

Looking to the future in teaching, scholarship and professional practice



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Editorial

Dear Reader

Welcome to the Spring 2022 edition of *Forum* magazine.

In the wake of COVID-19 the last two years have been difficult. In terms of teaching and scholarship the pandemic has introduced many complications and challenges we have all faced as a sector, as communities, and as individuals. Accordingly, the last two issues of *Forum* magazine have included a common thread regarding the adaptability and resilience of the Teaching and Scholarship community at York. This in turn has produced some excellent articles relating to good practice in numerous facets of teaching and scholarship influenced by the pandemic such as remote learning, accessibility, curriculum realignment, and sustaining learning communities under difficult circumstances. As we transition out of the pandemic I am left with a sense that we acquitted ourselves well in the face of these challenges, and feel this reflects strongly on our collective capacity as 'problem solvers'. In short: we rose to the occasion.

It is also worth noting that over the last two years we have largely used our laudable capacity for problem solving to react to ongoing circumstances beyond our control. As such, for the latest issue of *Forum* magazine, I wanted instead to give people a chance to go on the offensive again. How can we proactively face the future rather than just dealing with the here and now? This, of course, includes additional challenges but our resolve should be tempered by what we have collectively been through.

This has resulted in the overarching theme of this issue: 'looking to the future in teaching, scholarship and professional practice'. We have had some fine articles submitted to this edition that highlight numerous ways we can do just that. This includes areas that deserve increased attention, such as enhancing the sustainability of carbon-intensive University activities such as field trips. For the planners amongst us we have an article that outlines a useful metaphorical device for generating curricula. We also have articles focussed on what for some of us may be more proximal concerns regarding student choice and engagement, the personal development of staff, and digital accessibility.

In a first for *Forum* magazine, I am also extremely pleased to include what I hope is the first of many contributions from our colleagues at Maastricht University, our strategic partner in the Netherlands. Specifically, our featured article from Barend Last provides us with a thoughtful discussion regarding the appropriate use of technology in blended learning. Welcome (welkom!) Barend, and thank you for joining us.

This edition of *Forum* marks my first as Editor, taking over from Benjamin Poore from the Department of Theatre, Film, Television and Interactive Media. I want to thank Ben for his excellent contributions as our former Editor: he has worked hard under the aforementioned difficult circumstances to produce three fantastic and engaging issues of *Forum*. I also wish to sincerely thank all our contributors for this issue who spent their valuable time and energy creating the content. My gratitude also extends to Glenn Hurst, Chair of the Learning and Teaching Forum, and Gemma Wheeler in the Academic Support Office for their ongoing support for this publication. A huge thanks also to the *Forum* associate editors for their invaluable contributions: Alex Benjamin, Rebecca Hudson-Tandy, Rachel Hope, Colleen Morgan, and Jane Neal-Smith, and of course our Sub-editor, Phil Robinson-Self. I also greatly appreciate the efforts of Alex Hawes from Design Solutions for her work on the graphic design and formatting for this issue. Thank you everyone.

Alexander Reid (Psychology)
Editor



Enhancing student peer feedback using Padlet

Alex Dawson, International Pathway College

During the International Pathway College (IPC) pre-session programme of summer 2021, I wanted to investigate how international students could use *Padlet* to improve asynchronous communication and the ability to give peer feedback on writing. The module (and programme in general) develops English language and academic study skills, mostly for students about to enter PGT (though with some aiming at UG and PGR). There were 100 students on this particular module (STEM), and the programme was compulsory. Students were shown how to give and receive feedback, and then practised these skills on a piece of weekly informal writing that they uploaded to *Padlet*, a real-time collaborative web platform, which they then shared with a peer. Tutor and student feedback was gathered to help inform future rollout.

Research question: *What are the perceptions of using Padlet for peer feedback on writing skills by pre-session international students and their teachers?*

There were two main anticipated problems with conducting feedback exercises in this way:

1. Student reluctance and engagement with peer feedback. The constructivist/Western approach of individualism and student ownership of the curriculum often differs from the experience of students from a collectivist education system, which may create a passive approach to peer interaction (Loh and Teo, 2017). Students may also feel vulnerable in the area of academic writing in the unfamiliar culture of UK Higher Education (Maringe and Jenkins, 2015).
2. Unfamiliarity with the Padlet platform (for both students and tutors).

Possible solutions:

1. Linking peer feedback with perceived high value tasks by students, such as academic writing and vocabulary use.
2. Including materials on the syllabus to train students on peer feedback. This included *material from the University of York* in order to increase relevance to the students. The teaching approach was scaffolded input followed by flipped learning (rehearsal followed by discussion in the live sessions for tutor support).
3. Introduced training and support for tutors from induction week. I used

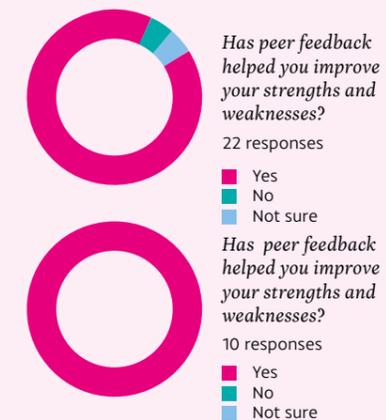
Padlet for other materials and tasks to help familiarisation, and created Panopto guides on how to use the software upon request.

Teaching phase

The first course that the peer writing materials ran was a 10 week pre-session course running from June to September. A second course started in August; this overlap enabled me to survey students and teachers on the 10 week course about the approach to peer feedback and *Padlet*, and then share the results on the five week induction. During induction and team meetings there was discussion on how to approach the student peer writing activities; for example, small discussion groups, students looking at each other's work in advance and preparing positive comments and questions about how they approached the writing etc.

Student responses

The pie charts below show the positive reactions from 32 students on both programmes to the focus on peer feedback. When asked if peer feedback had



helped students' communication skills, over 80% stated that it had, the most common reasons being that it enabled them to rehearse and improve what they wanted to say first, increasing the opportunity for communication and the chances to learn from peers.

When asked how peer feedback had helped their writing skills, the most common answers were that it helped focus on mistakes (and avoid them in future) and also on academic language. When asked about the usefulness of *Padlet* for peer reviews of writing, the following descriptions were used:

- dynamic
- clear interface
- recording function
- shows views intuitively
- more interesting after adding pictures
- share ideas
- convenient
- editing at the same time can better find and solve problems.

Teacher responses

All of the teachers who responded stated that the students had engaged 'well' or 'very well' with it. The materials provided on the VLE were used, and it was positive to see that there were cases of peer feedback and *Padlets* also being used when it was not on the Scheme of Work.

The main areas students struggled with were anticipated cultural issues of politeness and not feeling able to critically review peers' work, perhaps due to confidence and comfort with the situation. Additionally, students sometimes gave superficial feedback as they were unable to locate and/or articulate the feedback effectively. The majority of teachers stated that the peer feedback approach should continue, with more comprehensive scaffolding initially.

Future improvements

- Enhance modelling and training materials: include sample *Padlets* with 'mock' student peer feedback; focus more on team building to build confidence.
- Implement findings from the surveys, and work out ways to transfer to 2022 materials and syllabus (e.g. enhanced language practice for delivering positive and negative feedback with confidence).
- Link peer feedback more to credit-bearing assessment-focused input in future.

References

Due to space limitations the full references for this article can be found in the screen-reader optimised version of this magazine at <https://www.york.ac.uk/staff/teaching/develop/forum/magazine/>



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To blend, or not to blend?

Blended learning is on the agenda of every institute, but the concept is often misunderstood. Is it really a matter of choice whether to start blending?

Introduction

In the past 2 years, the whole of education has been turned upside down. In this period of crisis, teachers worldwide have learned many lessons through the shift to emergency remote teaching and learning. To sustainably embed these lessons 'blended learning', the blending of traditional face-to-face classroom activities with online or digital media, is often presented as the solution. New vision and policy documents about implementing blended learning pop up like daisies. I see phrases like "The future is blended" and "Blended learning is the new normal". Then I wonder, is that the right way forward? Is blended learning really that new? Is "To blend, or not to blend?" even the right question?

A little thought experiment

Imagine this: you are a teacher that is going to teach on a desert island (after Norberg 2011). All you have is a tree, four students and your knowledge. No textbooks, no pencils, no internet, no nothing... How will you teach? Well, you'd probably gather the students below the tree and start talking about your subject matter. After your explanation, you might ask them some questions or start a discussion. That is about the only thing you can do in this situation!

This goes on for a couple of days, until one day a small boat arrives. A boat filled with pencils and empty paper. What a relief! Everything becomes easier: students can work on assignments, make notes, formulate ideas, answer questions...they can create! What now changes in your role as a teacher? Will you still only instruct and ask questions? Or will you start using these new tools? By the way: is it really such a relief? With today's knowledge perhaps yes, but the



introduction of pencils and paper also means you – and the students – have to learn new skills in order to use them effectively.

Let me continue the thought experiment. A week later, another boat arrives. This one is filled with textbooks about exactly your subject matter. Wow, now you don't have to lecture any more! After all, the students can read about the subject themselves. This is great news, because you were already growing pretty tired of spending most of your time explaining things. Instead of you putting in all the effort, you want the students to engage on their own. Even more interesting is that the students can now also read about the subject matter at another location: at home alone, or together with a peer on a different island. You could even design a remote course. What now changes in your role as the teacher?

You understand where I am going with this, right? Because, of course, it does not stop here. The boats keep on coming. One day radio is introduced, another day video, podcasts, internet, access to thousands of tools and possibilities for communication, creation and interaction, and so on... What is now possible? And how do you integrate all these opportunities for teaching and learning into your education? This is where the concept of blended learning comes into play. Because it is exactly this concept that tries to integrate all opportunities

for teaching and learning – all these boats with technological advancements – into one logical whole: the blend. The blend that seeks to enrich learning experiences, by applying different activating strategies and technologies that support them.

Technology and the role of the teacher

When thinking of the technological advancements that we use to enrich the learning experience, it might be a good idea to dive into the concept of "technology" a bit more. Because what exactly is technology? Wikipedia uses the following definition:

"Technology is the sum of any techniques, skills, methods, and processes used in the production of goods or services or in the accomplishment of objectives, such as scientific investigation."

...or education!

This makes it interesting. Because according to this definition, one might argue that when we give technological advancements that support learning a place in education – as we once started doing with the introduction of, for example, pencils and paper – we are in fact already "blending" education since the start of formal education.

However, there is another interesting finding from this back to basics thought experiment. While it is a simplistic characterization of the history of education and multimedia learning it nevertheless, in my opinion, shows us

not only that the role of the teacher is changing, but also how it is changing. It went from narrator to task creator, to facilitator, and to designer. And with all these new opportunities for teaching and learning, new skills come into play as well. Skills needed to deal with all those technological developments in an effective way. And even more: if learning no longer only takes place under the tree, stimulating and motivating students in other locations is just around the corner. This does not necessarily make the teacher's life easier, but it does make it richer. The teacher toolbox grows with every new technological advancement. The role of the teacher is indeed shifting, or even expanding, from instructor to designer. From transmitter of knowledge to facilitator of learning.

Then I wonder... should we try to put all those roles into one person? Does a teacher have to be an instructor as well as technician, a networker and coach? Food for thought. I often see successful teachers who are successful because they work in teams. Together with ICT experts, managers, educationalists, and so on: they must all work together to ensure that students receive the best education that they deserve. That learning takes place as effectively under the tree as in other locations: online, face-to-face, synchronously, asynchronously, alone, together, formal and informal. All brought together in one harmoniously integrated whole.



Imagine this: you are a teacher that is going to teach on a desert island (after Norberg 2011). All you have is a tree, four students and your knowledge.



The real revolution

Time to return to the question from the introduction of this column: Is "To blend, or not to blend?" the right question? Not as far as I am concerned. What I have tried to show is that it is not a matter of choosing between online or face-to-face education, let alone a combination of both. The world has been a blend for many years. Technological advancements have existed since the invention of the wheel. Our education was, and will be blended.

Therefore, my final message is simple: I think we should stop presenting blended learning as the future or the new normal, or as yet another new form of digitization that could lead to the holy grail. As long as we continue to present it as "new" or the "future", it will always feel somewhat intangible and hard to grasp. In my opinion, it is much more important to focus on educational design: where we use technology only if it adds value, aligned with the intended goals.

The added value of blended learning and the revolution we need is not hidden in yet another great new technological advancement, but in its effective use. Technology is not by definition good, and something we can simply stack on top of all existing education. The resulting courses

could be 100% face-to-face, 100% online, and everything in between. That is why I hope that in a few years we will no longer be talking about blended learning, or whatever synonyms are out there, but rather about great education. And what is great education? It is education that achieves all goals, both written and unwritten, within any given context. Because what teacher does not want that?

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Main picture: Pixabay.com.



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Shouldn't our undergraduates experience different taste sensations?

Broadening our student's curriculum, in partnership with industry, could enrich the student experience aiding employability and recruitment.

Take your pick

How do we pick our favourite things in life, such as a chocolate bar? Often, I suspect it will be a case of trial and error. That is, gradually working through a large selection (in my case!) of bars and then narrowing it down to the absolute favourite. This approach is a bit like how students select their degree course – they get a 'taster' of different subjects at school or college – but there are, of course, important differences.

To put chocolate bar selection into more of an educational setting, imagine, as time goes on, that each time you go to the supermarket the selection of chocolate bars that you can pick from rapidly shrinks. Soon you must select your favourite bar and can no longer try any of the others. After a while, you may realise that even though you still enjoy munching on your favourite bar, there are other flavours and varieties that you wish you could try every now and again – isn't variety the spice of life? Perhaps you only had a small nibble on a chocolate bar that you rejected and now wish you had eaten the whole bar? Perhaps you have recently seen the launch of a new and exciting chocolate bar, with a very different filling to your favourite, but it is too late for you to try it. Even worse, perhaps you now find that your favourite bar does not taste as good as it once did, and yet you cannot try any other bars.

I expect most chocolate bar lovers would find this shopping

experience very frustrating! In my world, this scenario is not too far away from the path of UK education – students get a flavour of some subjects, but do not always appreciate the breadth, relevance, and interconnectivity of them, so they specialise far too early through the UK A-level system.

It is not just me who thinks this. Towards the end of 2020, Dame Nancy Rothwell, the current Chair of the Russell Group, said that many young people missed out because they specialise in subjects too early (Woolcock, 2020). Dame Rothwell supports the idea of restructuring A Levels so they are a bit lighter, allowing students the opportunity to take a broader range of subjects giving a more balanced education and, in her view, to be better prepared for university. This is more like the International Baccalaureate Diploma, of which I am a fan, because it allows students to keep the breadth for longer, to cement key skills.

New taste sensations

But even if more college students had a broader pre-university syllabus, shouldn't UK universities offer undergraduates more opportunities to develop their skills and knowledge in different areas? As well as munching on their favourite chocolate bar, shouldn't undergraduates have more opportunities to nibble on other bars, and so experience new taste sensations? I believe so. Not only would a wider choice of learning opportunities help to motivate

and enthuse students, but I believe it could also help better prepare them for their chosen career and make them more attractive to future employers. With these points in mind it will be interesting to see how the interdisciplinary teaching and learning activities, highlighted as part of the university change programme, develop.

Student life could be like a box of chocolates

I would like to see a broader curriculum tackled through a complete revamp of elective modules. A situation where departments offer bespoke optional courses, just for students outside of their departments, with few, if any, prerequisites. These courses would not only excite students about an area of current importance to their subject – from cinematography to climate change, computer systems and criminal justice – but also allow learners to develop valuable employability skills. From a chocolate perspective, the opportunity to create the ultimate selection box! Who could possibly object to that?

For my subject, Chemistry, giving non-chemists from every department the opportunity to study an option module, on say, everyday chemistry, could help to provide them with useful numeracy, problem-solving and practical skills, of potential benefit to their CV. Coupled with this is the opportunity for them to learn some relevant and interesting

science – for example, an understanding of chocolate science could be helpful to students looking for a job in the confectionery industry. Even better, to emphasise the commercial applications, could such courses be delivered with input from industrialists to create a real-world learning experience? Universities are often criticized for not preparing graduates for the workplace (Bridgstock and Jackson, 2019; Abelha, Fernandes, Mesquita, Seabra and Ferreira-Oliveira, 2020), and strategic institutional approaches to tackle graduate employability have involved collaborating with industry.

So, for example, perhaps a chocolate scientist could be recruited to present a case study (how do they create just the right gloss, hardness, and snap in the chocolate?), and follow this up with a workshop to help students to appreciate and develop the skills required for working in the chocolate industry, whether it be in sales, manufacturing or in the supply chain (why does the price of chocolate fluctuate?). Taking the teaching online would ease the time and cost burden on industrial partners and offer opportunities for real-time factory tours and interviews/Q&A sessions with different members of the workforce. Not only could such courses boost student employability, but they could be seen as an attractive USP to prospective applicants, thereby helping undergraduate recruitment. If there's one thing I have learnt after 16 years as the Chemistry Admissions Tutor, it's that students like choice! Also, perhaps such applied courses could help to inspire student

entrepreneurship – for example, what better place than York for students to establish a new chocolate brand!

Back in 2018, I ran a project with two final-year BSc students which explored whether there was an appetite for an everyday chemistry course amongst York students and, if so, what could the course look like. A survey of 63 undergraduate students, on various degree programmes (other than chemistry), showed that 57% were interested or very interested in taking such a module. At a meeting with student course reps, 7 out of the 16 reps felt that students in their department would be interested, or very interested, in such a course. This suggested there was a market, although student feedback indicated that implementing such a course would be far from straightforward. One fly in the ointment, and the problem for many students wishing to take electives, was timetabling. How could space be made in the timetable for, say, a social sciences student to take a 20-credit course in everyday chemistry? Students also flagged that not all departments allow students to take electives in the early years of their degree.

But times change, and if there is a will, there is a way. Could the 'selection box' of optional courses be the only teaching activities timetabled within a protected window in the timetable? Could blended learning help tackle timetabling problems and, for popular courses, space constraints in lecture theatres? Could we develop non-specialist courses, with few, if any, pre-requisites, as is happening in the massive open online course (MOOC) arena (Weale, 2016), to allow participation

of students from a diverse range of educational backgrounds?

A taste of paradise

The recent increase in the use of blended and online learning provides universities with many more tools to offer enriched learning experiences. This includes opportunities to broaden our student's curriculum in partnership with industry. To construct such micro-learning experiences into our degree programmes, across the university, requires a big change in our strategic thinking. For me, the potential benefits of raising the bar in student employability and recruitment, as well as enriching the student experience, are worth the time and effort required. But others may think it a case of sweet dreams.

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Nurturing the 'person' in the professional



Kate Rudd reflects on early experiences of running Schwartz Rounds with health and social care students and looks to future opportunities within professional programmes

'Schwartz Rounds' (Point of Care Foundation/Schwartz Centre) have been running for staff groups in NHS settings for over a decade. Rounds are optional, confidential, facilitated forums where a small panel of staff share stories about their professional practice with an audience. Facilitators then create a non-judgemental climate in which the audience can share reflections that resonate with the stories, and in which discussion is steered away from clinical case related problem-solving. This allows the social and emotional challenges of health and social care practice to be explored, giving voice to the 'person in the professional'. Rounds are highly valued and have a positive impact on staff psychological health and wellbeing (Maben et al., 2018). Increased insight and appreciation for interprofessional roles helps to strengthen the relational and human aspects of caring, leaving staff feeling supported and better able to deliver compassionate care for patients and families.

Currently, we are part of a *Schwartz North Project* with the University of Liverpool to build capacity for Rounds in higher education institutions (HEIs) so that health and social care students can

be supported to deliver compassionate care and develop a holistic insight into their future interprofessional roles. Learning how to embed the model, a small group of us have undertaken Point of Care Foundation training to facilitate Rounds. Attendance at Rounds is increasing and evaluations show that students value hearing other people talk openly about their personal feelings about practice, and that they are more aware of care and compassion in caring for patients. For facilitators, the opportunity to engage in Rounds has proved restorative, reminding us of our professional values and identities which in turn strengthens our support for students to develop professionally.

Urge to teach

However, Rounds in HEIs may have unique challenges. In NHS Rounds, facilitators steer discussion away from 'fixing' the clinical situation; in contrast, shared reflection with other HEIs running Rounds illustrates how, as teachers, we may have an urge to 'teach' about the clinical situation. Resisting the offer of a 'teachable moment' in a Round and instead creating an atmosphere for reflection on the emotional aspects of

experience is a key facilitation skill. Although Rounds are not intended to be a teaching activity as such, they may nonetheless act as an informal curriculum, what Raso et al., (2019) describe as interpersonal interactions sitting outside of formal teaching that shape what students learn. Careful crafting of themes for Rounds and preparation of the panel to share the emotional, more personal story behind their practice is needed so that students experience exemplary professional values. Even though attendance is optional and Rounds are extracurricular, students may still limit what they share for fear of being judged. This is particularly so given that those academic staff facilitating Rounds may be involved in students' clinical assessments (Clancy et al., 2019). These findings speak to the existence of power relationships in student-teacher interactions and serve as a reminder of the need to establish psychological safety in Rounds and maintain fidelity with the Schwartz model. With each Round, we are further enhancing our facilitation skills so that panel members and audiences feel emotionally safe and are able to share their experience and to surface personal meanings about their practice through reflection.

Looking to the future, we are building a local Schwartz community through our Steering Group and are making connections with interested colleagues across the University who see the potential for using Rounds with other professional groups. Our contribution to a new national Schwartz Network for HEIs provides opportunities for continued involvement in Rounds.



...the Covid-19 pandemic means that the students we are educating now will need to respond to ever growing complexity with resilience and compassion.

Whilst professional practice has always presented challenges, the Covid-19 pandemic means that the students we are educating now will need to respond to ever growing complexity with resilience and compassion. Our experience is that Schwartz Rounds can create a meaningful forum for teachers on professional programmes to nurture the 'person in the professional' which may play an important role in student experience and their professional development. Furthermore, engagement with the Schwartz model may be mutually beneficial and offer us as teachers an opportunity to restore our own 'person in the professional'; this opens up a question about the potential value of Rounds for academic staff to reflect on the emotional impact of their professional practice.

Acknowledgements

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Rounds are optional, confidential, facilitated forums where a small panel of staff share stories about their professional practice with an audience.

THEMES OF OUR SCHWARTZ ROUNDS

'A patient I'll never forget...'

'In at the Deep End...'

'What keeps me going to work....?'

'I'm new to this...!'

to 'lead our students by example through environmentally sustainable teaching operations' including travel, paper usage, and other resource-related considerations.

This strategic goal has formed the basis of scholarship research into the sustainability of the Department of Environment and Geography's (DEG) teaching operations, with a specific focus on the carbon emissions generated by fieldwork. DEG runs a multitude of fieldwork activities which include day and residential trips in the UK, as well as international residential experiences. These types of trips are not unique to DEG, nor to York, and are run in other science and social science departments. Fieldwork has many benefits: it can inspire and stimulate academic curiosity, support the student community, develop collegiality, hone observation and measurement skills, and act as an important building block for dissertation research. Its value has been recognised by the Royal Geographical Society with the Institute of British Geographers (RGS-IBG) and the Institution of Environmental Sciences (IES) as integral for Undergraduate and Postgraduate programmes seeking accreditation from their respective learned institutions (Royal Geographical Society (with IBG), 2020a:5; QAA, 2019:4; CHES, n.d.). However, the publication of new field course guidelines by the RGS-IBG in December 2020 have indicated the need for "sustainable fieldwork" that considers and justifies its environmental impact and carbon footprint in the context of learning outcomes (Royal Geographical Society (with IBG), 2020b). The principle goes on to recommend carbon audits of all travel across undergraduate programmes, an annual review of its carbon footprint and running low carbon field trips.

To explore this issue, the project utilises the University of York's carbon calculator which draws upon the Defra greenhouse gas (GHG) conversion factors. Originally designed to support travel-offsetting requirements linked to research proposal development, it was used here to assess and calculate the travel and accommodation emissions generated by the

three international field study visits which make up the bulk of DEG's teaching carbon emissions (see Table 1 below). The table shows the carbon emissions on a per person and 50 person basis. Each of these trips has either required or used return flights (thereby also involving a coach trip to Leeds Bradford airport) which has generated significant levels of Carbon Dioxide (CO₂) as measured in kg equivalent (kg CO₂e) and large potential offsetting costs. If we combine the travel and accommodation CO₂e emissions for the three trips for 50 persons, this generates 106418kg CO₂e (or 105 imperial tonnes rounded up), equating to a carbon offsetting cost of £3,371 for the Department on an annual basis.

There are several key issues that emerge from these calculations. Firstly, it is striking to highlight that a 50 person 3-night trip to Prague (22328kg CO₂e) has almost the same level of emissions as the 7-night Iceland trip (29221kg CO₂e). This not only raises important questions about where educational fieldwork takes place but also how long these trips are for and the way in which field trips maximise their trip duration. Clear discussion based on these trade-offs is therefore paramount.

Secondly, it is useful to understand what the above CO₂e figure equates to in relation to other activities and scenarios. The Stockholm Environment Institute (SEI) provides a powerful example. SEI is an 'international non-profit research organisation that tackles environment and development challenges' (SEI, 2020). Headquartered in Stockholm, Sweden, it has several international regional centres in Columbia, Estonia, Thailand, United States and the United Kingdom, and employs over 170 staff. The 2020 annual report indicated that SEI's air travel emissions are almost 550 tonnes CO₂e (in 2019). In other words, these three DEG international field trips alone make up the equivalent of almost 20 per cent of the total air travel emissions of a major international environmental think tank.

A different comparative example can be considered if one examines carbon footprints (the total of greenhouse gas emissions generated by our actions).

According to data developed for the WWF-UK Carbon Calculator, the average UK carbon footprint, per capita, for a "full consumption" perspective was 10.8 tonnes CO₂e in 2018. On average, per person, this is comprised of:

- 1.36 tonnes from food consumption;
- 2.82 tonnes from personal travel activities (including commuting);
- 2.4 tonnes from emissions from household energy and those related to personal accommodation;
- 1.88 tonnes from consumption of personal effects ("stuff") and recreational activities;
- 2.35 tonnes of emissions from the delivery of public/governmental services on behalf of individuals (WWF, 2022).

Therefore, a vegetarian who doesn't eat takeaways, sources locally, and avoids food waste is estimated to have a food-linked footprint of around 1.1 tonnes over the course of a year, which is roughly equivalent to the emissions of one person going on the Tenerife field trip (1139 kg CO₂e or 1.1 tonnes).

Thirdly, these international fieldwork emissions from a single natural and social sciences department provide a snapshot of the cumulative environmental impact caused by other environment/human geography departments and faculties and wider Higher Education.

Decarbonising fieldwork teaching activities

These international fieldwork trips have fulfilled important educational and learning opportunities for students but there is a clear need to decarbonise these activities given the wider climate crisis, RGS-IBG principles, and the University of York's sustainability strategy. An alternative option Adrian has been exploring is through running low carbon international field trips by making use of the UK and mainland Europe rail network. Table 2 sets out one example by outlining student travels from York to London by train before embarking on an interrail trip exploring Paris, Milan, Venice, and Rome - spending two nights in each of these cities.

The carbon cost of this return 8-night journey for 50 persons, encompassing both travel and accommodation, is 4640.586kg CO₂e with a carbon offsetting cost of £182.02 per year. If this same trip were conducted through coach (return from York-Leeds Bradford) and flights between these European destinations, the carbon costs for 50 people would be 69973.616kg CO₂e and have an offsetting cost of £2,248.67 per year.

TABLE 2: INTERRAIL VS AIR TRAVEL EUROPEAN TRIP (YORK-PARIS-MILAN-VENICE-ROME, RETURN) CO₂e EMISSIONS AND OFFSETTING COST

TOTAL CARBON EMISSIONS FROM TRAVEL AND ACCOMMODATION*							
Carbon Dioxide (CO ₂) in kg CO ₂ e				Offsetting cost total (£)**			
Flights and coach***		Rail****		Flight (including bus)		Rail	
1 passenger	50 passengers	1 passenger	50 passengers	1 passenger	50 passengers	1 passenger	50 passengers
1263.09272	58789.636	164.84926	4640.586	47.1	2,248.67	5.7	182.02

* Accommodation is based on (i) assumed double occupancy x 1 room (ii) two nights in Paris, Milan, Venice and Rome

** default = £26.40 + VAT for EAUC Carbon Coalition offsetting

*** Flights: Leeds Bradford-Paris; Paris-Milan; Milan-Venice; Venice-Rome; Rome Leeds Bradford. Coach: York-Leeds Bradford return

**** York-London King's Cross; London St Pancras-Paris; Paris-Milan; Milan-Venice; Venice-Rome; Rome-London St Pancras; London King's Cross-York

The trip itinerary outlined in this article has been designed as an exemplar to reflect carbon emission distinctions rather than specific student activities and learning in each locality. It also does not consider the higher travel costs that a low carbon option, such as interrailing, would entail. However, there remain important environmental and social benefits. Environmentally, designing a trip that utilises rail travel ensures significantly smaller emissions are generated in comparison to air travel. For students, a multi-destination interrailing field trip would provide sustainable opportunities to learn about different international case studies "in the field", helping strengthen their learning and understanding of different curriculum components. Moreover, it would also help reinforce the positive values inherent in "global citizenship" (such as belonging, responsibility, and political action) at a time when collaboration and partnerships are ever more critical if we are to succeed in combatting "wicked problems" (Stoner et al., 2014).

Ushering in a transition towards sustainable field trips

This project has indicated how important it is for departments to critically reflect on the sustainability and environmental impact of international fieldwork as the University of York moves towards a carbon neutral commitment. It is evident that further scholarship into this topic needs to be undertaken.

Firstly, a comprehensive account of all DEG UK day and residential trips should be undertaken to ensure a clearer understanding of the environmental impact and possible improvements that can be made in this area. This includes running more local, regional, and national field trips

alongside considering other innovative approaches to the design and delivery of this important educational activity.

Secondly, fieldwork carbon calculations for each Faculty and the University should be established to understand where higher carbon footprints exist and how these can be reduced. In this regard, we would be keen on working with colleagues from the Faculty of Sciences and beyond to implement such an initiative, as well as share and collaborate on the best practice for low carbon field trip design.

Thirdly, innovative approaches, such as interrail field trips, should be explored further as they could enable positive synergies between low carbon sustainable travel, international cultural enrichment, and global citizenship.

Lastly, this article has flagged that broader debates on the rationale and feasibility of international fieldwork in the context of the net zero and sustainability agenda must occur to ensure we meet our professional commitments to the environment and the student community. Our ability to address these questions will ensure that Higher Education continues to lead by example.

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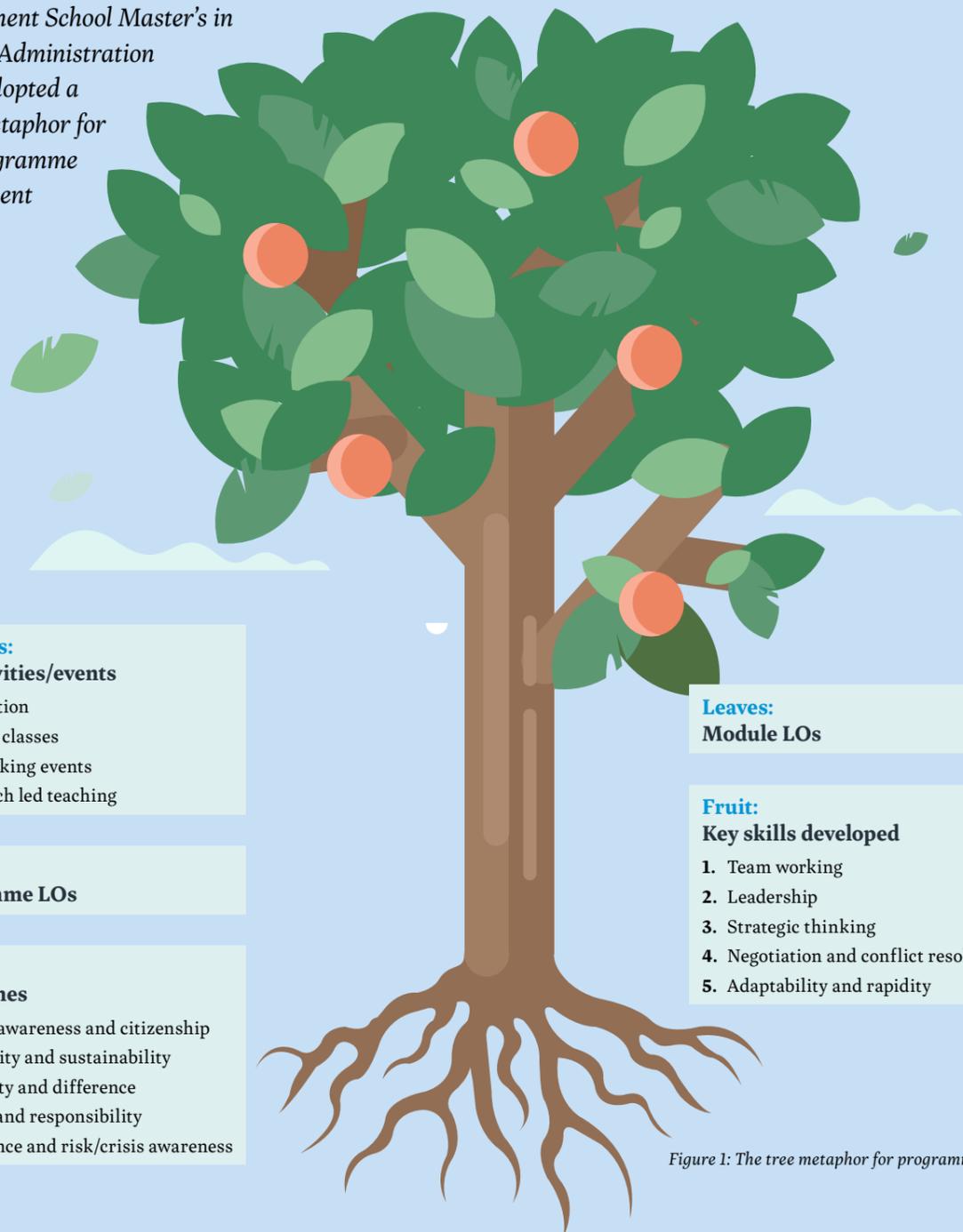
Dr Chris West, Deputy Centre Director for Research, Stockholm Environmental Institute, University of York

“These international fieldwork trips have fulfilled important educational and learning opportunities for students but there is a clear need to decarbonise these activities.”

From small acorns grow mighty oak trees: the use of a tree metaphor to stimulate creative course design

Dr Jane Neal-Smith and Dr Nathan Page

How the University of York Management School Master's in Business Administration (MBA) adopted a useful metaphor for their programme development



Branches:
Key activities/events

1. Simulation
2. Master classes
3. Networking events
4. Research led teaching

Trunk:
Programme LOs

Roots:
Key themes

1. Global awareness and citizenship
2. Creativity and sustainability
3. Diversity and difference
4. Ethics and responsibility
5. Resilience and risk/crisis awareness

Leaves:
Module LOs

Fruit:
Key skills developed

1. Team working
2. Leadership
3. Strategic thinking
4. Negotiation and conflict resolution
5. Adaptability and rapidity

Figure 1: The tree metaphor for programme design

“ We found our metaphor of the tree to be a powerful tool in guiding our design. Creating a course from scratch is less common within higher education than we might expect. ”

The University of York Management School is introducing an online Master's in Business Administration (MBA) this year. This article outlines the use of a useful tree metaphor that not only stimulated much creativity in the design and conceptualisation of our new course, but also helped us ensure that valuable elements, such as sustainability and employability, were kept in mind from the offset. We created this particular metaphorical tree and its uses during initial discussions about the online MBA. We imagined learning outcomes and skills as things 'growing' on a tree that could be 'picked' and taken away (e.g. fruit and leaves), with key underlying themes and enablers as the components needed to make them grow (e.g. roots, trunk and branches).

At the time of initial programme development, the Management School was already running three fully online MSc programmes based on a 'carousel' model of delivery, with six possible starting points per year, and multiple pathways through. Although the current MBA has, in a sense, been redeveloped from these existing programmes we felt it was vital that we introduced our own distinct elements. This was particularly important when it came to embedding new themes, rethinking the outcomes, and ensuring all these components would be achievable.

Committed to social justice

The University of York is committed to social justice and this, like employability, underpins the MBA's course design. We wanted to embed themes for social good, including sustainability, and to make 'citizens of the world'. Ultimately we want our graduates to engage with the 'public good' and to use the skills and knowledge they have developed through the MBA for philanthropic purposes. A challenge, therefore, was to foster these ideals alongside the traditional content of an MBA, which is obviously very focused on business.

How could we create a programme with 'social good' as a core feature of its identity? How could we embed other key themes such as improved employability prospects (Scott et al., 2019) with internationalism and interculturalism as a prominent element (Hains-Wesson & Ji, 2020)? Clearly mapping the different elements of a programme together is not a new thing, however, we found using our visual tree metaphor to be helpful with this process, not least for keeping the different elements 'in view' (visualised) and opening the space for creative thinking in programme design.

The adoption of metaphors in teaching is well documented (Freire, 1972; Mills, 2010; Weimer, 2012). For example, Freire

(1972) described mainstream education using a banking metaphor whereby teachers 'deposited' knowledge into students who were passive and empty 'accounts'. Pitcher (2014) discusses how a water metaphor can be used to teach basic electronic theory because fluid flowing through a pipe can be considered analogous to an electric current flowing through a wire.

We found our metaphor of the tree to be a powerful tool in guiding our design. Creating a course from scratch is less common within higher education than we might expect. Instead, programmes tend to be adapted and combined, with new modules frequently becoming part of an existing portfolio. Visualising a tree enabled us to strongly align the foundation of our programme starting from the bottom, or the roots, and growing from there.

Whitehead's (2009; 2013; 2019) notion of 'living theory' also influenced our approach. Living theory stems from Whitehead's quest to improve his own practice, and is described as an individual's explanation of their educational influences in their own learning. This struck a chord with us - partly due to our own life experiences of small rural schools - and specifically those formative influences on our own learning, both historically and as part of our own continuous professional development. Moreover, the more creative those influences are, the better!

We wanted the experience of the programme to be meaningful and life enhancing for learners. We knew that we had to cover core fundamentals, such as the relevant Quality Assurance Agency benchmark (Category 3 masters degrees; QAA, 2022), and the curriculum content necessary for an MBA. We wanted to handle such core requirements, embed our new themes, and to make the programme as interesting and dynamic as possible. To do this we needed to be creative - there was even a discussion at one point about legends, mythology and fairies. Imagine learning about fantasy characters, myths and legends in Business Management! Perhaps this is what led us down the garden path to our tree?

As mentioned above, this approach

started with a conversation about fruit. Fruit grown on a tree is influenced by environmental conditions (The Royal Horticultural Society, 2022), which led us to think about the conditions of a programme and how all of its different elements come together to create an experience, takeaway skills, and points of learning. This idea is shown in Figure 1.

We saw the key themes as **roots**, as these underpin the whole design, giving it a solid foundation. These feed into the programme learning outcomes (PLOs), shown here as the **trunk**. We imagined PLOs as the core structure, running through the middle of the programme and giving it stability. From a design perspective, visualising the key themes as 'feeding into' the PLOs was helpful. It enabled us to keep those key themes clearly in mind as subject-specific outcomes were written.

Right place to grow

Moving upwards, the branches are then seen as enablers of outcomes and skills. Branches are as necessary for growing fruit and leaves as the roots or trunk: along with foundations and stability, outcomes need the right place to grow, and the right mechanisms for growing. This is only logical but, again, the tree enabled us to see these connections clearly, and to be creative when planning ways to foster the optimal conditions for learning the chosen PLOs. As already mentioned, and completing the metaphor, we saw the **leaves** as module learning outcomes (MLOs) and **fruit** as skills, all of which can be taken away by the learner.

So how did this work in practice? Underpinning the course were five key themes drawn from the University's strategic plan influenced, in particular, by being a university for public good (University of York, 2021). For example, if we take the theme of 'global awareness and citizenship', which is one of the roots feeding into PLO2 in the trunk (*Develop and refine skills that make an effective leader able to facilitate a range of business operations in a professional, ethically responsible and culturally aware manner*), this is then 'enabled' through

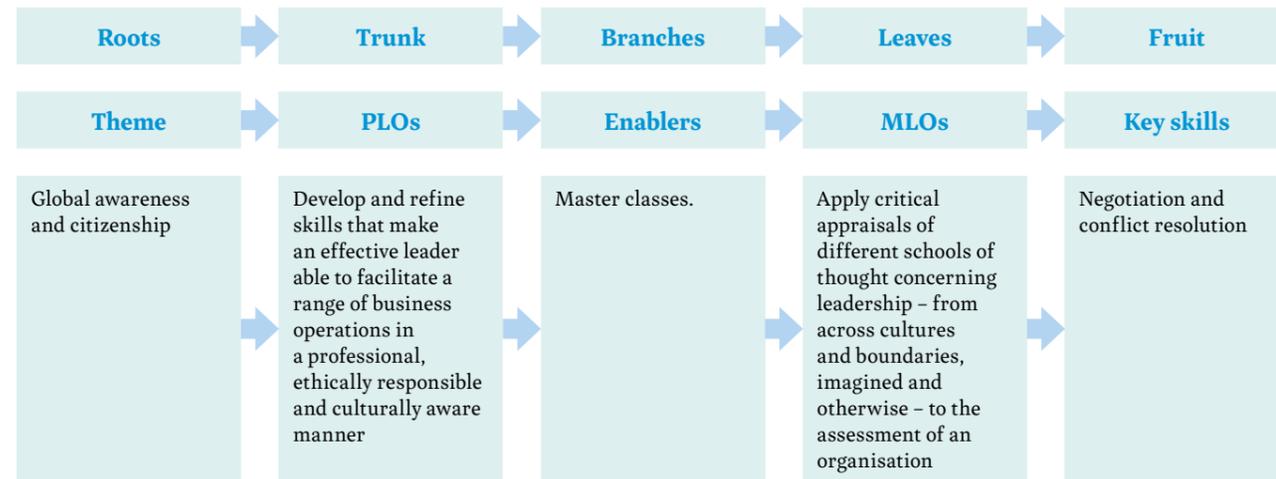


Figure 2: Mapping the tree metaphor onto a thematic framework for course development

participation in activities depicted on the tree **branches**, for example master classes. This is then assessed in a MLO (*Apply critical appraisals of different schools of thought concerning leadership - from across cultures and boundaries, imagined and otherwise - to the assessment of an organisation*) which is represented by one or more **leaves**. Finally the key skills are seen as **fruit**; here, for example, leading to skills in negotiation and conflict resolution (see Figure 2).

All strategic themes were mapped through the metaphorical processes outlined above, meaning that the overall programme was aligned and logically interlinked. Moreover, we had the opportunity to be creative and coherent in the design stage. This also has the benefit of allowing a clear path to be seen between the summative assessments and the key themes of the MBA.

To conclude, we found the visual metaphor of a tree to be incredibly useful when designing our programme. Would a different metaphor produce a different course? Perhaps, but a tree is organic, holistic, and symbolises interconnectivity. All of these are integral features of an effective programme, and the tree metaphor enabled us to visualise constituent elements as part of a meaningful whole. We also expect it to be useful when it comes to future revisions and refinements by ensuring that subsequent changes do not damage the alignment of the course or detract from its original themes. It also ensures that we remain faithful to the original ideas and PLOs enshrined throughout development.

We wanted to share this approach with the University community in case others

are also able to derive benefits from it, be it through new programme development, or through the review and redevelopment of existing courses. We believe that the approach could be used for embedding any type of skills or themes, for example research skills, digital literacy, a decolonised curriculum, or professional body requirements.

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Developing digital accessibility using R Markdown



Remote teaching during the pandemic accelerated the move towards writing teaching materials in accessible and inclusive ways.

Digital accessibility has become a must in Higher Education. However, the main document format used in teaching, especially in STEM subjects, has consistently been the PDF. As the dissemination of teaching content moved from paper-based to digital, the PDF document revealed its shortcomings in terms of accessibility. For instance, the semantics of a mathematical expression in a PDF document would not be accessible to a visually impaired or blind person. This raises important considerations. Have you tried to read a PDF document on a mobile phone? How can we, as educators, produce materials that can be made digitally available and accessible?

A reader from an academic subject within Humanities or Social Sciences might say that Microsoft Word or PowerPoint are perfectly acceptable, and indeed more accessible, alternatives to PDF documents. Unfortunately, documents in these formats can (and will) display differently in different devices or operating systems, especially if the document contains symbols or mathematical expressions, making them undecipherable to everyone. That's why, despite requiring a steep learning curve, LaTeX (<https://www.latex-project.org/>) has been the common software of choice to write documents with mathematical content for decades in academia. Before digital accessibility came to the forefront of the education agenda, the decisive advantage of using LaTeX was the output: a beautifully formatted PDF document where mathematical expressions will display correctly in any operating system.

However, in a digitally accessible environment this isn't enough anymore.

A better alternative is to use Markdown, originally developed by John Gruber, to allow web writers to produce HTML files through a plain text formatting syntax that is both easy-to-read and easy-to-write. One could also argue that, because by design it is so simple, this makes it a more inclusive tool for producing academic materials. Educators can use it without requiring any prior programming knowledge. Despite its straightforward syntax, Markdown also allows a large number of features including, but not limited to, tables, footnotes, mathematical expressions, citations, links and figures. A user-friendly interface is R Markdown (<https://rmarkdown.rstudio.com>), which uses John MacFarlane's Pandoc package (<http://pandoc.org>), to convert the user's Markdown-formatted plain text into a variety of possible output formats, such as HTML, MS Word, PDF, RTF, EPUB or PowerPoint. The HTML output is particularly interesting for producing digitally available accessible documents.

Easier to learn

There are several additional advantages to Markdown. From a practical standpoint, Markdown is much easier to learn than other markup languages such as LaTeX. People without any programming experience can produce high-quality scientific documents using Markdown. Users with basic knowledge of LaTeX syntax can, with Markdown, produce documents with fully accessible mathematical expressions detectable by screen readers. One Markdown plain text source can be used to produce documents in multiple output formats. This can, for instance, be useful for providing a downloadable PDF or MS Word version of a digitally available source constituted by multiple HTML pages.

Markdown can be used to not only improve the accessibility of the output documents on the student's end, but also to improve the technical quality of the documents produced by the students

themselves. First, it allows students without programming knowledge to quickly learn Markdown's simple syntax to produce high-quality documents. Second, visually impaired students (and educators) can use Markdown to produce scientific documents as the process can be fully controlled by a keyboard using plain text. This can be achieved through the Accessible RMarkdown Online Writer (AROW, <http://www.arowtool.com>): see Seo and McCurry (2019).

During the pandemic, confronted with the lack of accessibility of PDF documents and the need to move completely online, the author wrote all the teaching materials for two modules on life insurance mathematics in HTML using R Markdown. Because the programming language used in these modules is R, a further advantage of R Markdown is that R code 'chunks' can be inserted into the document. It became ideal for lecture slides, seminar questions and formative assessments. A larger multipage HTML document with the lecture notes was also very well received by students who would often use this document both in and out of class. Comments from anonymous module student feedback were "lecture notes were clear and well produced", "well organised lecture notes", "absolutely beautiful lecture notes".

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Support, development and recognition for LEARNING AND TEACHING

2022 Learning and Teaching Conference – Friday 18 March – in person and online

Registration is now open for the conference, which has the theme ‘Working together to develop a university for public good’. The keynote speaker is Professor Udy Archibong MBE, Pro-Vice-Chancellor (Equality, Diversity and Inclusion) at the University of Bradford. The conference sub-themes are:

- Creating international education for life-long learning and impact
- Empowering students and widening participation: home and international
- Ethical practice to foster a culture of respect and appreciation
- Pandemics and the technological response.

Click this link to register for in-person attendance by Friday 11 March and for online attendance by 12 noon on Thursday 17 March.

Support for Technology-Enhanced Learning (TEL)

Technology enhanced learning refers to the use of online systems and tools in support of learning and teaching activities. TEL support at the University of York is provided by the Programme Design and Learning Technology team. The team offers individuals and Departments support in the design, delivery and evaluation of learning technology interventions at the activity, module and programme level. This includes guidance on the use of the University’s centrally-supported virtual learning environment Yorkshare, and advice on a wide range of supporting learning technologies and activities including Replay for creating, editing and sharing videos, the anonymous assessment submission tool for online assessment, Menti for live polling, Padlet for collaborative activities, and Blackboard Collaborate for running online synchronous sessions. For more information, see the *PDLT webpage*.

Blended Learning Design and Delivery

The ‘Blended Learning Design and Delivery’ resource is available to all staff on the VLE aiming to support the design and delivery of integrated in-person and online teaching and learning.

The design sections of the site focus on combining in-person and online modes of delivery to best effect. They also offer support with planning assessment and evaluation of blended learning modules.

The teaching/facilitation section focuses on supporting inclusive learning communities and groups and designing and facilitating synchronous and asynchronous learning activities in-person and online.

Supported by examples, the site is targeted at module leaders and all staff who teach or support student learning, including Graduate Teaching Assistants (*GTA Access request form*).

To access the site, staff can log into the University Virtual Learning Environment (Yorkshare) and search in the list of modules for ‘Blended Learning Design and Delivery’.

Support from the Library, Archives and Learning Services (LALS) for modularisation and semesterisation is available

Please be aware whether you are developing a new course or programme, or adapting an old one, the *LALS team are here to help*. Let us know what you need as early as you can so that we can support you fully. We are happy to attend meetings, provide relevant training and advice.

For all Library enquiries please contact your *Academic Liaison Librarian* in the first instance. They will discuss your needs

with you and put you in touch with relevant colleagues.

Contact us via these clickable links:

- *Academic Liaison Librarians*
- *The Borthwick Institute for Archives*
- *Digital Scholarship & Engagement team*
- *Programme Design and Learning Technology Team*

Learning and Teaching Forum mailing list sign-up

If you would like to receive communications from the Learning and Teaching Forum, *please complete this linked form*. Our mailing list will keep you informed about all our workshops, our annual Conference, and any other Learning and Teaching Forum news.

If you have any questions, please contact the Learning and Teaching Forum Committee via *learning-and-teaching-forum@york.ac.uk*.