(2).

# Delivering the C25 Medical Curriculum Online: Challenges and Opportunities



By Dr. Derek P Brazil, Senior Lecturer, Wellcome-Wolfson Institute for Experimental Medicine, School of Medicine, Dentistry and Biomedical Sciences

**In September 2020, a new medical curriculum called C25 was launched at Queen's. C25 is a case-based learning curriculum that allows medical students in small groups of 9 to self-direct their learning based on clinical cases under the supervision of academic facilitators.**

Together with my colleague Dr. Ciarán O' Gorman, I coordinated the Year 1 Fundamentals of Clinical Science unit in the MED1028 module which spans the entire academic year. This 8-week unit was based around in-person, 2-hour small group teaching sessions of 9 students and one Facilitator, with 3 sessions per clinical Case and an overview lecture every 2 weeks of the module.

With the advent of the COVID-19 pandemic, a strategic change towards a blended online teaching approach was rapidly developed. It was originally envisaged that large-group teaching (involving 295 medical students) would be delivered online, with smaller groups such as case-based learning and tutorials delivered in person. However, it became clear in October at the start of the second wave of SARS-CoV-2 that all teaching would have to be delivered online for Semester 1. The experience of developing exclusively online teaching for the new C25 curriculum will be the focus of this reflective journal.

The first challenge we encountered for the delivery of the C25 curriculum online via Teams was a logistical problem around the generation of the Teams invites for the large number of student groups and academic Facilitators. The Year 1 class was divided up into 32 groups of 9 students each. Each group would have 3 case-based learning sessions every 2 weeks. Therefore, every 2 weeks, over 96 Teams invites needed to be sent out just for case-based learning sessions alone. In addition, invites for over 50 lectures, 10 tutorials and 4 practical classes needed to be issued. At one stage, we considered whether individual lecturers and academics should be the ones to issue the Teams invites. However, it was decided that these invites should be issued centrally by a member of the



**The new C25 Case-Based learning medical curriculum here at Queen's is designed around 4 "GCAT" themes: G: Global and Population Health, C: Clinical Science and Practice, A: Achieving Good Medical Practice and T: Teamwork for Safe Care.**

administration team, to allow proper oversight of the process and provide a single contact point for students who were having IT problems with Teams access etc. Our experience was that this worked extremely effectively (mainly due to the expertise of our admin colleagues), with all students and academic staff receiving Teams invites that would automatically populate Outlook diaries.

Most students engaged very well in the case-based learning sessions, with the majority happy to turn on their cameras, which most academics agreed led to a more pleasant teaching session. It

was more challenging to connect with students at online lectures, where approximately 295 students would be present. The students were encouraged to use the Chat function on Teams to ask questions, as well as putting their virtual hand up and asking a question using the microphone. However, quite often, we would encounter a reluctance by students to engage with their teachers. One technique that I employed was at the start of each lecture, I would ask the students to indicate their mood using an emoji in the Chat function. This usually worked well as a fun way to relax the class, and typically got quite a few responses.

One challenge with online teaching was the difficulty in gauging the level of student engagement/understanding of the material. It is hard to get any feedback from a panel of initials on a computer screen. Therefore, at regular 10 minute intervals, I stopped and asked the students if they had any questions. I also included a short Forms quiz at the 20 min mark, to allow the students a short break and an opportunity to test their learning in a relaxed, formative way. I provided these Forms quizzes as learning tools for the students at the end of our unit. We also provided a series of Formative single-best answer questions that were uploaded at the end of each 2-week case-based learning session. These were uploaded to Canvas as a Quiz that the students could take to assess their learning. A high percentage of students took these quizzes, demonstrating their popularity as a learning tool.

One strategy that was very popular with students was the live delivery of lectures and parallel recording and uploading of the same lectures via MS Stream onto Canvas. Informal student feedback suggests that this was seen as a very useful learning tool for students, who would view short segments of the lecture when revising, or review the whole lecture on 2X speed when working out in the gym!. These recordings were also useful for students

who had, for whatever reason, missed the original live lecture.

Another strategy that I used to breakdown the virtual space between teacher and students was the use of Whiteboard/iPad GoodNotes to explain key points to students and answer questions in real time, with drawings or diagrams, or annotations of lecture notes. Similarly, innovative use of online videos, YouTube clips, Khan academy sessions etc were utilised to provide a multi-media platform to enhance student learning.

One issue in the lack of person-to-person teaching was the challenge that students may develop the feeling that their voice may not be heard by the module coordinators, academic staff etc. To counter this challenge, I used the Announcements on Canvas to provide a “Questions from the Class” series, where questions received from students (via email, Teams etc.) were uploaded with explanations and answers onto Canvas to provide a learning tool for the entire class. This, I believe, provides the student who asked the question

with a sense that their voice is being heard, that their question was a good one, and was helping clarify issues that were unclear or confusing to the rest of the class. We also took on board the feedback from the Year 1 student representatives who gave us valuable feedback and suggestions about how the class was doing, and ways in which we could improve the module. Each of the small groups of students was encouraged to form WhatsApp groups organically, and used this group to arrange online meetings relating to their cases. This helped cement a sense of social and academic cohesion within the groups, and allowed students to start to form their learning networks within the large class.

In summary, this has been an exciting semester of teaching in Year 1 medicine. A new C25 curriculum coupled to a global pandemic which prevented in-person teaching was a significant challenge to the entire medical education team. However, I believe we adapted to the challenges presented, and have learned a lot in terms of effective blended online

learning. Benjamin Franklin is reported to have said “necessity is the mother of invention”. The need to rapidly pivot to online learning delivery has certainly improved all of our IT skills, and likely accelerated the advent on online teaching for some elements of the medical course going forward. One of the most important lessons was regular contact with the students to ensure that they felt engaged by their course and believe that they are receiving a quality educational experience. I believe that many of my colleagues (myself included) look forward to returning to delivering our teaching content in person, but have a true appreciation of the potential and challenges associated with online teaching delivery. These and other lessons can be employed in future years, starting with the slow transition back to some live in person teaching in the Spring semester of 2021 and beyond.

*Dr Brazil was the recipient of a student-nominated Teaching Award in 2020.*

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# Digital Accessibility

## Supporting staff to develop inclusive and accessible content



By Tracy Galvin, Centre for Educational Development

### What is Accessibility?

Accessibility is about removing barriers to enable users to engage and take part in everyday activities, learning and the workplace. Making learning environments inclusive and accessible benefits everyone (staff and learners), promotes equality of opportunity and showcases a commitment to social justice, that can further be developed through support, training and guidance. Accessibility can include teaching and learning instructional practices, professional and student services, information technology and access to physical spaces and learning environments. Accessibility is a human right and providing accessible content benefits everyone. Embedding accessibility within an institution ensure information is easier to access, understand, more structured, inclusive and reaches a wider audience because it is more flexible and adaptable. The sharing of information is part of everyday interaction among staff and students internally and to others external to Queen's. Information is shared through various platforms such as; email, text documents, PDF's, PowerPoint presentations, communication platforms (Canvas, Teams, Zoom), ePubs, web pages, Google Suite and One Drive plus many more. It is important to reflect and ask ourselves do we think about accessibility when we are sharing or presenting information or resources with others? Does everyone receiving the content in a digital format have an equitable experience?

### Why is Digital Accessibility important?

With the increase in web-based content and the considerable increase in online resources and more recently the shift to remote online working and, learning digital accessibility has never been so important. As an institution our goal should be to make content accessible to all at the point of creation and design. This demonstrates our commitment to



our core iCARE values that everyone has an equal right to learn, work and connect. Digital Accessibility is a part of making teaching and learning inclusive for all learners, work environments equitable and communication and collaborative platforms more accessible for all users. When we cultivate accessibility in digital spaces, it goes well beyond accommodating individuals but aims to be inclusive and equitable to all.

Public sector bodies accessibility regulations introduced in 2018 are now required to be fully compliant since September 2020. The Government Digital Service (GDS) is acting as the Monitoring Body for these regulations across public body sectors including Higher Education (HE). Under GDS's responsibilities, they are monitoring and conducting accessibility testing of websites, Virtual Learning Environments (e.g. Canvas), and mobile apps to ensure compliance with accessibility.

Rather than focus on compliance and the legislation which in itself is important, the emphasis should be on a social justice model through equality, diversity and inclusion. Digital Accessibility is not a once off requirement but a continuum process that requires monitoring and progression that is the responsibility of everyone within Queen's. It requires a cross institutional strategic approach with a clear vision, culture and organisational change. Building

a community of practice around Accessibility requires resources, funding, support, policy and guidance, training and an organisational culture change for it to be truly effective and inclusive.

In Queen's, currently we have 11% of our learner population and 9% staff registered with the Disability Office and these numbers are increasing each year. However, there are many more who choose not to disclose a disability. It is important to bear in mind that the new accessibility regulations build on existing obligations to people who have a disability under the Disability Discrimination Act 1995 in Northern Ireland. This says that all UK service providers must consider 'reasonable adjustments' for disabled people. It is clear that the onus is on institutions to comply with the accessibility requirement for web delivered content and that failing to do so is a failure to make reasonable adjustments.

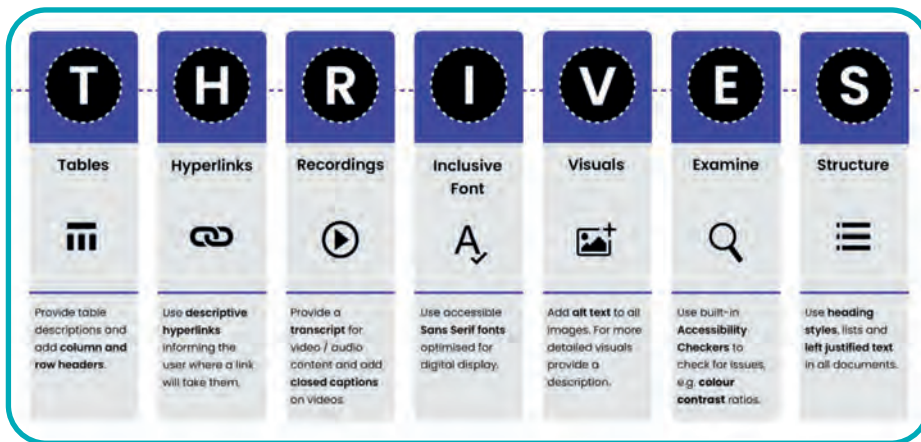
### What does this mean for Queen's staff?

In addition, most of us at some stage may also have a **temporary** or **situational** disability. With the increasing number of learner variabilities such as an increase in international students, under-represented groups, neurodiverse learners, estranged learners, parents,

mature students and those with caring responsibilities or living in care. It is quite common that a learner could experience an unexpected injury or life event, illness, pregnancy, grievance or death during their time in university. This may result in the learner needing some sort of accommodation or applying for extenuating circumstances or extension. Therefore, we have to move away from designing content for the «average learner» but instead, think about our diverse learners, hence learner variability.

## What does Accessible Content Design look like?

When designing for learner variability we need to think about how we present information. CED and the VLE Pedagogy team developed an Accessibility Series to provide guidance for staff to develop resources in the form of text documents, videos, presentation and visuals. While these are not the only ways to present information, they are the most common. Check out the [digital learning blog on Accessibility](#) for all the latest guidance



and support around developing and designing accessible content.

Sometimes a visual can act as a trigger and reminder of a larger amount of content. So, CED designed an acronym THRIVES for staff to easily recall and remember the seven fundamentals of accessibility. The visual will assist to get you started on your accessibility journey, that can be easily printed if you choose to [download or print a PDF copy](#) and there is also the option to [listen to an audio version](#).

Over the past year CED and the VLE Pedagogy team have provided guidance to support staff in preparation to make small changes to practice in relation to

Accessibility that is required by all staff across Queen's.

## What does it mean specifically for educators?

In short, digital accessibility is good design and a vital component of an inclusive learning environment. If we are aiming to be fully inclusive and celebrate and support diversity, then as an institution we need to move away from a one size fits all approach to teaching and instead celebrate and respect intersectionality of our diverse learners. While some disabilities may be easily identifiable, most are not and are often hidden. As an educator you are not expected to have a deep understanding of all possible disabilities but instead plan for learner variability. Intentional planning and focusing on [Universal Design for Learning \(UDL\)](#) provides an inclusive educational framework to support teaching, learning, assessment and curriculum design. Inclusive design is key to avoid retrofitting content mid-way through a term but instead focus on providing multiple ways of presenting information, multiple ways of engaging learners, and multiple ways of assessing

Assignments. This feature will notify you if you are missing key accessibility elements such as alternative text, table captions or headings and will also alert you to inaccessible content such as unreadable text due to poor contrast etc.

In January 2021 Blackboard Ally was integrated with Canvas to further support staff to identify and resolve and accessibility issues in Canvas. It not only provides a reporting structure on accessibility issues but offers possible ways to fix the issue. The top issues arising are:

- Scanned documents that are not recognised by screen readers
- Corrupted or password protected documents (difficult to access)
- Documents that contain tables with inappropriate heading structure or captions
- Embedded images not containing alternative text or enhanced description
- Documents that are not tagged, have no heading styles used or no language set
- Colour contrast issues (poor contrast between the foreground and background)

There are also numerous benefits to learners in that alternative formats (coming in June 2021) can be accessed for example, tagged PDFs, HTML, ePub, Electronic Braille, Audio and translated version. However, it is important to remember that if an original document is inaccessible, then the alternative format will also be inaccessible.

## Training and Further Support

CED and the VLE team have designed and developed an online Canvas course called Accessibility Toolkit that consists of four modules to guide staff through the various fundamentals of Digital Accessibility. The content provides advice and guidance on; how to create accessible content for learner variability, giving examples of both good and bad practice, highlights accessibility checker tools such as the Canvas Rich Content Editor and Blackboard Ally and signposts other assistive technology and third-party tools. The course is only available to full time, academic staff and can be accessed via: [AccessibilityToolkit](#).

Why not attend any of the [Accessibility Drop-in clinics](#) or virtual [Blackboard Ally training sessions](#) from January 2021 or alternatively contact CED for more information: [ced@qub.ac.uk](mailto:ced@qub.ac.uk)



# Tools of the Trade-off: a summary of tools used to teach online in a pandemic

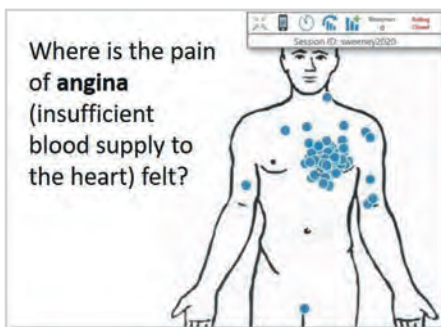


By Dr Eva Sweeney, School of Medicine, Dentistry and Biomedical Sciences

*My day is normally spent carefully removing organs to teach the intricacies of the human form but since Covid-19 came along I have assumed a much more peculiar existence, one spent entirely in front of a glowing 17" monitor. The 2020-21 academic year is somehow still ongoing and most of us are teaching remotely, so I would like to share some of the approaches that I have used and found (relatively) successful in translating the teaching process to an online format.*

## Image-based Turningpoint Questions

We all know, and have mixed feelings toward, our "PRS", but a recent update (*Turningpoint Web*) has made this tool easier to use. Students can answer using the phone app or [this URL](#), and there is a new question format very useful for visual subjects like anatomy. If you add a hotspot question and image to your PowerPoint and pose a question, students can answer by clicking a location on the image. I further describe this tool on this [QUB digital Learning blog post](#).



Turningpoint Web

## Google Jamboard

Anatomy labs are generally very interactive, involving dissection and discourse between demonstrators and peers. To recapitulate this interaction I used Google Jamboard for online tutorials.

It is a free, collaborative, cloud-based whiteboard, arranged in (up to) 20 slides into which images/text can be pasted. Anyone with a link to the Jamboard can see it and use various tools to mark the slides (e.g. pen, text, impermanent laser



pointer), these marks can be seen by all viewers.

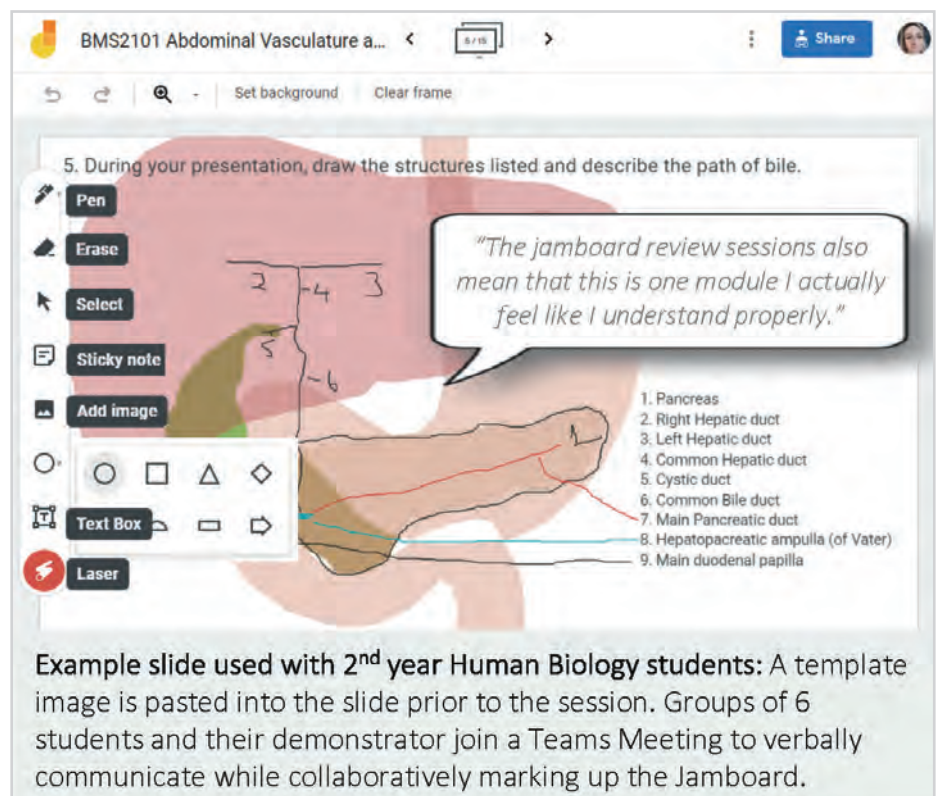
It requires no login, Jamboards can be replicated and "editor" links shared with

each group. Everything automatically saves to Google Drive and it is possible to download the whole Jamboard as a PDF.

**Result:** When asked "What are you enjoying most about this module?", 7/15 respondents specifically mentioned the Jamboard tutorial sessions. Students indicated they were **more likely to participate** versus answering verbally on Microsoft Teams, this was also observed in practice. Jamboard also provides **inclusivity** options for students in environments that prohibit verbal interaction (e.g. university library, shared spaces) to participate in labelling and question activities.

## Microsoft Teams for Project Supervision

In summer, I used a single Microsoft Team for four MSc Clinical anatomy students, each had separate private channels for meetings, file sharing,



**Example slide used with 2<sup>nd</sup> year Human Biology students:** A template image is pasted into the slide prior to the session. Groups of 6 students and their demonstrator join a Teams Meeting to verbally communicate while collaboratively marking up the Jamboard.

Google Jamboard

It is Sara Tussetti the famous opera singer, the knife is still embedded in her torso. Predictably, there was a note with another cryptic puzzle and another safe. You notice an upturned scrabble board and little scrabble letters scattered on the floor. Can you figure out the 2 digit numerical code to unlock the safe. [if you need a hint click here: <https://tinyurl.com/belfastbutcherhint4>] \*



**An example clue:** the answer is the scrabble score for “serratus anterior” a muscle that “protracts” the shoulder blade and causes “winging” of this bone if someone is injured as illustrated.

#### A Virtual Escape Room on Google Forms

and messages with me as supervisor, but there is also a general channel for sharing of general resources and group meetings. This was useful to maintain a sense of community and it keeps all information related to the students in one place, freeing up my inbox. The students indicated this was a useful approach and it is one I plan to continue using, I have made a summary video that can be viewed [via this link](#).

#### A Virtual Escape Room on Google Forms

Dissection naturally involves a degree of critical thinking and inquiry; students work in small groups to identify structures and solve clinical questions. To encourage this aspect of learning I made a virtual Escape Room (see image above) where students use anatomy-based clues to solve a grisly murder. You can use this link to try the [Escape Room](#).

This was simple to make using Google Forms, a free, online survey/quiz tool. Questions can be accompanied by images, videos, SketchFab 3D models, audio or links, each has “response validation” enabled (to specify a correct answer), and is “required”, additionally a

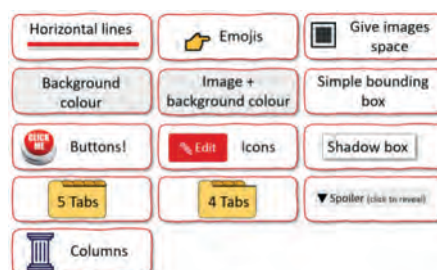
“section” follows each question so they must answer to proceed. The [Skeptical Educator YouTube channel](#) explains how you can make even more advanced forms of this tool.

**Result:** 10/18 students completed this optional activity, and organically did so in groups of 2-3 using a video meeting app to share the screen and discuss clues.

#### Liven up your Canvas Page

**“People ignore design that ignores people”** – Frank Chimero

There are many simple things that you can do to liven up your Canvas page. Simple guides to the formatting and tools shown can be found on my [Canvas course here](#)



Add some icons: [download 186 QUB icons here](#).



Most of the tools described in this article were specifically sought out to fill a gap left by the lack of face-to-face teaching this year. That said, there are a few of these tools that I will continue to use post-pandemic. This has been a difficult time for students and faculty alike, but perhaps a silver lining is that we may emerge from it with a few new tricks up our sleeves.

For further information, please contact [e.sweeney@qub.ac.uk](mailto:e.sweeney@qub.ac.uk)

1. Sweeney EM and Reid L, (2021) ‘The use of Google Jamboard, a free online application, for virtual anatomy practical sessions.’, *The Winter Virtual Meeting of the Anatomical Society of Great Britain and Ireland: Vision and Visualisation*. Virtual Online, 6-8th January 2021. *Journal of Anatomy: Conference proceedings*.
2. Sweeney EM, (2020) “One New Thing: Interactive Hotspot Questions” *Digital Learning @Queen’s Blog*. 6<sup>th</sup> Dec 2020. Available at: <https://blogs.qub.ac.uk/digitallearning/2020/12/06/hotspot/>
3. Sweeney EM, (2021) “A Google Form-based Virtual Escape Room to Encourage Peer Interaction”, *The EMEdTech Winter Online Conference 2021 Paradigm Shift: Reflection, Resilience and Renewal in Digital Education*. Virtual Online, 14-15 Jan 2021. *Conference proceedings*.

# Professional Skills Programme

By Patricia Durkin, Careers, Employability and Skills

***During summer 2020 Careers, Employability and Skills worked together with representatives from Learning Development Services, Student Wellbeing, CED, Open Learning and academic Schools to develop an online Professional Skills Programme within Canvas.***

The Professional Skills Programme is being piloted this year within the Schools of Chemistry and Chemical Engineering (open to all UG students) and the Management School (open to all first year Accounting and Economics students). In the School of Medicine, Dentistry and Biomedical Sciences, the resources are being used to support the new Skills for Scientists module that is currently being taken by all year 1 Biomedical Science and Human Biology students. This flexibility in approach is one of the key features of this project. Each School is able to tailor the resources and approach to suit the needs of their students.

## What does the Programme consist of?

The content of the Programme is a module that sits within Canvas. The module contains resources mapped around 7 key skill clusters (listed below) which are based on the skills identified by the World Economic Forum as being essential for success in the 21<sup>st</sup> Century. There are opportunities for Schools to

highlight where these skills are being developed within the curriculum.

Students begin the module by considering their mindset and wellbeing before reflecting on their awareness and development of each of these skill clusters. They complete further reflections as they progress through the module. The module is self-paced and has minimal intervention from staff.

There is a mix between content-driven resources i.e. videos, articles and activities based within Canvas, and experiential-driven resources i.e. links to extra-curricular activities and online courses combined with reflective elements. Although this is non-credit-bearing, students who complete all aspects of the module before they graduate will receive a Certificate in Professional Skills Development at graduation.

The Skills Clusters:

**1. Effective Learning.** The resources for this section are provided by LDS and introduce students to

techniques for independent study, time management and critical thinking as well as understanding feedback.

**2. Digital Skills.** This section links to the Student Digital Skills Discovery Hub developed by CED. It prompts students to audit their digital skills using the JISC Discovery Tool and provides resources to help them understand and develop skills related to: ICT proficiency; information, data and media Literacies; digital identity and wellbeing; digital communication, collaboration and participation; digital learning and development; digital creation, problem solving and innovation.

**3. Social and Cultural Awareness.** This section is provided by Open Learning, with contributions from several experts within Queen's and guest contributors from Hyderabad University, India; Auburn University, Alabama and Durham University. There are also many excellent contributions from voluntary and statutory organisations in the community, locally, nationally and internationally, including the Nerve Centre, the Southern Poverty Law Centre, Age No, the Arts Council,





the Commission for Older People, Northern Ireland Migrant Centre and the Educational Authority and the Rooted in Africa and Ireland Network, Dublin. The content relates to key issues of our time including: valuing black lives; intercultural understanding; our planetary emergency; considering ageing; active citizenship.

- 4. Interpersonal Skills.** This section includes some content to encourage student reflection around skills of communication, teamwork and leadership and then recommends extra-curricular activities through which students can develop their capability with these skills.
- 5. Career Management Skills.** This section is provided by Careers, Employability and Skills and is tailored to the specific school. The content includes: understanding strengths and values; understanding career options, placements,

internships and postgraduate study; making career decisions and recruitment and selection including CVs, interviews, assessment centres and psychometric tests.

- 6. Commercial Awareness.** This section briefly introduces students to topics related to the private, public, community and voluntary sectors. It then recommends extra-curricular activities through which students can develop their awareness further.
- 7. Initiative, Innovation and Creativity.** This section introduces students to the difference between artistry and creativity, the difference between intrapreneurship and entrepreneurship, and the difference between being a dreamer and a change-maker. It then recommends extra-curricular activities through which students can develop their capability with these skills.

## Next steps

We are in the process of reaching out to students for initial feedback. The engagement statistics show that many students are taking the opportunity to work through these resources and complete the assignments alongside their academic work.

Towards the end of this academic year, we will run an evaluation exercise with students to help us shape the content and delivery. Following that, we hope to make the content available to all Schools and to work with representatives from each School in 2021 to tailor the module for roll-out next academic year.



By Aimee Bell, Xin Yi Heah and Theo Burton

**In October 2020, the first ever Student Digital Champions were employed at Queen's University Belfast. The three champions, Theo Burton (19), Xin Yi Heah (20) and Aimee Bell (22), have been working in partnership with the Centre for Educational Development and the Students' Union with the mission to advise, help and guide other students in online and digital learning.**

Our first task within the role was to develop a brief survey to gain insight on how students are coping with online learning, to identify where they are having some struggles and to discover what needs to be improved upon.

What we discovered was that some students are finding a lack of connection with other learners in their class and across the University as well. Some students also reported that sometimes online learning can be de-motivating and difficult to do when they feel alone. This information has been useful building blocks for how the University will move forward and what support students will need during their continued Covid-19 experience.

## So, the Student Voice has been heard... what next?

In Semester 1, we planned a Wellbeing Week to push out on social media. This included posting a new poster every day with tips on digital wellbeing, how to keep safe online and how to keep your mental health in check while learning in the digital environment.

We ran 'Digital Drop-In Sessions', open to all Queen's students, where they can seek help and guidance with Canvas, Microsoft Teams and any other online or digital platforms or technologies that they might use. Students can book in for one of these sessions at [studentdigitalchampions@qub.ac.uk](mailto:studentdigitalchampions@qub.ac.uk)

We have also been working hard to conquer the issue of students feeling lonely due to working online at home. Currently, we are running a trial Discord Server to create a digital community

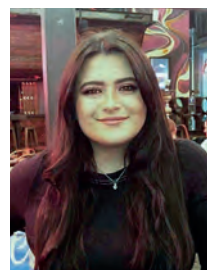
for students to connect and share their work online, whether that is for peer support, peer assessment or just simply for company!

We will be in this role until April 2021 and have lots of plans to kick-start the new Semester. We will be continuing with the drop-in sessions and we also plan to push out an online Discord Community to various Clubs and Societies to help people better connect online. Keep an eye on Queen's SU Social Media pages for our weekly digital wellbeing tips that will continue this semester as well.

Below, each of us has provided some reflections on our time so far in our new role.

### Aimee Bell

*So far, my experience as a Student Digital Champion has been incredibly eye-opening and educational. I am passionate about communication and mentoring people which is something I have really been able to fulfill within this role. It has been great to listen to the voice of the students by carrying out surveys, to hear their concerns and strategise a way forward in order to improve their overall online learning experience.*



*This role has also opened my eyes to how much the University and University staff are doing to help during this tricky time of navigating Covid-19. We are constantly thinking of ways to make digital learning easier, considering*

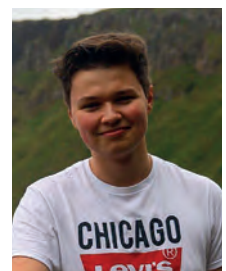
*the current circumstances that we are dealing with. Providing technical and digital support to teaching staff who may need it and even training students on how to use our educational software, are just the initial steps that we have taken to make learning better for the students this semester.*

*I have a love of content-making and being able to get creative in this role (to promote our services and what the University is offering students), has been an element that I have loved. I am already gaining so much experience and can see my skills in this department improving every week with the help of Vilinda Ross and Jason Bunting.*

*I am constantly developing thanks to this role and my aim for next year is to continue to help students to feel like they are a part of a wider University community, despite the Covid-19 restrictions.*

### Theo Burton, 19

*I have thoroughly enjoyed my time working as a Digital Champion these past few months. Digital technology and tools is an area I have a great interest in, so being able to develop new resources and initiatives to enhance the support for students has been a fantastic experience for me. For example, I have been involved in exploring the use of new technologies like Discord to create online communities within Queen's – working with students and societies to trial this and continue developing a working solution that brings students together and gives them a sense of community during this virtual academic year.*



*I've also enjoyed being involved in gauging student feedback about the current digital tools available across faculties and schools, hosting drop-in sessions and*

# Queen's Student Digital Champions



taking part in roundtables with staff and student reps to find where best, we (as Digital Champions) can focus our efforts to improving the student experience.

Our 'First Semester Survey' was carried out and the findings were presented to senior management staff at Queen's, with compelling comments from respondents used to help outline what areas need improvement within digital learning.

Finally, it has been amazing to work with so many fantastic people who are dedicated to reacting to this sudden change in education delivery and putting in place digital resources, tools and environments to support students throughout virtual learning and beyond.

## Xin Yi Heah, 20

To say that my experience as a Student Digital Champion was amazing would be a complete understatement. Not only has it fed my interest in graphic design, the role has gone beyond to enhance my own digital skills. Even as a Digital Champion, there are



endless things to learn about the digital realm!

Our primary aim is to aid students in these strange times where we have to familiarise ourselves with various digital tools to help keep everyone safe. We try to diminish the daunting idea of juggling a variety of apps, and help students to learn how to maximise these apps to improve their digital experience. So far during this first semester, we've helped students get to know the ins and outs of Canvas and Microsoft Teams, the two apps that dominate our (virtual) university life. This role is very eye-opening in the sense that we also learn new things along the way, such as learning about changing the colour overlay and getting help from the Canvas helpdesk when you have technical issues. We've also released a first semester digital experience survey to gain preliminary knowledge about how students have been coping so far, and the responses have been helpful in shaping the overall digital learning experience in QUB.

Learning about how Queen's presents themselves via graphic design was also a new chapter in my book. We learnt so much about how background noise affects the main topic of a poster, and the reasoning behind the iconic QUB Schools and Faculties logos. In an era where we are surrounded by technology

more than ever, being a student Digital Champion has brought me beyond the bounds of books and assignments, and exploring how we can help other students get used to digital apps to improve their own digital skills. Look out for our periodic infographics on various tips and hacks to enhance your digital learning experience!

Above all, I'm most grateful to be able to work with a fantastic team where we all complement each other. Under the guidance of Vilinda Ross and Jason Bunting, we've managed to help students and staff alike in Canvas and MS Teams Student Drop-ins, as well as facilitating a virtual poster session. We can't wait to see what's in store for us in Semester 2! We're looking forward to further integrating the wider university experience into digital learning until we can all see you physically on campus again.

The Student Digital Champions will be in post to help and guide students through this semester. Students can ensure that their voice is heard by raising any concerns or problems with their online learning experience with them at [studentdigitalchampions@qub.ac.uk](mailto:studentdigitalchampions@qub.ac.uk)

Staff wanting further information on this initiative can contact Dr Vilinda Ross on [v.ross@qub.ac.uk](mailto:v.ross@qub.ac.uk), or Jason Bunting on [vp.education@qub.ac.uk](mailto:vp.education@qub.ac.uk).

# From Practise to Practice: Developing Effective Personal, Professional and Academic Habits With Students Online



By John Mackel, The Graduate School

***This article aims to share our experience and insights into training postgraduate students to develop more effective habits, through practise, and how we approached this through online delivery and support.***

## Developing Effective Habits

Our aim is to provide training and support so that students can apply practical tools and routines immediately to their lives and, through practise, develop new, more effective practices or habits.

James Clear in his book “Atomic Habits” (2018) emphasises the need to start with tiny changes in your habits to achieve remarkable results. It is all about practising new behaviours until they become habitual practice. Practise is a verb, it is about performing a task or routine, or applying a technique, repeatedly, in order to acquire a skill or proficiency, until it becomes habitual, customary performance. To introduce and develop these skills our training would traditionally have been face to face, and students would have been given opportunities to practise and get feedback from their peers.

Providing this training and support online has been a challenge but very rewarding learning experience.

## Skills Development Online

Blended skills development, using cutting-edge technology, and providing real-world experiential learning for students, are core aspirations of the Graduate School, but since the first lockdown in March 2020, this has become even more of a focus.

Moving from a training room environment, where students were able to interact, learn new tools and techniques, and try them out through case studies and practical exercises with immediate feedback to an entirely on-line environment has been a real

challenge and learning experience for all of us.

On one level, we were released from the constraints of physical room size, and therefore able to expand the reach of our support, by allowing larger numbers to participate. In some cases, we expanded from a typical 20 to 25 students per session, to over 100.

However, given the personal and participative nature of our programmes, it was even more important to create and maintain a level of community, individual engagement and dialogue with the students, many of whom may have very limited contact with others, with the current restrictions in place.

We were very fortunate to win an award this Summer for Best Postgraduate Student Experience Initiative.

This was in recognition for the way we successfully adapted our teaching and training styles to help deliver interactive, experiential learning remotely as a result of the pandemic.

## Examples of Effective Practice

We will use three different, online examples, to illustrate how we have tried to develop effective habits with students, in applying these tools to their personal life, (Building Emotional Resilience) professional life, (Project Management for Researchers) and academic life (Academic Skills Series).

### Building Your Emotional Resilience

The ‘Building Your Emotional Resilience’ aims to build participants’ understanding of how emotions impact on their responses to stress and overall resilience levels.

Students are introduced to practical tools and resilience techniques, that with practise, will help them deal more effectively with physical, mental, work-life balance, and personal challenges.

In the summer of 2020, we partnered with an MSc student in the School of Management \* to conduct an evaluation of this programme, and gauge the

impact on practice in students who attended the workshops.

The overall findings were very positive. They highlighted that, in addition to learning about the theory of emotional resilience, the majority reported that they were able to apply the practical techniques after the training, and enhance their own coping strategies and habits.

When asked to identify to what extent they had adopted new resilience building habits, as a result of attending the workshops, the response was very encouraging with respondents noting, Taking care of relationships, Physical Activity, and Diet as the top three habits they have since adopted to a large extent for building resilience.

Overall, students have been practising techniques to reach a more sustainable balance in their lives, especially in taking care of relationships, diet, sleep and rest, and enjoying or finding hobbies. However, there is still more of a challenge to limit ineffective habits and, to some extent, increase physical activity.

Some of the most important and practical benefits from the training were identified as follows:

Sharing of our own experiences and working with our peers

Practising how to reflect on our experiences and learn from them

Learning about drivers and inhibitors that impact on our resilience, and how to respond to these.

The personal involvement and sharing of stories from the facilitator

Learning practical tools and techniques for improving our resilience

When asked to comment on the online delivery and their learning experience the students highlighted a few key points.

- Provide practical tools, templates and links, that can be utilised immediately after the workshops
- Encourage reflection and questions through the Chat option on Teams
- Take temperature checks on content, flow and pace
- Allow regular breaks and encourage students to get up, stretch, walk away from the screen and come back refreshed
- Be human, and open about your own experience of delivering and engaging with others online, and living with the restrictions
- Ask questions and pause (The literature says at least 8 seconds)
- Use polls, word-clouds, quizzes, short exercises, and wiki pages to actively engage students

*\*This research was completed by Ragnhild Naess for her MSc in Human Resources Dissertation, in partnership with the Graduate School and School of Management.*

### **Project Management for Researchers**

This workshop aims to build research students' understanding of a range of practical project management principles and tools that they can practise and apply to their own research. They are encouraged to use and revise these approaches throughout their project, so that it becomes the way they manage their progress through their thesis.

Students are taught how to then scope and refine their research parameters; specify and agree SMART objectives; develop communication approaches with key stakeholders; and plan their research in line with key PhD milestones and outputs.

The most recent online workshop was attended by Gillian Kane and Síofra Corr (3rd year PhD candidates at QUB School of Law). This is what they said about the experience.

*"We recently attended a training session on project management, aimed at those undertaking doctoral research. The session was facilitated by John Mackel from QUB's Graduate School. Part of the workshop related to planning and setting goals for our Thesis, using a Project Management approach.*

*We were both inspired by this and decided that we should implement this in our own projects.*

*We set up a "Teams" call to practise applying the tools and used the principle of "Start with end in mind" to set an overall target for finishing our PhD.*

*As advised on the workshop, and working back from there, we got out*

*our whiteboards and the slides from the session, and set the major PhD milestones against key dates.*

*To ensure following the plan becomes a habit, we will now hold each other accountable to these deadlines, with regular catch ups and updates.*

*We are now both much more confident in our aim to finish our PhD, and within the timeframe we have agreed."*

General feedback from other students participating on this workshop supported our approach to online delivery from the Emotional Resilience workshops. In addition, students found the following useful to enhance their online experience.

- Deliver short knowledge inputs with only one concept or tool at a time
- Focus on commitments to action at the end of each session
- Allow time to apply to own context before moving on
- Give practical examples from your own experience

### **Academic Skills Series**

This series includes training students in a wide range of practical skills and techniques for academic research, academic writing, peer reviewing, criticality, time management, SPSS, qualitative and quantitative methods.

In designing this series, we recognised that some types of training are more challenging to deliver online. For example, teaching someone how to navigate around a statistical software package. In a face-to-face setting, the instructor can lead students through the various aspects of the software on a step-by-step basis, monitor progress, and offer individualised support as students work through these steps.

Replicating this style in a live online learning environment can become frustrating for some students. They may have to toggle between different platforms or devices, and they may have less control over the pace of the learning. It may also be more challenging for the instructor, as they cannot easily monitor individual progress or assess the different levels of expertise in the student group and adapt the pace accordingly.

### **Blended Solutions**

To overcome some of these issues, in our Academic Skills Series we have taken an approach that includes blending workshops with self-directed learning and consultant support. This approach has also been adapted by Careers Employability and Skills (CES)

in their Professional Skills Development Programme for Undergraduates.

To achieve this, we created Canvas VLE pages to host short pre-recorded instructional videos. The Graduate School does not have complete access to QUB Canvas, so we were able to utilise the online free version, to develop our VLE Content. This allows participants to choose the most relevant videos and the order in which to complete them, work through the training at their own pace, and manage their own time to complete them.

While this self-directed approach gives the student control over their learning, there must still be the opportunity to engage with the instructor and ask for clarification where necessary. Our Canvas page allows for this level of interaction. We have included a discussion forum where students can post queries, and there are bookable consultations where the student can have an online live meeting with the instructor and receive individualised support.

### **Conclusions**

Supporting students online to develop more effective habits for their personal, professional and academic life requires new thinking on how training is designed and delivered. We need to ensure the students are not only given the opportunity to learn new approaches, but also to practise and apply the learning, to enhance their current and future performance and develop these new habits.

By adapting our approach, researching online pedagogy, reflecting on student feedback and sharing our learning with our peers, we hope to continue to enhance the student experience even further.

Even beyond the current restrictions, we can build on this learning, to provide a more blended and enhanced student learning experience.

By incorporating the benefits gained from utilising technology, blending trainer led, and student led learning, online live and pre-recorded sessions, individual reflections, and real-world experiential learning opportunities to develop new habits, we will ensure students are future ready as thinkers, leaders, communicators and innovators.

This article was developed by **John Mackel Postgraduate Training and Development Consultant** at the Graduate School with the support of **Kara Bailey, Donna Hyland and Eimear O'Connor.**



# Stretching available technology to provide an enhanced online learning experience

By Dr David Simpson, School of Medicine, Dentistry and Biomedical Sciences

*I co-ordinate a module in the **Bioinformatics and Computational Genomics MSc**. Fortunately, I did have time to prepare for online provision of teaching in the autumn semester, a task made much easier having transferred the module to Canvas the previous year.*

## Creating Content Tabs

Given that the primary interaction with students would be via Canvas and Teams, I wanted to make these interfaces as appealing as possible. While Canvas is an excellent platform, navigation through the 'module' pages for each teaching session requires

either scrolling down through a lot of information or navigation to another page. At the suggestion of my colleague, Dr Caroline Meharg, this was improved by adding tabs using the HTML editor. The content can then be divided into manageable chunks available through tabs that appear along the top of your page (see Fig 1).

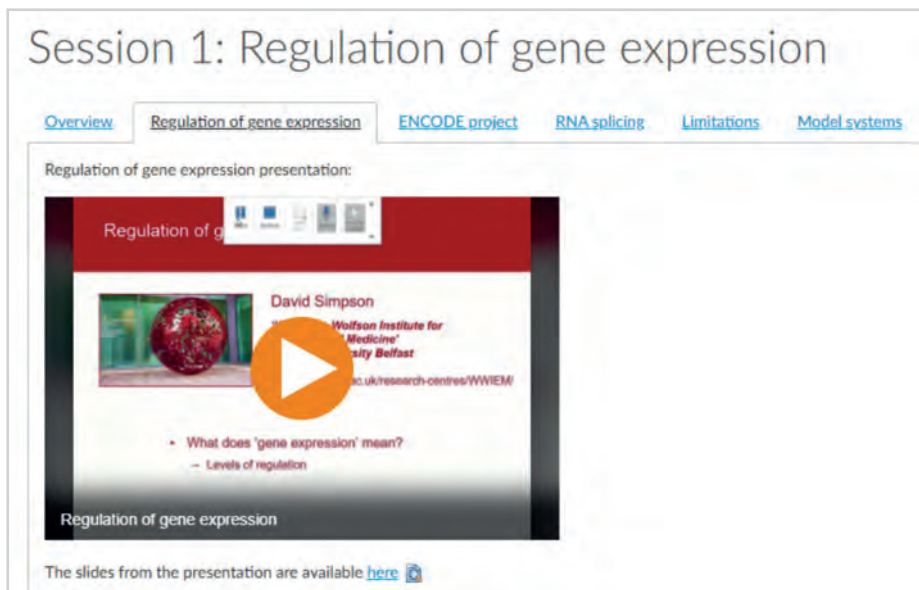


Fig 1. Screenshot illustrating the use of tabs

## Pre-recording Presentations

Presentations can be delivered live through Teams, with a recording made available afterwards or prerecorded and made available ahead of the session. While live presentations do give opportunities for interaction, I have found this difficult, particularly with larger classes. However, this format did work well for group presentations, in which the presenting group turned on their cameras; each went through their own slides and then, as a group, answered questions from the rest of the class. The pre-recorded approach provides the opportunity to have a live

Q&A session at the time scheduled for the lesson. This can be more fruitful because students have time to consider the content and formulate questions ahead of time.

Both these approaches can be rather impersonal, with the presenter either not visible in a standard PowerPoint pre-recording, or appearing as a small talking head in a Teams session. While preparing my module I came across a video online in which the presenter was standing in front of their slides and pointing at relevant material, engaging with the audience in a similar or even more effective way than one would

in a face-to-face presentation in a lecture theatre. There was a time when a specialized recording studio would have been required to make such a video, but it reminded me of the ability to use virtual backgrounds in Teams and other video-conferencing platforms. After some research, I discovered a beta function in Zoom which enables use of a PowerPoint presentation as your background. You can set up a Zoom meeting (with just yourself) using this function and scroll through your slides explaining the content. If you press the record button at the start your talk will be available as a video at the end of the meeting.

I thought I had the technique cracked until I tried to point at a specific region on the PowerPoint slide projected behind my image! The problem of interacting with an inverted image behind you can be addressed by duplicating your display on a second screen, which could be attached to your PC or a laptop to which you project wirelessly. Place the second screen at right-angles to the first with your web cam attached to it. You can then record your video while looking at your second screen and pointing to things on the first screen. Make sure you have no content in the bottom corner of the slides and locate your image here. If you talk to the camera and look/point at the first screen, in the finished video this will appear as if you are addressing the audience and interacting with the content (Fig 2).

I think the videos made using this technique provide the closest possible experience to watching a presentation in a lecture room. It does take a bit of effort to set up but should be easy for anyone familiar with Windows and Teams – it is also possible to use an iPad as a second screen. The main issue is achieving effective segmentation of your image from the background so that bits of your office (ie bedroom!) don't appear as you move around. It is important to have good lighting and a plain background works best.

## Function: microRNAs regulate mRNA expression

- Target mRNAs with partially complementary site within 3' UTR
- **R**NA-**I**nduced **S**ilencing **C**omplex (RISC)
  - Multiprotein complex containing single-stranded mature miRNA
  - Argonate (Ago2) has RNase activity
- mRNA cleavage
- Inhibition of translation



<http://www.nature.com/nrg/multimedia/rnai/animation/index.html>



Fig 2. Screenshot of interactive video created using Powerpoint slides as background.

### Practical steps to make a video

#### 1. Set up a second display screen

If you have **2 monitors**, simply duplicate the display. To use a **laptop** make sure PC and laptop are on the same network. From the 'action center' in the bottom right of the Windows screen select 'Project' screen, 'Duplicate' and 'Connect to wireless display'. Accept on your laptop. To use an **ipad** download [SplashTop App](#) on ipad and XDisplay Agent on PC. Connect ipad with USB lead to PC.

#### 2. Microphone and webcam

You can use the microphone with your webcam or integrated in a headset. Wearing headphones can interfere with segmentation of your image from the background, so if possible, use a separate microphone. Keeping the webcam connected to your main PC, position it on/beside the second screen.

#### 3. Record presentation with Zoom

Start Zoom, select New meeting, Share screen, Advanced, 'Beta' Powerpoint as virtual background, Share and Open your Powerpoint file. Move and resize your image as required (usually lower right corner of the slide). Position yourself such that you can move your

arms within the field of view of the camera by moving it and yourself further apart if necessary. Adjust lighting and background to minimise the background showing behind your image as you move. Practice moving through your slides using the arrows on the bottom of the Zoom screen. Unfortunately, animations are not supported, so to mimic these you will need to split them across several slides.

To start recording simply press the record button on Zoom. When you stop the recording, you will see the message 'the recorded file will be converted to mp4 when the meeting ends'. When you end the meeting the video file will be saved to your computer. You can open and trim etc as required with any video editing software, such as the Windows Video app.



Place second screen at right-angles to the main one.