Newcastle University

Faculty of Medical Sciences Technology Enhanced Learning Team

Selected Case Studies 2020-22

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Contents

The Faculty of Medical Sciences Technology Enhanced Learning Team

Introduction

Welcome to this booklet which showcases some of the work of the FMS Technology Enhanced Learning team (FMS TEL).

The team cover 3 key areas; e-learning, technical development, and support for digital skills – aiming to meet the specific needs of the Faculty. This includes supporting both modular and non-modular programmes (such as those in Medicine and Dentistry), teaching delivered across the region in partnership with LEPs and NHS organisations, and also in Malaysia, with input from clinical teachers who are external to the University.

FMS TEL work with academic and PS colleagues across the Faculty and also in close partnership with the Learning and Teaching Development Service (LTDS), NUIT and other colleagues around the University.

These articles were selected from the FMS TEL Blog (see: https://blogs.ncl.ac.uk/fmstel) which has regular posts from the team about all aspects of our work, ranging from large collaborative projects to quick tips and tricks. Contributions are also welcomed from across the faculty about learning technologies, their implementation and associated pedagogy.

We hope you find this booklet of interest and we would encourage you to visit the FMS TEL Blog. Also, a big thanks to the colleagues for their contributions in producing this booklet and the ongoing additions to the Blog.

You can scan a post's QR code to jump to the online version and explore links and associated resources.

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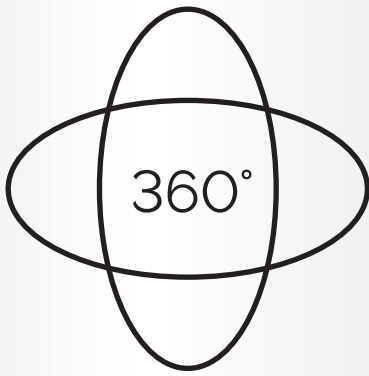
360° Immersive Virtual Reality Images

Tracy Connell

Find out how 360° immersive VR images are captured, processed, and made ready for viewing, and how they are used in FMS to familiarise students with new environments.

360° images are used in FMS for a variety of purposes such as creating immersive tours and hazard perception. This work results in images which can be viewed on screen or using a VR headset.

These images have a variety of uses, including

- allowing students to view places they may otherwise never see in person
- allowing students to see facilities such as labs before they arrive on campus
- students can familiarise themselves with the layout of a room or building
- taking activities in a safe controlled realistic environment, for example identifying hazards without putting themselves at risk
- helping students learning at a distance to feel like they are part of the institution

As well as single images, it is possible to connect a series of images to create tours. Users can then click one place to the next in a series of linked 360° images – like in Google Maps Street View. Video tours can also be created.

What are 360° Immersive VR Images?

360° VR images are images which span 360° around a room or area. The user can navigate around on a computer or by using a VR headset for full immersion. They provide a view of a place as if you were standing there.

Example 360° VR image of a teaching lab

Why 360°VR Images?

The aim of creating 360° images was to immerse the user in the environment they will be studying in, and orientate them before they arrive. It can also be useful for distance learning students to make them feel like they are part of the university. If you have a compatible headset, you can really immerse yourself into the environment.

In the School of Biomedical, Nutritional and Sport Sciences there are a number of facilities students will use when they attend the university.

The School wanted to orientate the students to these facilities before they arrived. These facilities include laboratories, kitchens, physiology equipment and gate track, climate-controlled rooms and sensory rooms.

The School also wanted to give students the opportunity to practise hazard identification in a controlled environment, where they wouldn't actually be in any danger of the hazards.

Advantages of using 360° Images

360° Images

- allow students to view places they may otherwise never see in person
- can orientate students to facilities before they arrive at university, including students with accessibility issues who are wary of a strange environment or apprehensive about such facilities
- familiarise students with the layout of a room or building so they have a head start on where they need to be
- allow students to take activities in a safe, controlled realistic environment e.g. identifying hazards without putting themselves at risk
- are interactive and engaging, providing an active rather than a passive learning environment
- help students learning at a distance to feel like they are part of the institution

Shooting the Photographs

A 360° camera, such as the Insta360 ONE X, can be used to shoot the 360° images.

The thing to remember about a 360° camera is that everything in the room will appear in the photograph, even the photographer and tripod. You must either set it on a timer or control the shutter remotely.

Set the camera up on a tripod in the middle of the room, leave the room and hide where the camera will not see you (probably outside of the room) and operate the shutter from an app on a mobile phone. Or you can set the timer and then run and hide before it snaps the image.

For walkthrough tours multiple 360° images will need to be taken of different parts of a large room, or of different rooms and corridors if you are touring a building. These can then be connected together later with hotspots.

For the hazard identification images, hazards were laid out and a 360° image was taken of the room containing the hazards. Invisible hotspots are added later over each hazard to trigger an information box regarding the particular hazard.

Editing 360° Images

360° images can be edited within Photoshop. For example, you may want to remove the tripod from the image. You can do this in a number of ways within Photoshop, by using such tools as the content-aware fill or the clone tool. 360° images have to be imported into Photoshop using the 3D/Import Panorama option and exported using the 3D/Export Panorama option. Otherwise, the editor can edit the image using the photoshop tools as if editing a regular digital image.

Hosting 360° Images

There are a number of sites which will host 360° images. They do charge a fee, although some may have a free version with restrictions or advertisements. **Theasys.io** seemed to fit the bill well for 360° images and tours, and they are always adding new features. A host that had invisible hotspots or allowed upload of images to use as hotspots was needed for our project. A blank image was created and uploaded to **Theasys.io** to use as an invisible hotspot. A lot of the other hosts considered did not have this functionality.

Embedding 360° Images

Theasys.io provides links and embed codes for all 360° images. You can use the embed code to embed the images into Canvas.
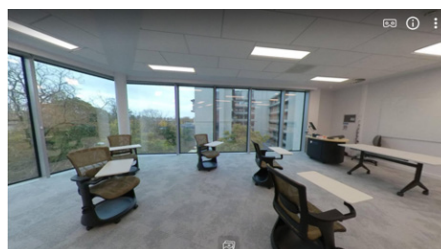
Embed code example:

```
<iframe src="https://www.theasys.io/viewer/jktgoBFLF64MqTH91GGPPKiVjqaxKO" allowfullscreen="true" frameborder="0" scrolling="no" allow="vr;gyroscope;accelerometer" height="450" style="width:100%;border:none;"></iframe>
```
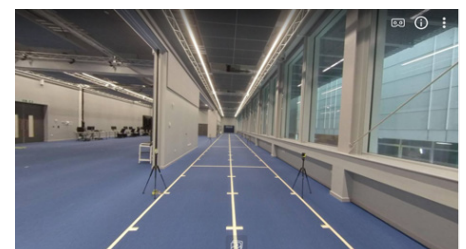
Immersive 360° Image Examples

Below are a number of examples of images taken using the Insta360°ONE X camera.

Single 360° Images:

Seminar room

Biomechanics Track
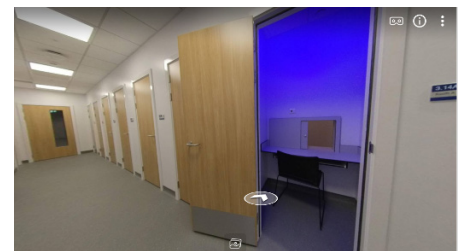
360˚ Tours

360˚ Tours are made up of multiple 360˚ images of a room or area connected together through hotspots.

Laboratory

Nutrition Lab

Sensory Room

360˚ Hazard Identification

360˚ Image which includes a number of hazards which students have to identify. If they click on a hazard an information box will pop up with further information regarding that particular hazard.

Physiology Lab Hazards Identification Task

Physiology Lab Hazards: Answers

Students and staff alike have given positive feedback about this new technique and the possibilities it has opened up.
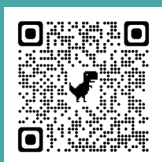
Scaffolding Reflection

Simon Cotterill

Structured reflective templates are currently being used in NU Reflect. This article outlines the rationale for scaffolding reflection and describes the developments.

Scaffolding provides a great metaphor in Education. In the construction industry, scaffolding provides temporary support and helps shape the developing building. Scaffolding was first used as an educational concept, by Wood, Bruner, and Ross (1976) to describe the support given by an expert in one-to-one tutorials – something akin to a semi-structured interview.

Scaffolding is also a useful metaphor in reflective practice. A series of questions or prompts can provide the learner with a structure to reflect on. There are many structured frameworks which can be used to scaffold reflection. Perhaps the best known is Gibbs' Reflective Cycle (1988). This involves six stages, each with questions to encourage the learner to go beyond purely descriptive accounts, to incorporate reflective self-evaluation and also make plans to improve future performance.

Overview of Gibbs' Reflective Cycle

Over time, it is hoped that the use of such frameworks will progressively increase learners' reflective capabilities. This may be enhanced by sharing, discussion and guidance from educators, particularly in the early stages of developing reflective skills. However, like the use of scaffolding in construction – eventually that structure and support may no longer be needed, after developing as an independent reflective practitioner.

Structure can be a double-edged sword though. Too much structure can reduce engagement (everything else being equal) and long 'forms' may be potentially intimidating or off-putting to some. Motivation is key. Aside from the obvious use of summative assessment (itself bringing challenges to 'authentic' reflection) – learners need to perceive value and purpose to developing reflective practice. Is reflective practice seen to be valued by the course – is it embedded in the module/ programme and referred to by teachers and in course documentation?

In some contexts, particularly many vocational subjects, reflective practice is explicitly required by professional bodies, with clearly-defined processes which have reflective elements, such as annual appraisals and CPD. In other contexts, without this driver, there are challenges to avoid reflection remaining an 'abstract' concept, particularly if there are limited 'practical' activities to reflect on. Obviously, clarity of purpose is important. Reflective frameworks can be used (or adapted) for a range of purposes, such as reflecting on an assessment, perhaps before and after feedback, with actions to prepare for the next assignment.

Sharing and discussion of reflection is another dimension – in some contexts, reflection may be purely private, in other contexts sharing with a mentor may be mandatory. Where shared, fostering a 'safe' environment for sharing and discussing reflections is particularly important for younger students, whist many (but not all) mature students are more comfortable with this.

Reflective Templates in NU Reflect

NU Reflect is developed and maintained by FMS TEL, has pedagogic support from LTDS, with academic leads Patrick Rosenkranz and Katie Wray and governance via Digital Education Sub-Committee. NU Reflect was launched in September 2021 following a strategic review of ePortfolio. The redesign and rebranding was intended to help promote its core purpose of supporting reflective practice and transferable skills after many years of prioritising developments to support Personal Tutoring. As part of the strategic review, a recurring theme in the staff consultation was the desire for a prospective system to support reflective frameworks. Gibbs' Reflective Cycle was the most widely used framework, used in contexts across all three Faculties – though often with minor adaptions for specific courses.

As such reflective templates were developed in NU Reflect and are now in use, with three global templates available:

· Gibbs' Reflective Cycle
· Driscoll Model of Reflection
· Four Fs of Active Reviewing

Also, staff can create new templates to meet their particular module or programme requirements.

Scaffolding Reflection

Structured templates in NU Reflect

Structured templates are nothing new and were common in paper-based portfolios. However, there are some key advantages to integrating them in NU Reflect. For example, the reflections can be linked to skills or competencies (either the Graduate Framework or programme-level frameworks), which integrates them in the 'My Skills' section of the website. Reflections can also be tagged with course-specified or personal categories. The tools support longitudinal use throughout the student journey, rather than being restricted to an episodic learning event or being compartmentalised in a particular module. As such, a learner can accumulate reflections and achievements against skills and categories over time. NU Reflect also offers sharing controls, so students can keep reflections private, or share them if they want to.

References

Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. Child Psychology & Psychiatry & Allied Disciplines, 17(2), 89–100. https://doi.org/10.1111/j.1469-7610.1976.tb00381.x

Gibbs G (1988). Learning by Doing: A guide to teaching and learning methods. Further Education Unit. Oxford Polytechnic: Oxford.

Audio Commentaries on Client Consultations

Eleanor Gordon

This article describes using audio recordings of patient consultations in teaching. Commentary was added to the recordings by the lecturer to create a richer resource.

Introduction

This case study concerns Dietetics and Nutrition module NUT2006, Measurement and Assessment of Dietary Intake and Nutritional Status. As part of this module, dietary interview consultations are recorded so that the students can listen to these as examples. The FMS TEL Podcasting Webinar provided initial inspiration for what could be done with the recordings to enhance them. With a little more support, a new audio resource has been developed which adds audio commentary to the recorded consultations, highlighting various features.

Consultations and Recordings

The work of Dietitians and Nutritionists involves gathering information from individuals and populations on their recent or typical food intake. This enables them to analyse nutrient intake and understand dietary behaviours so that they can make suitable recommendations. Taking a diet history, or a 24-hour dietary recall, involves a structured interview with questions exploring habitual food intake, timing of meals, cooking methods and quantities. The effectiveness of the interviewers' questioning technique impacts upon the quantity of information gathered and the quality of the nutritional analysis that can be undertaken. Students are working towards proficiency in these skills. Listening to recordings of these interviews exposes students to examples which will support in improving their skills when they perform these tasks for themselves. They can also practise analysing the data provided from the audio recordings.

The recordings themselves are a very rich resource, which could be used in a variety of ways to help students improve their practice. The following task was developed, which required teaching staff to add audio commentary to the interviews.

The Task

Students first watched a short lecture on best practice for conducting interviews. They then listened to a recorded interview, by an anonymous peer, and made notes critiquing the effectiveness of the questioning techniques and determining if the quality of information obtained was sufficient to undertake nutritional analysis. Next, they listened to the same interview with professional commentary provided by staff, highlighting what could be improved and were asked:

- Did you spot the same things?
- Reflect on the comments and try to think about how you might use this knowledge to improve your own skills in gathering dietary information from service users.

This task was designed to allow students to develop their skills in conducting the interviews, and to reflect on practice and identify areas for development. The use of peer recordings meant that there would be a range of areas to comment on, making the task itself much more

active than simply listening to a professional. Students were also offered more interview recordings to practise this task further.

Adding Commentary with GarageBand

A recording was chosen that demonstrated a range of teaching points. Having listened to the recording and made brief notes, cuts were then made in the original recording at natural stopping points, for example, after the participant and interviewer had discussed breakfast. It was important to allow the original recording room to breathe by not interjecting too often – this makes for fewer edits too.

You can record audio with a range of devices – Windows laptops can run Audacity, and Macs come with GarageBand. It is also possible to record audio clips on a smartphone and import them. When doing any recording, make sure to do a quick test first to ensure there is no unwanted background noise – just record a few seconds and listen back. GarageBand was used in this case, but the Audacity user interface is very similar.

The first 20-minute recording took around two hours to produce, but this time included learning how to use the software. The screenshot below shows how the editing process looks in GarageBand. The top half shows the three tracks that were mixed to create the final output. By cutting and arranging the various sections, it is possible to quickly add commentary and even intro music to the basic original recording.

The project file, which contains all of the information in the top half of the screenshot such as individual tracks and cuts, can be saved for later use. This is helpful if you want the flexibility to change the content, or re-use elements. The single stream of audio can be exported separately as an audio file and embedded into Canvas or the Medical Learning Environment with accompanying text and other resources to build the desired task.

Style and Substance

It is natural to worry about quality when producing an audio or audio-visual resource for the first time as the content should convey a level of professionalism matching its purpose. As long as content is clear and understandable, it will serve for teaching. Making a clean recording can be done relatively simply by avoiding background noise and speaking at a measured pace and volume. You can add a touch more professionalism to your recordings by adding a little music to the intro and using some basic transitions like fading between different tracks if needed, but there is no need to buy specialist equipment. The content of the recordings was linked very closely to the students' tasks and mirrored how they may receive feedback in future by showing what practitioners look for in their interviews. This clear purpose alongside the care taken in producing the audio ensures that this resource is valuable to listeners.

Conclusion

While at first it seemed like a big undertaking, a quick YouTube search for instructions on using the software, and then having a go with the audio recordings has opened up a new avenue of teaching methodology – it was a lot easier to do than it first appeared, and in total took around 2 hours. The software has a lot of capabilities, but only the basics are really needed to produce a high-quality, rich teaching resource. Commentated practitioner interactions allow teaching staff to draw students' attention to key moments while remaining in the flow of the interaction, signposting how students can reflect on practice and develop their own interviewing skills.
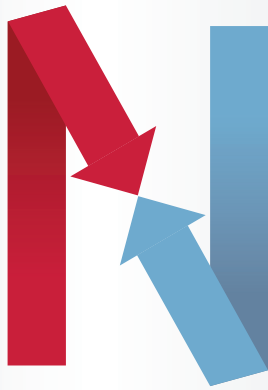
Moving from Blackboard and Ngage to Canvas

John Keogan

Moving systems comes with problems as well as new benefits. Find out how FMS TEL worked through the recent changes to our Virtual Learning Environments.
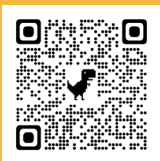
In the summer of 2020 Newcastle University switched from Blackboard to Canvas. In truth, some online modules had been hosted on Canvas months before the official launch, but from August 1 2020 Canvas was the exclusive Virtual Learning Environment (VLE). The content that had previously been in Blackboard was transferred over to Canvas, creating three years' worth of archives. For the majority of courses this was fine, as Blackboard was only ever a repository for course materials. For the e-learning courses offered in the FMS Graduate School and the School of Medical Education, there was an additional challenge.

In addition to Blackboard, e-learning courses also used Ngage, a bespoke VLE used widely throughout FMS. Quizzes, assignments and discussion boards could all be found on Blackboard, but Ngage was home to the actual content, typically released weekly to students. Where Blackboard content could be migrated en masse, anything on Ngage had to be migrated over manually page by page, course by course, for all three semesters.
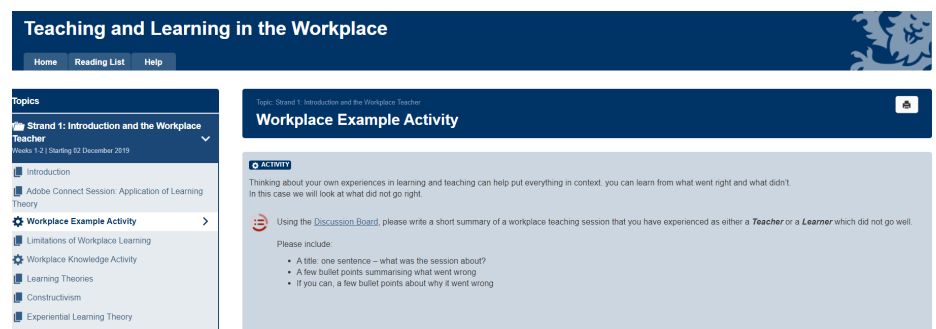
The Ngage user interface

Once the content was copied over, we had to adapt it to fit the new platform. Discussion boards and assignments were like-for-like, but certain Blackboard features such as blogs and eJournals had no direct equivalent on Canvas. This required creative problem solving to adapt Canvas to our specific needs, and with help from the Canvas Community we were able to find solutions. For example, to create an eJournal, a staple of many of our modules, we had to assign every student to their own private group, and then set up a regular discussion board as a 'group discussion' and selecting the pre-prepared eJournal groups, thereby creating a private area for students to make notes on the different topics and have the module leaders check over them.
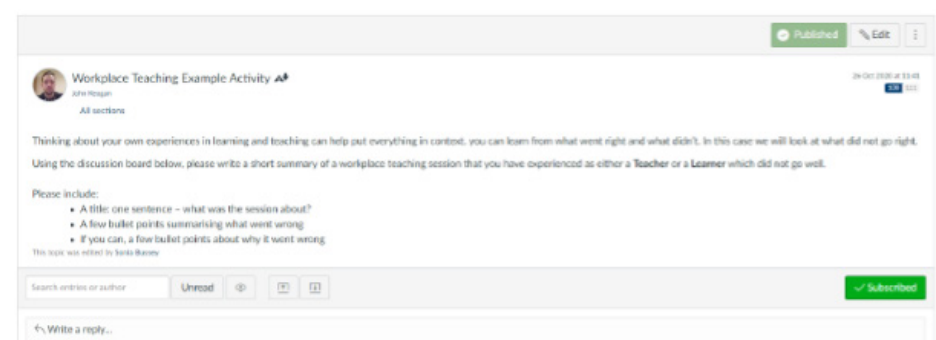

The same page on the new Canvas VLE. A less cluttered page with a built-in discussion board and a crisper overall presentation.

A lot of visual features and formatting were also lost during the copying and pasting process, meaning pages previously adorned with images and embedded materials had to be reworked. We utilised the web design skills of the FMS TEL Team and with a bit of creativity were able to create interactive features such as click and reveal, and visual aspects, such as shadowboxes, to help emphasise particular pieces of text.

As well as the migration of content, a huge effort was made to train University staff in the run up to the 2020/21 academic year. Training sessions that had originally been scheduled in-person were instead delivered via Zoom, covering areas such as Canvas essentials, assignments, and quizzes. To supplement the training, a Canvas orientation module was created to help ease staff into the transition. Additionally, every member of staff was assigned their own sandbox course allowing them to experiment with the new platform and test out features that could be replicated in real courses.
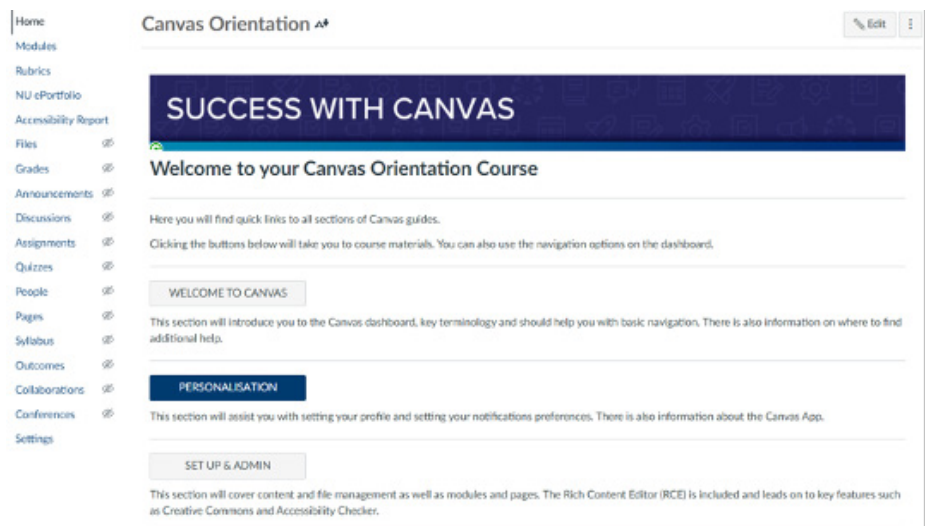
The first Canvas orientation home page

Now that we are exclusively using Canvas, the feedback has been overwhelmingly positive. Despite some initial challenges with the practicalities of using a new VLE – and some trial and error – new Canvas features such as Zoom integration, built in calendars and Speedgrader have enhanced the user experience.
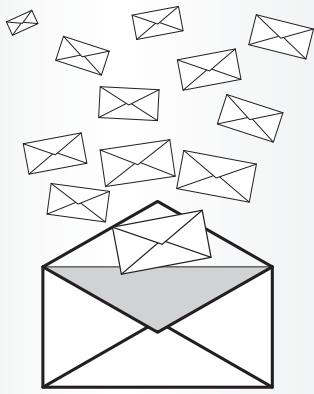
I've got too much email!

Dr Michelle Miller

Too much email? Learn how to make your inbox work for you!

The FMS TEL team has developed a short course showing how you can make Outlook work for you. If your inbox is a chore and not a help, why not take a couple of minutes to tame the beast? The short course is available on Canvas and the MLE and comes with an accompanying 9-minute audio programme which talks you through some examples of what the tools can be used to achieve. The course is also available for you to import into your own courses via Canvas Commons, so feel free to use it!
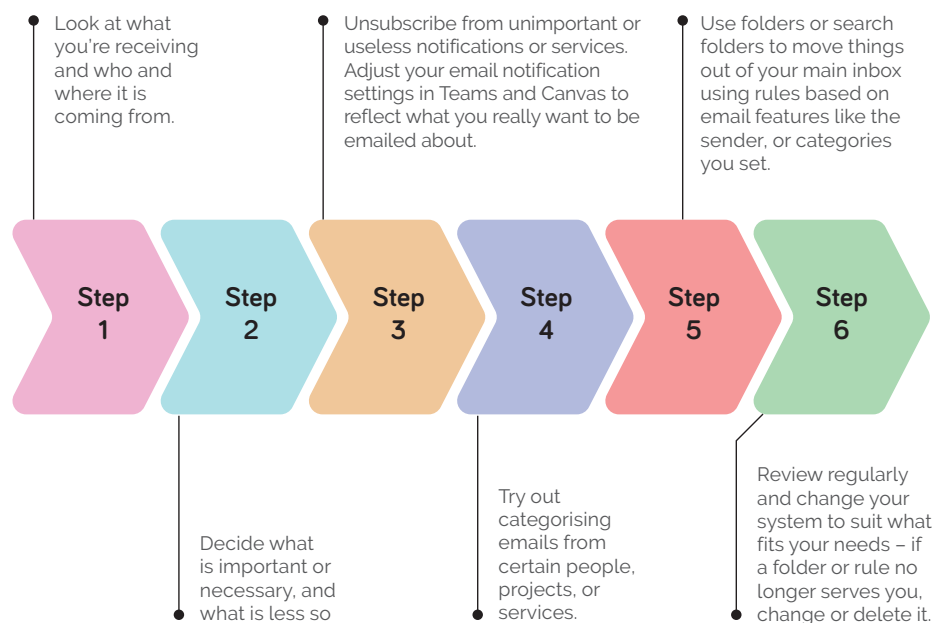
But I haven't got time!

- 10 minutes – listen to the programme for food for thought or do a quick spring clean (see steps below).
- 20 minutes – click through the guides and listen to the programme, try some things out
- 1 hour – give your inbox a good spring clean using our tips and guides, and implement some rules and filters to organise your incoming email into folders - but not too many!

∨ Inbox	**1**
Calendar Updates	**2**
University Updates	
Faculty Updates	
Other Notifications	**2**
Out of Office	
Mailing Lists	**7**
Student Work	

Example folder structure that can be used to highlight certain important incoming messages

6 Steps to Spring Clean your Inbox

Step 1 — Look at what you're receiving and who and where it is coming from.

Step 2 — Decide what is important or necessary, and what is less so

Step 3 — Unsubscribe from unimportant or useless notifications or services. Adjust your email notification settings in Teams and Canvas to reflect what you really want to be emailed about.

Step 4 — Try out categorising emails from certain people, projects, or services.

Step 5 — Use folders or search folders to move things out of your main inbox using rules based on email features like the sender, or categories you set.

Step 6 — Review regularly and change your system to suit what fits your needs – if a folder or rule no longer serves you, change or delete it.
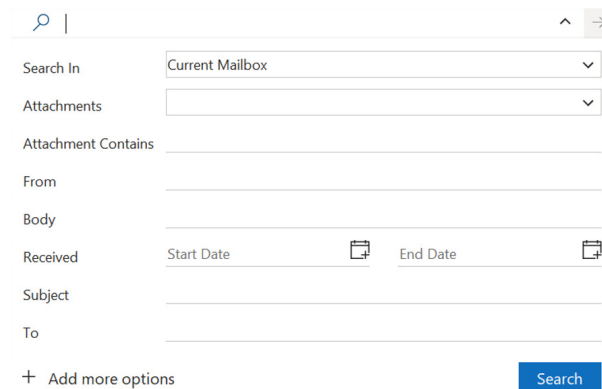
Searching Outlook Emails

This quick guide gives you tips on how to boost the power of your Outlook searches – this is particularly handy if your folder system is getting out of hand! With the search function you may not need to maintain as many storage folders as you think. Most of us are familiar with the search tool and can use the basic functions, but there are ways to supercharge your searches in Outlook.

Advanced Search

The first option is to use the Advanced Search feature. To use this feature simply click on the Search bar then click on the open menu caret on the right side of the Search bar, indicated by the red arrow.
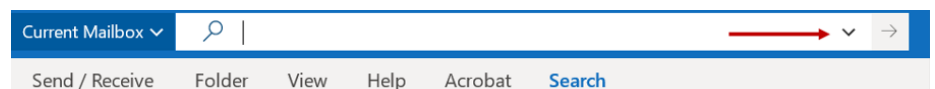
Use the Advanced Search options to specify criteria for your search. This interface is easy to use and understand. Search for emails based on sender, dates, subjects, attachments, and more.

Search Operators

You can also conduct specific searches using Outlook's search language operators. Here is a list of some of the search operators you can use to quickly search for specific results.

I've got too much email!

Search for	Findings
Pat	Anything containing the string pat including Pat, pattern, sympathy
Pat Smith	Anything containing the string pat or the string smith, including as part of a larger word
Pat AND Smith	Anything containing both strings pat and smith, including as part of a larger word
Pat NOT Smith	Anything containing the string pat but not the string smith, including as part of a larger word
Pat OR Smith	The same as searching Pat Smith
"Pat"	Anything containing the string pat alone, not including as part of a larger word
from:"pat smith"	Anything sent from Pat Smith
from:"pat smith" about:"status report"	Anything sent from Pat Smith that includes the phrase status report in the subject line
Hasattachment:yes	Anything with an attachment
attachments:document.docx	Anything containing an attachment called document.docx
subject:"status report"	Anything with the subject including the phrase status report
received:15/2/2022	Anything received on 15 February 2022
from:pat (received:15/2/2022 or received:16/3/2022)	Anything received from a sender with string pat on 15 February 2022 or 16 March 2022

We hope these tips can help you take control of your inbox. Making small incremental changes to how you manage your incoming mail can really help to make your inbox work for you!

Moving Lab Health & Safety Online

Gemma Mitchelson

This project was a complete redesign of the Laboratory Health and Safety Module, moving the resources completely online instead of using paper handbooks.
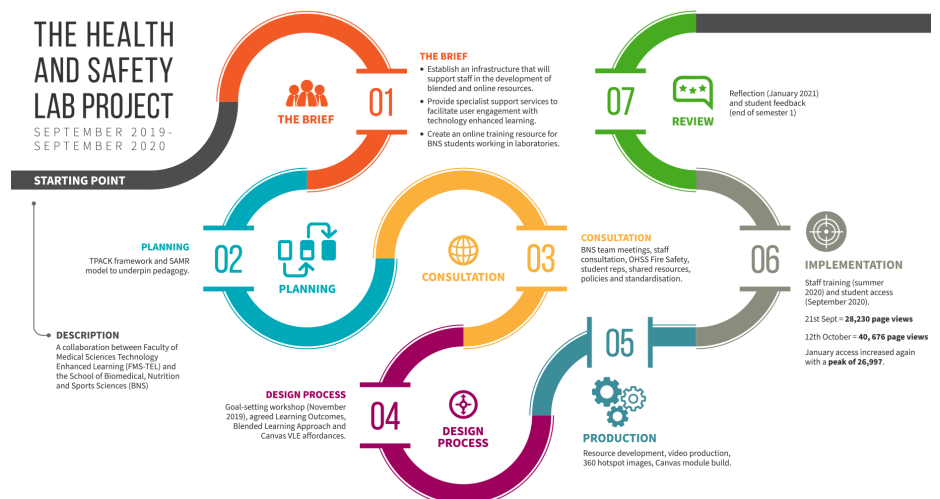
In September 2020, the School of Biomedical, Nutritional and Sport Sciences launched their new Laboratory Health and Safety Module. This online package was designed to give Stage 1 students an induction into key areas of laboratory health and safety, but also as a revision resource for Stages 2 and 3. Future content development will look at additional resources specific to the later stages of study.

Development of this module required a complete redesign of laboratory health and safety resources, moving from paper-based module handbooks to interactive, online blended materials. We had to establish an infrastructure to support both staff and students with this change. We also used key design principles and frameworks to facilitate user engagement with interactive resources.

A collaborative team was formed between FMS TEL and the School of Biomedical, Nutritional and Sport Sciences (BNS) to amalgamate technological, pedagogical, and content knowledge.

Our Goals

- Student engagement: Academic staff were finding it difficult to monitor student engagement with the paper-based module handbook and laboratory code of conduct and wanted to have a more standardised approach to ensure that all students are aware of and complying with health and safety requirements in the laboratory.
- Blended Learning: We did not want to simply replicate the paper materials into a digital format, so a lot of time was spent thinking about blended learning pedagogy.
- New and interactive Resources: Access to the new VLE, Canvas, provided us with a more sophisticated platform to produce an interactive module with new approaches to learning.
- Staff Autonomy: We did not want to rely on external tools and specialist software otherwise upkeep and editing would be a challenge once staff handover was completed.

THE HEALTH AND SAFETY LAB PROJECT
SEPTEMBER 2019-SEPTEMBER 2020

STARTING POINT

DESCRIPTION
A collaboration between Faculty of Medical Sciences Technology Enhanced Learning (FMS-TEL) and the School of Biomedical, Nutrition and Sports Sciences (BNS)

01 THE BRIEF
- Establish an infrastructure that will support staff in the development of blended and online resources.
- Provide specialist support services to facilitate user engagement with technology enhanced learning.
- Create an online training resource for BNS students working in laboratories.

02 PLANNING
TPACK framework and SAMR model to underpin pedagogy.

03 CONSULTATION
BNS team meetings, staff consultation, OHSS Fire Safety, student reps, shared resources, policies and standardisation.

04 DESIGN PROCESS
Goal-setting workshop (November 2019), agreed Learning Outcomes, Blended Learning Approach and Canvas VLE affordances.

05 PRODUCTION
Resource development, video production, 360 hotspot images, Canvas module build.

06 IMPLEMENTATION
Staff training (summer 2020) and student access (September 2020).
21st Sept = **28,230 page views**
12th October = **40, 676 page views**
January access increased again with a **peak of 26,997**.

07 REVIEW
Reflection (January 2021) and student feedback (end of semester 1)

Project Milestones

Clear Signposting and Navigation

The intention is that students can dip in and out of sections in whichever order they prefer. However, the laboratory safety section was divided into three ordered segments:

1. Arriving at the lab
2. During the lab practical
3. At the end of the lab practical

Multi-disciplinary

Some resources cover all three strands of Biomedicine, Sport and Nutrition so we decided to host one course for all. Subject-specific materials are clearly labelled. We attempted to introduce lock and release and mastery pathways so that students would only access their own subject areas, however some students are multi-disciplinary, so this did not work. Also, there was too much of a time delay with the Canvas mastery pathways function and we felt this was not appealing to students.

Humanising and Personalisation

We felt it important that students could connect with key staff members and that video welcomes would achieve this.

- Videos from a laboratory demonstrator
- Welcome video from Head of School and Health & Safety Officer

Interactive Resources

It was always planned that we would use 360° images to allow students the opportunity to become familiar with the laboratory environment before attending in person. This is to help alleviate some of the anxiety that our students experience when first entering a large laboratory space.

- 360° lab walkthrough tours
- 360° interactive images
- Innovative assessments

Online Interactive Assessments

Canvas gave us the opportunity to embed and host new online interactive assessments.

360° Hotspots Hazard Identification
We wanted to create a hazard identification exercise in a safe environment. 360° images allowed us to create an interactive digital version of the laboratory with a number of hazards included. This would

not have been safe or possible to do in a physical laboratory space. The 360° materials were hosted externally on **Theasys.io**. There are many tools which allow you to add hotspots to 360° images but the problem is that they are never hidden. However, with the ability to upload custom hotspots in Theasys we were able to create and upload a transparent image to use as an invisible hotspot.

Branching Scenarios

Branching scenarios allow students to make decisions in a safe online environment, helping them to understand the consequences of their choices.

Self-Management of Learning

We added features to encourage students to monitor their own progress:

- Standalone units to encourage self-managed learning and flexibility
- Colour-coded and branded sections for ease of navigation
- Clear learning objectives for each section
- Section progress bars
- Content release based on completed action e.g. minimum score in Health and Safety quiz

For future developments, we are considering how we may be able to generate course completion certificates or Digital Badges.

Student Feedback and Canvas Analytics

The new course went live in September 2020 for the start of the academic year, with 1176 students enrolled. Canvas analytics indicates good interaction at appropriate times.
- 21st September 28,230 page views
- 12th October 40,676 page views
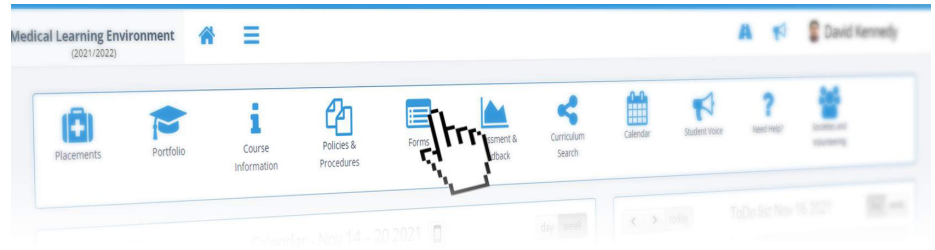- January access showed a peak of 26,997 page views
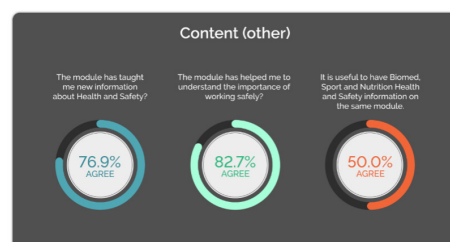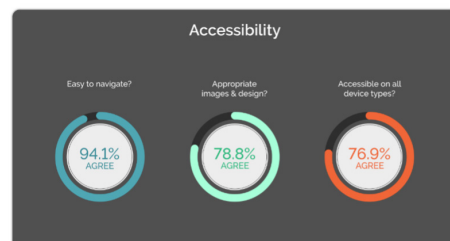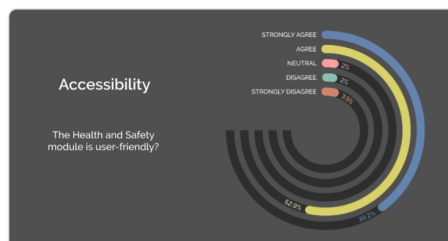
Dealing with extra-sensitive data in the Medical Learning Environment

Daniel Plummer

Learn how sensitive data is kept private in our online systems.

The Challenge

With the introduction of the new year 4 in the MBBS curriculum and the move to more blended learning, a higher degree of sensitive data was required to be stored on the Medical Learning Environment (the VLE for MBBS). Year 4 students are now asked to keep electronic records of patients and interactions as part of the Advanced Clinical Experience (ACE) module. This data contained personal contact details such as address, telephone and email of patients the students would follow on the clinical journey to let them reflect upon this experience throughout year 4.
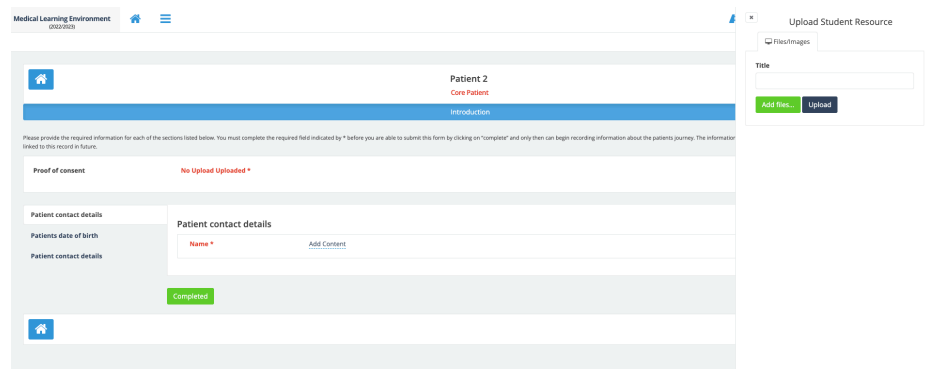
MLE upload

So before the start of Year 4, in the summer of 2020, we investigated and implemented an enhanced way of storing this patient information in the MLE.

The Solutions

First, we investigated how the data was stored in the backend database. Most information is stored in databases as unencrypted data due to the lack of sensitive nature of the data. This new data required something else. It was decided that parts of the data that could contain personal patient information should be encrypted, both in transit and at rest.

For parts of the ACE model (the data structure we use for the ACE section of MLE) we replaced the open text fields with this new encrypted field. This now meant that when data was entered and saved, before it was added to the database, the system would replace the open text with an encrypted data set using a secure key. To read the data again it would need the use of the decrypt method, that only the MLE could do by using the secure key.

The second part we investigated was to detach any personal patient information from the student's reflections. Once the student had completed the recording of the patient's details, the direct link on the website was removed and generic patient information used from that point onwards to identify the individual records. This kept the sensitive information separate from the day-to-day recording of patient interactions.

The students also uploaded consent forms signed by patients who agreed to take part in the ACE module. Final versions of consent forms highlighted that these would also contain sensitive information.

After further investigation the development team included these static files in the encryption methods used to support ACE. In order to allow students to verify the uploaded consent forms, the MLE allows a short window before encryption and archiving of consent forms takes place. Once this process completes the consent forms are no longer accessible via the MLE and recovery if required it is performed by a limited number of staff in FMS TEL.

These methods used may be a little extreme for the day-to-day data stored on most FMS sites, but the investigations and lessons learned from the ACE data has provided us with options for other sites in the future.
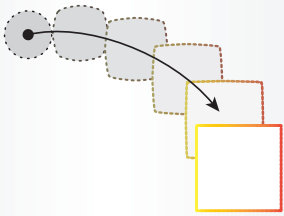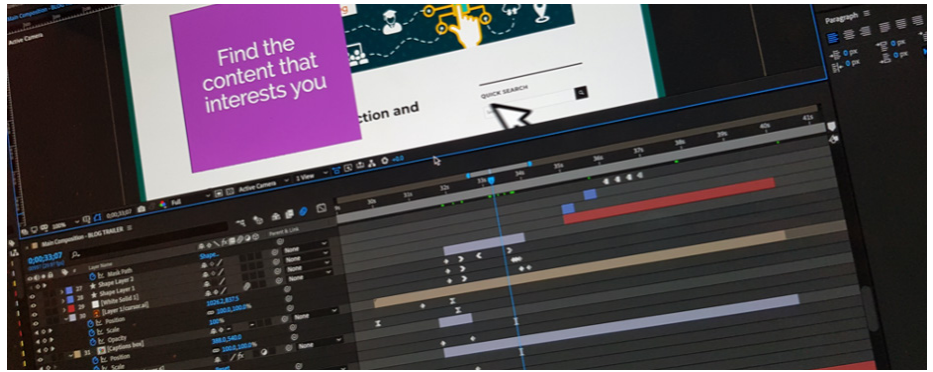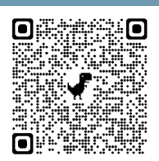
Animation: What I can offer, the journey, and previous examples

Ashley Reynolds

What goes into creating bespoke 2D Animations for Faculty of Medical Sciences teaching and research

One of the services I offer as part of the FMS TEL team is the creation of bespoke 2D animations. These are most commonly used as small parts of a bigger project, but they can also be stand-alone projects themselves.

Types of Animation

Depending on the nature of the animation required, and also the context in which it will be used, there are three different types of animation that we can produce.
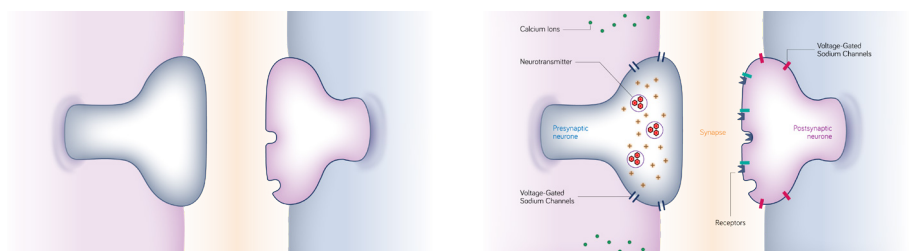
These are:
- Video based animation
- HTML5 (web-based) animation
- Animated GIFs

When looking at the source material I will first plan the animation in my head and will usually know right away which type of animation will be most appropriate for the job. For example, if there are any user interactions to be included then an HTML5 animation would allow for that, but if there is the need for some organic shapes then that would suit a video-based animation better.
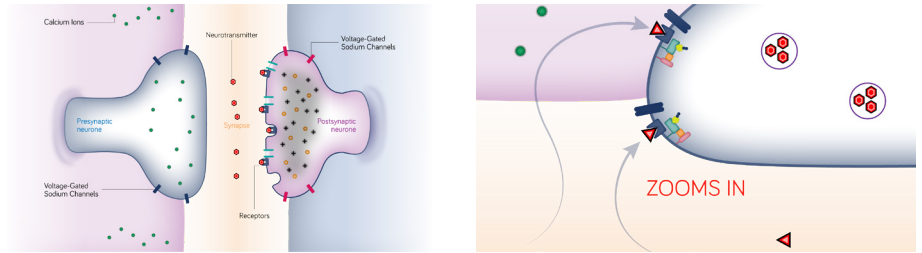
Planning and Storyboarding

When visualising an animation, I plan the animation as a whole from the start, rather than tackling it scene-by-scene as this gives a more natural and entertaining feel to the end result.

Once I'm happy that I have a good understanding of the content I will then create a series of illustrations as a storyboard and send this as a PDF for review.

Selection of storyboard steps

I then discuss with the subject specialist which techniques will work best for the application and raise any concerns. I can then start the animation process.

Creating the Animation

Getting things right at the concept and storyboard stage is critical and can save a lot of time, compared to how much of a time investment it can be if you have to re-do a large part of the animation.

However, understanding that I may not get the content perfect in the first draft every time, I structure my files in a way that changes can be made with minimal disruption to the rest of the timeline. This is achieved by both layering up the source Illustrator files and also separating the key points of the main composition timeline into separate sub-compositions. That way I can work on a small section without knocking everything else out of sync.

Obviously, every project is different but by focusing on the movements involved, the flow between the scenes and the basic animation principles I begin the sequence from the start and work on each stage in sequence. This is important because elements will often carry through from one scene to another so duplication can be avoided.

I use Adobe After Effects to create video-based animation and animated GIFs, and Adobe Illustrator to create any graphic and illustration assets needed for the animation. After Effects is an extremely powerful timeline-based tool that can make almost anything possible – think of it as being a kind of Photoshop for video.

If there is to be audio narration or a musical soundtrack on the video, then I arrange for that to be recorded early on in the development rather than being added at the end, as the content and movements should be timed to fit with events in the audio.

Most of the development time actually lies in creating the assets for the storyboard (which are later used in the animation), so when it actually comes to the animating stage things tend to move along pretty quickly. I usually render out (export) the animation after every new section is complete and upload it our Vimeo account for approval and to check that I'm on the right track before moving on to the next one.

The Review Process
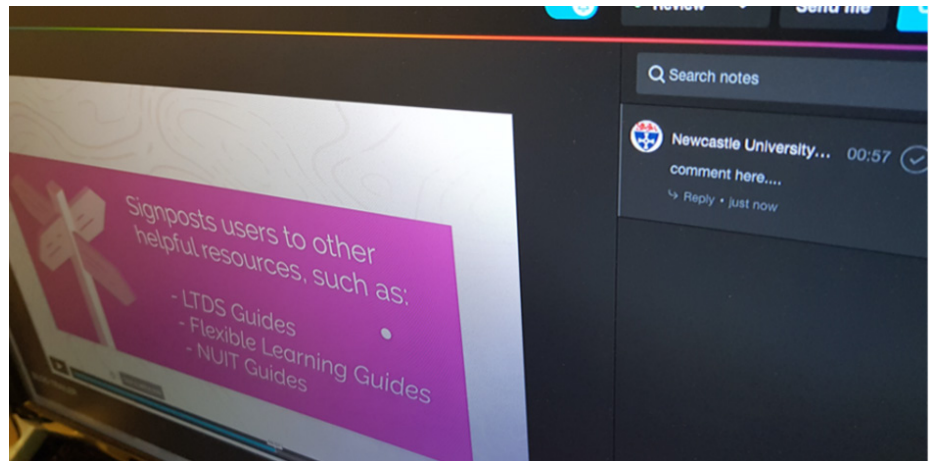
The Vimeo Review platform we use lets the users add time-stamped comments directly onto the video and sends me a notification email immediately thus providing a good communication channel for each specific issue.

When the first draft of an animation is complete, a shareable, password-protected link to the video can be sent out for a wider review to gather comments and feedback. From there we can address any comments and fine-tune the animation for further revisions, which will in turn be sent out for review.

While there is no standard for this, normally after a first (alpha) release and review, changes are made if required and a second (beta) release is then sent for review, with any further required changes reflected in a final (gold) release.

The Finished Product

The final render from After Effects will be a simple video file, usually in the .H264 codec (MP4) that can either be hosted on our Vimeo account and an embed code supplied, or, depending on file size restrictions, this could be uploaded directly to your target system. It can also be supplied as a file to be included in a PowerPoint presentation or other teaching material. The type of output required is discussed before we start the project to make sure we are taking the best approach.

Past Examples

I've worked on a wide variety of projects during my time at the university, including multiple MOOCs, marketing materials, and work on modules across both FMS and Engineering courses. The showreel linked here includes just a small sample of the projects I have been involved in.

Case Study: Virtual Oral Presentations as a Summative Assessment

Emily Smith

How do oral presentations work for 100% online modules? Presentations help students put across an idea while expressing their personalities, which is hard to do in an essay.

Introduction

Oral presentations are a popular choice of assessment in the Faculty of Medical Sciences, especially in our e-Learning modules. Students are asked to submit a pre-recorded presentation to Canvas and the markers watch the presentations at a time and place that suits them.

Diarmuid Coughlan, module leader for ONC8028 Practical Health Economics for Cancer, has kindly agreed to walk us through how the Virtual Oral Presentation element works on his module.

The Assessment

This year we had 14 students on the module. We asked the students to create a 15-minute presentation using either Zoom, Panopto (ReCap) or PowerPoint.

We informed the students right at the start of the module that an oral presentation was part of the assessment and 4 weeks into the module we provided a formative assessment. The formative assessment allowed students to familiarise themselves with their chosen software, gain experience talking to a camera and also get some limited feedback on their presentation skills.

The submissions are double marked. Marking is completed separately by each marker outside of Canvas, then markers meet to discuss which marks/comments would be entered into Canvas and made visible to each student.

The Set Up

We provided two submission points in Canvas

Recording Submission Point
This area was used for the marking. It was set up as Media Recording for MP4 uploads (max of 500 mb) with a Text Entry option for Panopto users (no size limit).

We allowed students to choose which technology they were most comfortable with and provided video and written instructions for Panopto and Zoom. PowerPoint instructions were added later as an option with links to guidance provided by Microsoft.
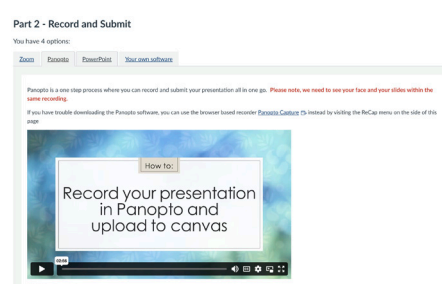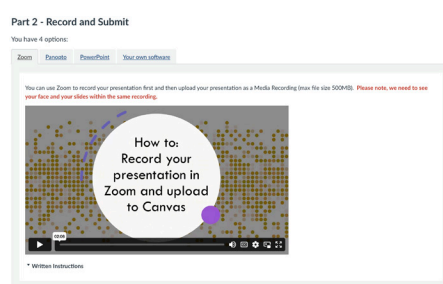
View of instructions in Canvas

We also provided some instructions so students could crop their recordings to comply with the 15 minute time limit.
'You are limited by time so remember to edit your recording so it is no longer than 15 minutes. Instructions: Windows | Mac | Panopto'

Slide Submission Point
This area had a 0 point value. It was set up as a File Upload area for students to submit their slides as .ppt or .pdf, this allowed us to get a Turnitin plagiarism score for each presentation as well as a reference copy of the slides, should anything be unclear in the video recordings.

How did it go?
There was a lot of fear from students initially. We encouraged students to give it a go, informing them that we were not trying to trick them. We provided clear guidance on what we expected and provided a rubric with a breakdown of points, clearly showing only a small percentage of the grade would be based on their presentation style and delivery. The content of the presentation was the most important part!

The use of technology was varied:

Powerpoint 25%
Zoom 33%
Panopto 42%
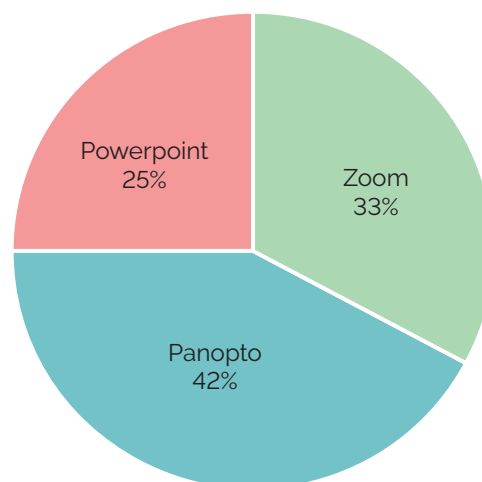
As markers we also had to overcome our fears of technology.

PowerPoint is easier once you know how to access recordings (you have to download the file, then click start slideshow). Sometimes the Panopto recordings were hard to find, especially if students had experience of using the technology in Blackboard and did not follow the Canvas instructions correctly.

Next Steps

- We only provided grades with a short feedback comment last year, we plan to provide more extensive feedback going forward.
- We will add more video content into the module as examples of how to create engaging slides and showcase our presentation styles – hopefully leading by example.
- We would also like to provide examples of a good presentation vs a bad presentation.

Acknowledgements and Resources

Many thanks to those who contributed articles and allowed us to write up the case studies from their teaching.

The QR Code on each article links to the online version of the resource so that you can click through and explore examples yourself. A few of our most frequently-used links are listed below.

Our Canvas Community:
ncl.instructure.com/courses/30988

Our MLE Community:
mle.ncl.ac.uk/cases/case/2429/

The FMS TEL Blog:
blogs.ncl.ac.uk/fmstel/

NU Reflect:
reflect.ncl.ac.uk

360˚ Image Hosting:
www.theasys.io

This collection of articles was drawn from posts on the FMS TEL Blog

To read more posts go to **blogs.ncl.ac.uk/fmstel** or scan the QR Code

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