UNIVERSITY OF ABERDEEN

13ᵀᴴ ANNUAL ACADEMIC DEVELOPMENT SYMPOSIUM I **THURSDAY 5 MAY 2022**

GLOBAL COMMUNITIES: BUILDING COMMUNITIES AND IMPROVING COLLABORATION POSTERS

INTRODUCTION

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

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

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

- Creativity, visual appeal and flair of the poster.

- Legibility, is the poster information clearly communicated?

- Balance of text and diagrammatic information.

- Succinctness of the information presented.

- Innovative teaching and learning or research content.

VOTING INSTRUCTIONS

Using the guidelines above, please cast your **ONE** vote by scanning the QR code below or by following this link: **https://forms.office.com/r/57ETsRS0jW**

Voting closes on **THURSDAY 5 MAY AT 14:45**. Professor Ruth Taylor, Vice-Principal (Education) will present the prizes for the 'best judged poster' and 'highly commended poster' at 16:05-16:15.

YOUR VOTE WILL BE ANONYMOUS.

POSTERS

UNIVERSITY OF ABERDEEN — 1495

Open To All

Informal discussions on seeking to turn the aim into a reality

Our students studying abroad

What if our students are facing issues that we would not match our expectations for our own campuses?

How can we provide community if a student studying abroad feels isolated or ignored?

Beyond Protected Characteristics

Some staff and students don't have an easy time and there can be many reasons for this.

How do we become more aware of circumstances and may fall outside the important "protected characteristics"?

Examples: care experience, estrangement from family, veterans, refugees and asylum seekers….

Compassion – an effective organisational tool?

We need "rules" but context is also important in considering the application of rules.

How do we balance "fairness" of the same rules for everyone with equity – meaning the adjustment of rules recognising issues and making adjustments?

What would you want to raise and discuss?

topics discussed

Critical Thinking & Culture

Students come from many cultures, bringing differing experiences of teaching. Some have focused on transference of facts or developing frameworks of thinking.

How do we help students adapt, especially on short PGT courses?

Extraversion, Introversion and Ambiversion?

Balancing opportunities for those who find participation easy with those who might not find it as natural but may have at least as much to share in a discussion.

Recognising that this is a continuum and not a binary issue.

Background

- Thanks to the Principal's re-emphasising of the University's original aim of "Open to all and dedicated to the pursuit of truth in the service of others", we have a clear imperative to seek to remove any barriers for students and staff as we aim to be inclusive.

- We know that such phrases are easier to state than they are to work out in practice. Life is complex and we struggle to understand how our attitudes, our systems, our language and, perhaps, even just continuing as we always have, impacts members of our community (or stops some from joining the University community at all).

- An informal organising committee of staff and students have considered potential topics for discussion and sought to gently facilitate a once monthly hour long session where we can discuss, learn and consider issues that may be an impedance to access or learning.

- This journey started with a series of events in Summer 2020 where staff and students collaborated in "Supporting Learning for Students from Diverse Ethnic, Cultural and Educational Backgrounds".

- In addition to "Open to All" events, we also host The Celebrating Diversity blog.

Reflections

- Awareness that we are all in this together (not just teaching people influence the impact of teaching).

- Access isn't just getting on a course but having an opportunity to thrive on it.

- There are many colleagues who are seeking the best for students with widely varying situations (equity rather than equality as an objective).

- Talking together can help make progress and realise that we are each not alone.

- The chance to drop in, listen, raise a concern.

- A comment in passing in one session can lead to a future full hour discussion.

- Finding you are not the only one with a concern, that there are no hidden answers.

- Online means easy access – staff from around the globe can attend.

- None of us has the life experience to be an arbitrator without listening with an open mind.

So much to think about if we are going to take "Open To All" as a core value – we hope you will take the challenge to join the conversation to move us forward as a welcoming, listening, accepting and enabling community! Contact one of us to become involved:

Abbe Brown (Law and Dean for Student Support), Ondrej Kucerak (AUSA Vice President for Education), Cheryl Dowie (Business), Amudha Poobalan (Medicine, Medical Sciences and Nutrition), Julie Ross (Centre for Academic Development) and Mark Whittington (Business)

Building Resilient Learning Communities
in the PGDE Secondary Education Programme
AUTHORS: FAYE HENDRY, STEPHANIE O'REILLY, ALAN GRIEVE | SCHOOL OF EDUCATION

POSTER TOPIC BACKGROUND & AIMS

Our PGDE Secondary Education programme offers students an opportunity to become registered secondary teachers over the course of 36 weeks.

This comprises:
- 18 weeks of university-led learning
- 18 weeks of placement in two Scottish secondary schools.

gtc SCOTLAND

Accredited by the General Teaching Council for Scotland (GTCS)

Our programme was re-designed and refreshed in 2019 in line with both:
- the most up-to-date needs of Scottish pupils, schools and teachers
- the most current educational research.

Creating **resilient learning communities** has always been at the heart of what we do on the programme.

Never more so than during the Covid-19 pandemic, over the past few years, it has been crucial to ensure that our programme design, our pedagogy, our assessment processes and our supports equip our students to become resilient, enquiring and reflexive classroom practitioners.

OUR POSTER OUTLINES SOME OF THE WAYS IN WHICH WE HAVE DONE THIS, FOCUSING PARTICULARLY ON OUR **flexible and accessible learning patterns** and our use of **student-led activity**

1. PROGRAMME DESIGN PRE-COVID

FLEXIBLE & ACCESIBLE LEARNING

- Taught provision consolidated into two consecutive days on campus, Tuesday and Wednesday, for all students. This supports student access, particularly for those who travel and/or book accommodation in Aberdeen to undertake study, minimising cost and being mindful of life commitments.
- On-campus learning supplemented by an enhanced, asynchronous online provision, which offers flexibility for learning at any place or time.
- Details of all on-campus and online sessions mapped out at the start of the year (see figure 1.1).
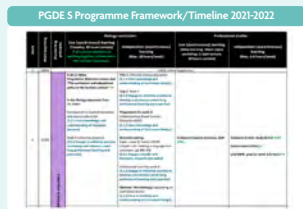
PGDE S Programme Framework/Timeline 2021-2022

Fig 1.1 Extract from Programme Timeline, mapped against GTCS Standard for Provisional Registration (GTCS, 2021)

STUDENT-LED ACTIVITY

- **Flipped Learning** - Professional Studies tutorials use a flipped learning model (cf Bergmann and Sams, 2012, etc.), encouraging students to explore initial individual thinking, and lead learning in online discussions, prior to collaborative tutorials; this further develops a range of perspectives across subjects and builds the autonomy and resilience required to be successful life-long learners and effective classroom practitioners.
- **Active Learning** - Curricular and Professional Studies tutorials involve a wide range of interactive, student-led pedagogical approaches such as group discussion, group projects, group presentations, quizzes, carousel and jigsaw activities, micro-teaching, etc.
- **Interactivity in Lectures** - Lectures draw on prior reading, thinking and discussion, and can therefore involve discussion, quizzes, and greater contribution from students than in traditional lectures.
- Through all teaching, we aim to model the pedagogies students will want to utilise in their own practice, thereby creating **resilient**, collaborative engaging and dynamic educational professionals for the next generation.

2. PROGRAMME COVID RESPONSES AND INNOVATIONS

IRIS CONNECT

FLEXIBLE & ACCESIBLE LEARNING

- **School Placements** - school placement dates were changed, and remained **flexible**, in light of whole school closures. The programme worked with local authority partners to ensure student risk assessment processes were conducted and health protection measures (eg mask wearing, changing isolation periods) were followed. Changes to dates were mindful of school staff workloads and pressures.
- **Virtual School Visits** - students were assessed on school placement via video recording software (IRIS Connect), rather than in-person. This new assessment approach required **flexibility** from University tutors, students, school colleagues, local authority partners and the GTCS, with all sharing the aim of maintaining fair and robust assessment standards. Agreements were achieved with all 10 local authority partners and protocols were put in place for the use of IT equipment. Additional staff and student training was also undertaken.

STUDENT-LED ACTIVITY

- **Online Teaching** - all teaching moved online, using Blackboard Collaborate, whilst maintaining the synchronous/asynchronous model of delivery. All lectures and tutorials were delivered live with improved interactivity (eg use of polls, whiteboards, breakout groups, student-led learning).
- **Digital School Experience Files** - students maintained a digital file (via Google Drive) to be able to share lesson plans, resources, reflections and school-based evidence in a 'live' manner with tutors prior to a school visit being conducted.
- **Changes to Course Content** - appropriate changes were made throughout the programme to prepare students for teaching in a modified school environment - eg focus on digital learning and the pedagogical impact of in-class restrictions such as pupils wearing masks and the challenges of group work. Building aspects of **resilience** and **flexibility** early in the programme helped to prepare students for school placements.

3. PROGRAMME POST-COVID LEGACY

FLEXIBLE & ACCESIBLE LEARNING

- **Digital School Experience Files** - which can be shared with any tutor, any time. Instant access for student support and challenge.
- **Extended Pastoral Support Opportunities** - digital 'check ins' with students all over Scotland when students need additional support.
- **Additional Drop-In Sessions Online** - (to support SE, assessment etc) allows for students to connect without being on campus.
- **Student 1-2-1s (Digital Office Hours)** - particularly good for students not based in Aberdeen.

STUDENT-LED ACTIVITY

- **Digital School Experience Files** - which can be shared with any tutor, any time. Instant access for student support and challenge.
- **Innovative, responsive live teaching methods** e.g. sharing of videos, interactive whiteboards, anonymous student input/questions during lectures.

"The diversity in the cohort is brilliant and everyone is treated equally regardless of whether they completed their undergraduate degree last year or decades ago. There is an embedded sense of community formed between programme staff and students... This course is jam-packed with career-enhancing information, delivered in a variety of methods. A significant chunk of the learning is interactive, yet there is a reasonable amount of independent learning. This helped me to manage my time effectively and fit the course around my life."
G. Pinson, PGDE Mathematics Student

"The course entails a lot of asynchronous online learning, which made it easy for me to organise my time. I have a great rapport with my peers, we are all so supportive of each other and are all happy to share our resources with one another."
D. Steedman, PGDE Modern Languages Student

REFERENCE LIST:
- Bergmann, J., & Sams, A. (2012). Flip Your Classroom: Reach Every Student in Every Class Every Day (pp. 120-190). Washington DC: International Society for Technology in Education.
- General Teaching Council for Scotland (2021). Standard for Provisional Registration. Available: https://www.gtcs.org.uk/wp-content/uploads/2021/09/standard-for-provisional-registration.pdf. [Date Accessed 16/3/22]
- https://www.irisconnect.com/uk

1495 UNIVERSITY OF ABERDEEN

EVALUATING PROBLEM-BASED LEARNING IN HUMAN FACTORS ENGINEERING AT THE SCHOOL OF ENGINEERING
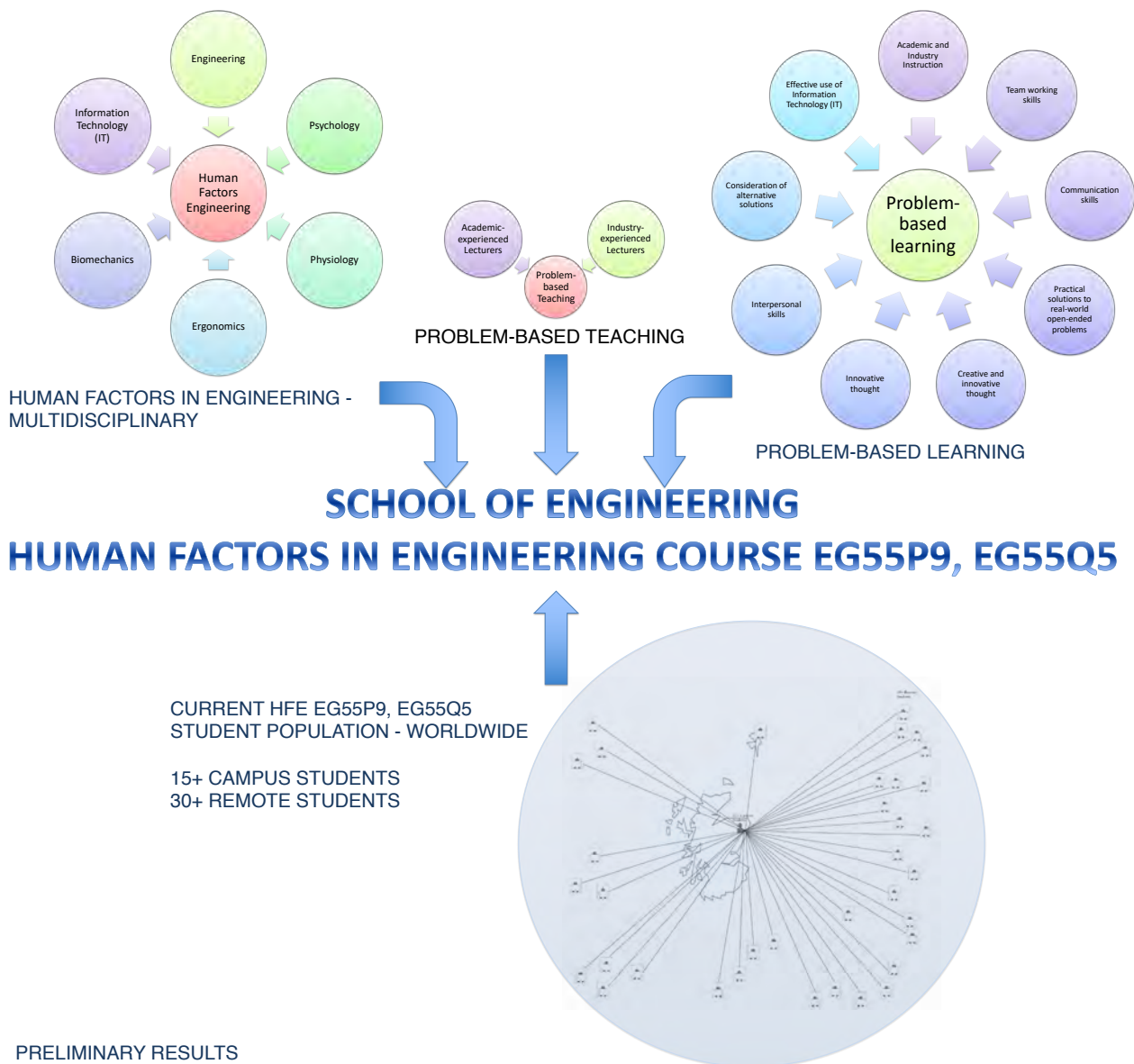
Authors: Dr Maureen Jennings, Dr Henry Tan, Dr Waheed Afzal, Dr Fawaz Bitar

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SUMMARY

The School of Engineering at the University of Aberdeen is evaluating the introduction of problem-based learning to part of its postgraduate human factors in engineering course EG55P9, EG55Q5. The work is being funded by the Royal Academy of Engineering (2021 – 2024). It strongly aligns with the University of Aberdeen 13th Annual Academic Development Symposium and the current QAA Scotland Enhancement Theme 'Resilient Learning Communities' as it recognises the needs of, and seeks to increase the employability of, higher education students within Scotland and globally in an increasingly diverse and rapidly changing environment. It also seeks to provide a flexible and accessible learning environment for all eligible students worldwide, improve long term knowledge retention and understanding, and enhance the effective application of gained knowledge in industry.

HUMAN FACTORS IN ENGINEERING - MULTIDISCIPLINARY

PROBLEM-BASED TEACHING

PROBLEM-BASED LEARNING

SCHOOL OF ENGINEERING

HUMAN FACTORS IN ENGINEERING COURSE EG55P9, EG55Q5

CURRENT HFE EG55P9, EG55Q5
STUDENT POPULATION - WORLDWIDE

15+ CAMPUS STUDENTS
30+ REMOTE STUDENTS

PRELIMINARY RESULTS

Preliminary analysis indicates that, overall, the 2021-2022 students demonstrated a strong willingness to participate in problem-based learning on the course. One early identified observation was poor time management exhibited by some students.

KEY REFERENCES

Atkinson, H. and Pennington, M., 2012. Unemployment of engineering graduates: the key issues. Engineering Education. Vol. 7, Issue 2, pp. 7-15

Kovesi, K. and Csizmadia, P., 2016. Industry perception of new engineering graduates: the gap between requirements and reality. 44th SEFI Conference, Tampere, Finland.

EMBEDDING THE INDUSTRIAL CONTENT IN ENGINEERING TEACHING
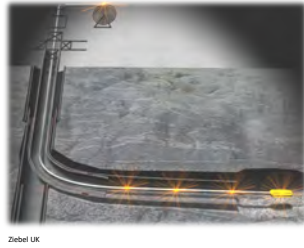
Fibre reinforced composite pipe design KTP and Norwegian Research Council industrial projects

School of Engineering
Dr M. Menshykova
Dr O. Menshykov

Numerical modelling & software development

Testing

Contributing to individual UG / PG projects

outer pressure
axial force
thermal load
bending load
torsion load

material testing
pipe testing

Stress and failure analysis

Prototype design

Safety zones
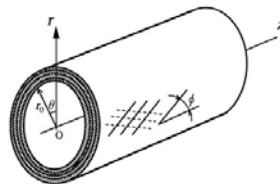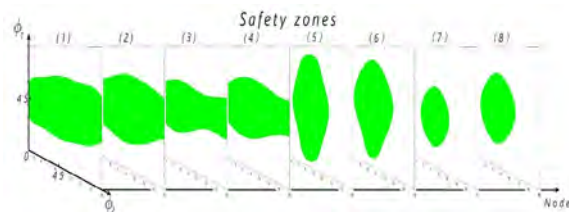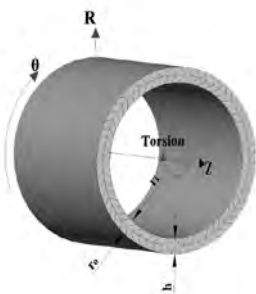
Herakovich, C.T.: Mechanics of fibrous composites. John Wiley and Sons, Inc. (1998)

Prototypes production and testing

Pictures: http://www.epsilon-pultrusion.com
http://www.pultrex.com/production-machinery/pultrusion/pullwinding/

Ziebel UK

An evaluation of Medical Sciences skills to inform Co-curricular Enhancement

👤 John Barrow, Derryck Shewan, Pietro Marini, Steven Tucker, Derek Scott, Gordon McEwan, Martina Cafiso

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Institute of Education in Healthcare and Medical Sciences, School of Medicine, Medical Sciences and Nutrition
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Scotland

INTRODUCTION

- Although the achievement of good academic qualifications in University is still highly valued, it no longer appears sufficient to secure employment (Yorke, 2006).
- Students have identified the need to develop greater confidence related to their employability skills (Jassal, 2018).
- To boost the employability potential of students, universities could enhance the student learning experience through the inclusion of skills development opportunities within or alongside curricula.
- In order to achieve the above, it seems necessary to define a standard set of skills that both employers and students can refer to, so as to increase students' awareness of their personal growth and their employability potential during their studies and after graduation.

METHOD

Literature review — Identification of the skills and attributes required by employers and/or scientific societies.

Survey delivery — Collection of students, graduates, university staff and external stakeholder's opinions on the essential skills and attributes.

Collection of feedback, findings and opinion — Contribution to the creation of a 0-credit co-curricular course focused on the development of employability skills.

RESULTS

- Overall, the survey gathered 144 responses. The majority of the responses are collected in the student community with 68.5% students and 16.1% graduates.

University Staff 9.1%
Employers 6.3%
Graduates 16.1%
Students 68.5%
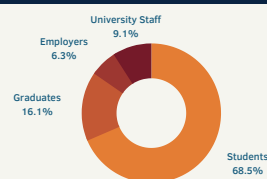
Skills and competencies

- Skills and competencies are defined as specific abilities to perform a given job, and they are acquired or learnt with practice and can be mastered (OED).
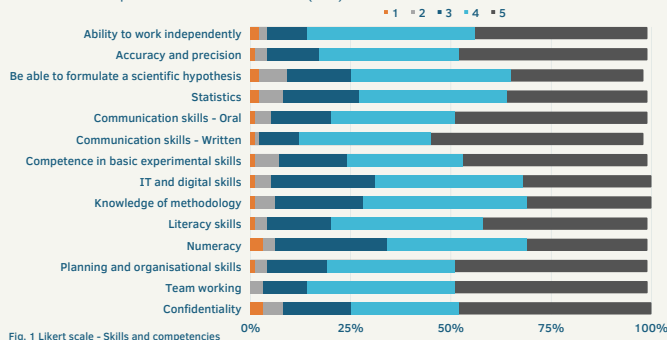

Fig. 1 Likert scale - Skills and competencies

- The respondents were asked to rate 14 skills on a scale from low (1) to high (5) importance; the selected skills and competencies have on average ranked above 3 on the Likert scale.
- The bar graph (Fig.1) depicts the average response of each group of participants.
- Communication skills - Written (86%), Team working (85%), and Planning and organisational skills (80%) were rated between 4 and 5 among all the selected skills (Fig.1).
- Numeracy, Methodology and IT and digital skills scored the lowest importance rates, with around 30% of the responses being collected between 1 and 3 on the Likert scale, although the average response was above 3 (Fig.1).
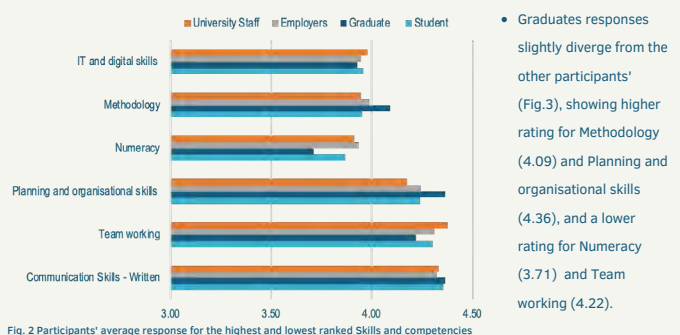- Responses are evenly distributed among the four groups of participants (Fig.2).

Fig. 2 Participants' average response for the highest and lowest ranked Skills and competencies

- Graduates responses slightly diverge from the other participants' (Fig.3), showing higher rating for Methodology (4.09) and Planning and organisational skills (4.36), and a lower rating for Numeracy (3.71) and Team working (4.22).

Attributes

- Attributes are natural qualities that describe the attitudes and approaches towards learning and knowledge, and skill performance; usually, they are not taught but developed through experience (Bowden *et al*., 2000).
- The respondents were asked to rate 16 attributes on a Likert scale from low (1) to high (5) importance.
- Similarly, the selected attributes have been positively rated.
- Problem-solving and Concern for details were considered the most important attributes, with 90% of responses collected between 4 and 5 (Fig.3).
- Being a Risk-taker, and so the ability to accept challenges, was the attribute with the lowest importance rating, collecting 49% of the responses among 1 and 3 points of the Likert scale (Fig.3).
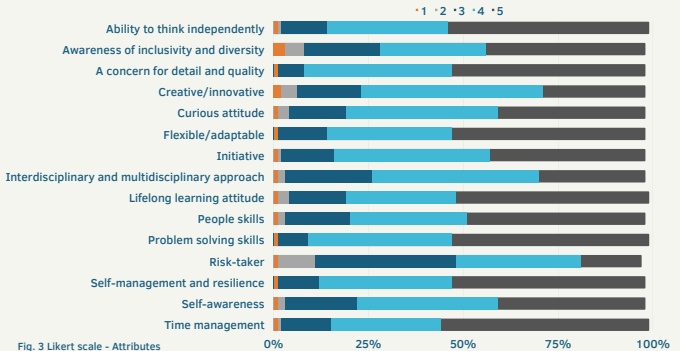

Fig. 3 Likert scale - Attributes

Zero-credit course?

- The pie chart (below) depicts participants' opinions on the importance of a zero-credit course in improving students' future employability; the employed criteria were: little (1) to very useful (5).
- Feedback and keywords representing respondents' opinions regarding skills and graduates' employability are collected in the box below.

1 — 0.7%
2 — 4.3%
3 — 18.4%
5 — 38.3%
4 — 38.3%

"[...]embedding them in the culture of the University and courses."
"SKILLS ARE NOT NECESSARILY TEACHABLE"
"EXTREMELY VALUABLE"
"[...]mentoring should be included. 0-credits English courses to promote language skills development."
EMPLOYERS ARE MOST INTERESTED IN EMPLOYEES WITH INITIATIVE, AND CONFIDENCE
"practical course"
"lifelong ambition to learn is the key"
"IT WOULD BE BETTER A CREDIT BEARING COURSE"
" Students need to be placed in situations where teamwork allows them to learn from others and understand the value of their own contribution."

CONCLUSION

- The skills and attributes selected out of the literature review ranked on average above 3 on the Likert scale.
- Interestingly, all participants are in complete agreement with the importance of both the selected skills and competencies and attributes; overall, students' and graduates' perspectives mirror those of employers and university staff.
- 77% of respondents strongly agreed that a zero-credit course would be beneficial to students' employability.
- Overall, the study confirmed the need to support skills development during students' academic careers to better fit into the "emerging performance economy" (Jassal, 2018).

Bowden, J., Hart, G., King, B., Trigwell, K. and Watts, O., 2000. Generic capabilities of ATN university graduates
Jassal, P. K., 2018, PhD Work = Learn Future Institute for the Future, Skills Development Scotland
Yorke M., 2006, Employability in Higher Education: What it is — What it is not. York: Higher Education Academy

BE THE CHANGE
using Instagram ♡ ◯ ▽
to **educate**, **empower** and **inspire**

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UNIVERSITY OF ABERDEEN

NHS Highland

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01 Background

Students and trainees indicated that they viewed quality improvement as a **dull, tick-box exercise**. Some had ideas to create change but did not know where to start.

Feedback showed that our learners have a favourable view of using social media for education, and our content on the Highland Medical Education Instagram page had already reached over **70,000 accounts.**

@highlandmeded

02 Objective

We wished to inspire and empower our learners to create change within their organisation.

(Scan the QR code to go to the Instagram page)

03 Method

We organised a five-day event. Each day we shared one step in the journey to creating change.

Using posts, stories, and reels, we introduced our followers to change management principles and shared quality improvement methods.
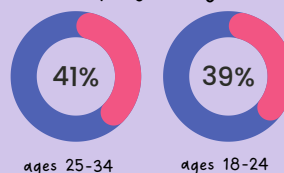
We also included an inspirational message from a different change leader each day. Professor Jason Leitch and Dr Emma Watson both shared video messages.
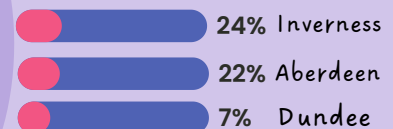
04 Results

(Selection of Instagram data, April 2022)

292 accounts engaged
7,200 accounts reached
37,000 content impressions

Reached Audience
Top age ranges

41% — ages 25-34
39% — ages 18-24

Engaged Audience
Top towns/cities

24% Inverness
22% Aberdeen
7% Dundee

05 Feedback

From thirty feedback submissions:
- 100% felt inspired to create change.
- 100% wanted to see more on quality improvement and change management.

"Feel more empowered to approach people with my ideas and ask for support with developing them."

"Brilliant campaign! Informative, inspiring, fun."

"Great use of leaders and inspirational speakers!"

06 Conclusion

We aimed to show our learners that small projects can have a significant impact and that quality improvement can be creative, exciting and even fun.

Feedback shows that our audience, from students to senior staff working within the organisation, have been inspired to create change due to the campaign

We believe other educators can use the platform to engage and educate following our template.

Instagram can therefore be a powerful educational tool, and we think there is so much more potential to unleash.

Resilient practical assessment- Looking forward following a sociomaterial case study of a disrupted high stakes clinical assessment held during the COVID-19 pandemic.

Craig Brown[1], Lorraine Hawick[1], Anna Macleod[2], Jen Cleland[3]

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1. University of Aberdeen, Scotland
2. Dalhousie University, Canada
3. Lee Kong Chian School of Medicine, Singapore

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t: @cr419b

Introduction

Practical skills assessment is prevalent in many degree programmes, particularly those associated with healthcare education. The COVID-19 pandemic severely disrupted assessment due to social distancing restrictions, maximum room occupancy and movement around spaces rules. In addition, within healthcare, simulated patients were not able to be used in assessments. In this study, using a sociomaterial perspective, we aimed to explore the factors pertaining to a disrupted undergraduate medicine high-stakes Objective Structured Clinical Examination (OSCE). Study findings elicited important themes around building a resilient assessment system. These findings will enable educators and assessment coordinators to consider how to develop resilient assessment processes going forward.

Sociomateriality

Sociomateriality considers that all things, human and non-human are equal in terms of agency in that the thing under study can affect and be affected by other things. For example in the OSCE rooms, spaces, equipment, actors, students, ipads, checklists, blueprints can all exert actions.

> "The OSCE can be framed as a sociomaterial assemblage where human and material components are meshed together producing multiple effects" [1]

The OSCE format

The OSCE is a circuit where students complete various timed tasks (e.g. history taking, clinical examination) within a station before moving onto the next station. All students complete all stations on a site. The exam will be conducted simultaneously on multiple sites either in the same building or at another location. There will usually be a student, examiner & patient/mannequin in each station. [Figure 1]. In 2021, for the first time & due to the pandemic half the exam was also completed on an iPAD with free text questions held in a lecture hall.

Patient/Mannequin   Student   Clinician Examiner
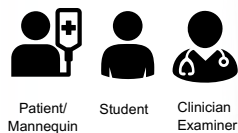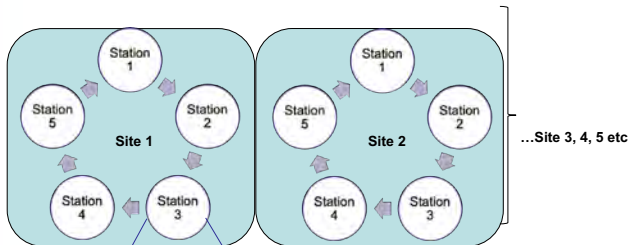
…Station 4, 5, 6 etc

6 'Data interpretation' stations conducted on iPAD app in a unidirectional format. Held in classroom to address 'no patient partners' directive.

Figure 1: The OSCE station/site/run cycle setup including patients or mannequins, students and examiners (and in 2021, 6 virtual stations).

Methods

Qualitative Case study[2] of final year OSCE held during COVID19 pandemic.
- Documentary evidence (field notes, floor plans, paperwork).
- Photographic evidence of OSCE.
- Semi-structured interviews (including photoelicitation) of purposively sampled "under represented" voices (e.g. technicians, building manager, OSCE coordinator) within practical assessment organisation.
- Thematically analysed using sociomaterial framework on the background of COVID19 acting as a "magnifier" which identified issues of importance.

Results

Six semi-structured interviews lasting a total of 264 minutes were conducted, transcribed and analysed alongside documentary evidence & 32 digital images from the exam setup using qualitative methodologies. Key themes relating to assessment resilience were evident at both the planning stages and when looking towards the future especially with increasing student numbers being presented for practical assessment.

Anticipating time related challenges in circuitous exam format

"[Moving to video conferencing] posed logistical challenges so we built in extra time during the OSCE itself"

"I purposefully built in extra time in case we had to re-insert a student due to technical failure."

"[Being over two floors] has its challenges because especially if mannequins are needed, they're stored on the 1st floor, so if they're needed upstairs, we always have to take up spares."

Planning for 'failure' at design stage of assessment

Predictable challenges with equipment & people

"So normally our university machines [computers] time out after an hour. So we had to have IT come and turn off all the timeouts on the televisions and the AV equipment because it does timeout normally, so that was a bit of a concern."

Considering digital & technical failure challenges and equipment logistics

"[The app crashed..] we predicted that this might be a problem so I had created a backup system to use with a different password and [when this happened] I was able to log on and get the student up to the right place"

"But we've always got a member of staff trained in each of the scenarios, it's the same if they were in person and a patient fell ill, we can't always put the standby in, and so we've got a member of staff who can step in for a minute or three until we sort it out."

"We always have at least two spares, if we can, working and ready to go on the 1st floor. If the 2nd floor is being used, we always have another spare up there as well."

Changing dependence on available 'patients' & utilising technology

"[Can] an electric powered wheelchair be able to manoeuvre into the single rooms if we had more than one station [in that room]?"

"Thinking of the future, but we were also keen to have more positive clinical findings. That's challenging because we use patient partners, but we also want to try and standardize the exam as much as possible. So thinking about introducing videos of positive clinical tests."

A resilient future: Looking forward following the exam 'post-mortem'

Practical assessment inclusivity & movement/space logistics

"So as we're being more inclusive as a institute, we need to think of actually the people who are going to be sitting the exam, not just the exam."

Change based on reflection

"I honestly think that [Virtual communication stations] would be better done in a curtain booth at the other end of the room on a laptop. I wouldn't put it through the projector."

Conclusion

Learning from a sociomaterial case study of a 'disrupted' OSCE can help make future OSCEs more resilient as we understand the complex sociomaterial entanglements present in practical skills assessments. Multiple data types within this case study methodology illuminated different issues and aspects which would not have been identified by interviews alone.
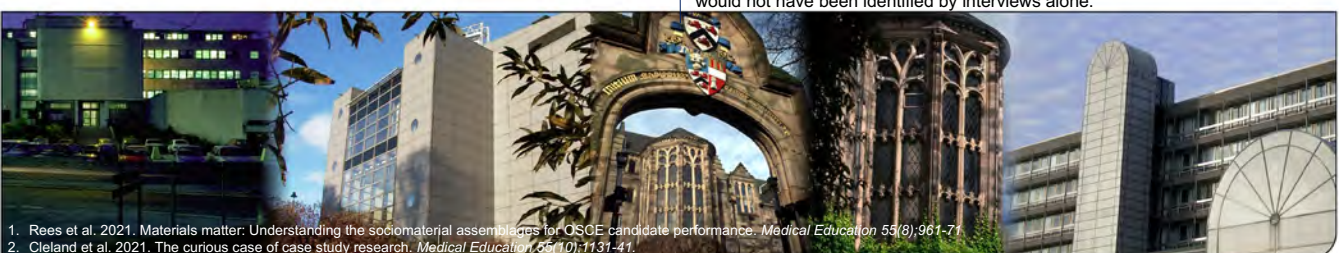
1. Rees et al. 2021. Materials matter: Understanding the sociomaterial assemblages for OSCE candidate performance. *Medical Education 55(8);961-71*
2. Cleland et al. 2021. The curious case of case study research. *Medical Education 55(10);1131-41.*

Developing online resources on statistics and data handling for medical science students

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UNIVERSITY OF ABERDEEN

Background

Statistics and data handling are essential skills in medical sciences. However, our recent Internal Teaching Review highlighted that students wanted more teaching in this area. We aimed to address this by developing new accessible online resources. Coding skills can increase employability as experience of open access programming languages is increasingly in demand. We therefore included resources to introduce students to R.

Summary of work

We developed two resources called "A Practical Guide to Data Analysis" and "Introduction to R" in the format of short lecture recordings including demos. To allow students to conduct analysis in their own time, we also made simulated datasets, cheat sheets and a R notebook containing code with the expected outputs (Fig. 1). While targeted at levels 3 and 4, all medical science undergraduates had access through a shared MyAberdeen site. Online surveys with both 10-point Likert scales and free text questions were used to collect feedback.
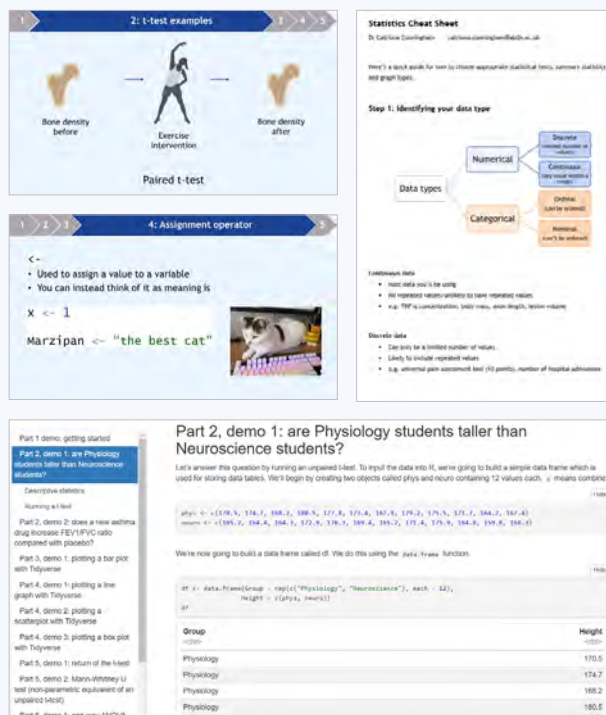
Figure 1: Screenshots of example lecture slides, statistics cheat sheet and the R notebook.

Feedback

The median rating of A Practical Guide to Data Analysis was 10 (n=6) and the comments were overwhelmingly positive (Fig. 2).
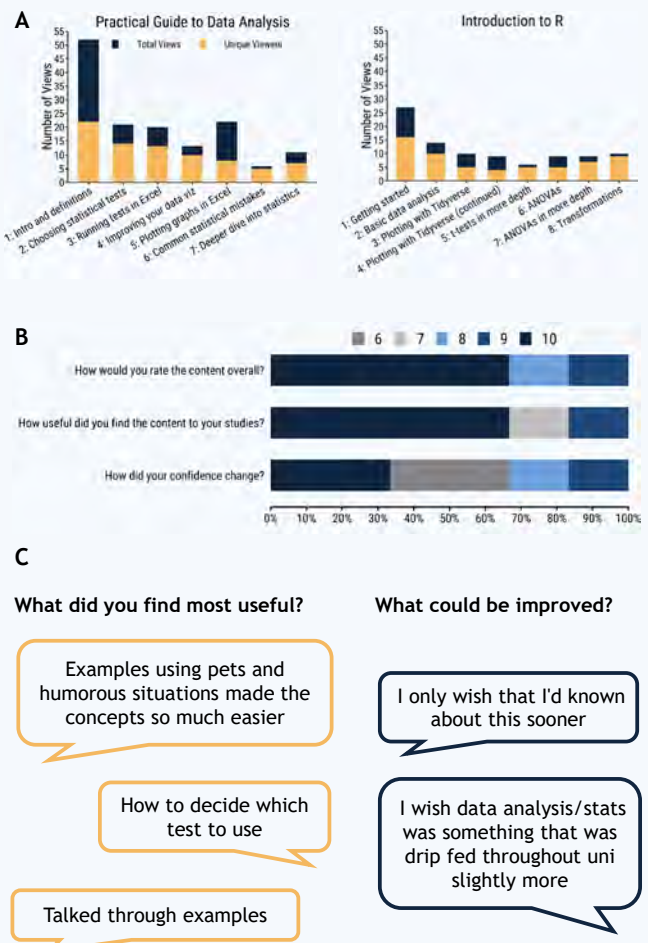
Figure 2: Lecture recording views (A). Likert scores (B) and free text comments from the survey (C) of A Practical Guide to Data Analysis.

Discussion

- Feedback was very positive and students particularly liked the use of examples to explain complex material
- However, engagement was relatively low which could be to due to lack of awareness or difficulty in finding the resources
- Another factor could be a preference for F2F teaching
- We also ran two data analysis workshops for honours students and attendance at the F2F session was higher compared with the Collaborate session (n=15 vs. n=8)
- Feedback collection for the Introduction to R is ongoing

The MSci programme functioned effectively through the pandemic due to the resilience of the learning communities and students that engage with it

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Ian N Fleming

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Background

What is an MSci degree?

- An MSci is an MSc degree that can be done by under-graduate Medical Science students
- MSci degree is done between third and fourth year BSc - makes degree 5 years in length
- Students work on placement for 12 months to develop skills & work experience
- Placements can be done in a company, research institute or not-for-profit organisation
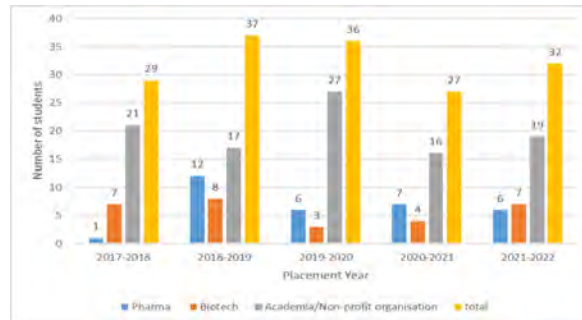
How did the pandemic affect MSci studies?

- Some potential MSci students chose to not undertake a placement
- Students chose to study closer to their home country than in previous years (placement students all worked in either the UK or Europe)
- The lockdown reduced the number of placement opportunities available
- The lockdown reduced access to laboratories, limiting time to undertake research

The resilience of the host organisations, placement students and MSCi programme allowed MSci placements to proceed

- Academic labs introduced work rotas so that all stake-holders working in their labs could perform research experiments
- Non-lab placements in companies were done remotely
- Students displayed impressive resilience that enabled them to complete their placement year and MSci degree
- Placement tutors and MSci coordinator supported all students throughout pandemic

Locations of 2021 - 2022 MSci placement students

Aberdeen Royal Infirmary (X2)
Aberdeen University (X2)
TauRX
Active Schools
Heriot Watt (X2)
Biotangents
ThermoFisher
AstraZenica
Babraham Institute
GSK (X2)
Pfizer
Roche
Pirbright Institute
British American Tobacco
Peptinov, France
Severe Ochoa Research Centre, Madrid, Spain
GREN-IMIM, Barcelona, Spain

Rousselot, Belgium

Duisberg-Essen University, Germany
Heidelberg, Germany (X2)

Oslo University, Norway
Technical university of Denmark

Tubingen University, Germany
Swiss Federal Institute of Technology, Lausanne
Research Centre of Natural Sciences, Budapest, Hungary
Hellenic Pasteur Institute, Greece
SBR, Varna, Bulgaria

Company placements
Non-company placements

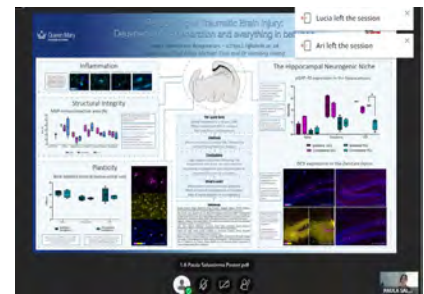### MSci placement numbers remained robust during the pandemic

Summary of MSci placement student numbers over the past 5 years

The placement symposium was adapted so that it could be held online

Placement symposium was run live before pandemic

Placement symposium was run online during pandemic

MSci placements help students to develop their skills and confidence
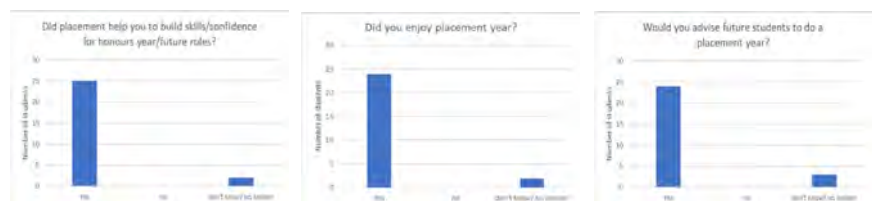
Data from survey of students returning to university after placement year

Summary and Conclusions

- Placement students showed remarkable resilience during the pandemic
- Host organisations were very supportive of placement students and the programme
- Host organisations adapted effectively to allow students to undertake their placements
- Placement tutors were supportive of their tutees during the pandemic
- The placement programme functioned effectively throughout pandemic, enabling placement students to develop skills & confidence to help advance their career prospects
- The adoption of an online placement symposium encouraged host supervisors to attend, so will be used in future years
- The placement programme is a good example of a resilient learning community

Developing research skills with weekly online seminars

JS Gregory, A Macleod, KR Martin, HM Morgan, PK Myint,
S Parson, A Poobalan, V Speirs, S. Turner

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Background

- Non-credit bearing course supporting undergraduate medical and medical science students during summer research projects
- Weekly sessions changed to online due to COVID-19 and non-project students invited.
- Attendance and feedback gathered to understand students experience

Reflections

- Moving summer seminars online
  - ~6-fold increase in students attending live sessions
  - Students joined from around the world and around jobs and other commitments (helped by recordings)
  - Responsive approach: new topics chosen by students
- Recordings became a flexible teaching resource used by UoA & NHS educators

Attendance

- **Increased ~6-fold** from ~8-10 students pre-2020 to (59 ± 31.6) in 2021 for live sessions.

- Greatest (up to **108**) in first three sessions

Figure 1. Location of students

- Most students attended from Aberdeen (off campus) but also **around the world** (Figure 1)

- Students providing feedback (n=15) **mostly joined live** (58% of sessions watched) but also used recordings (Figure 2)
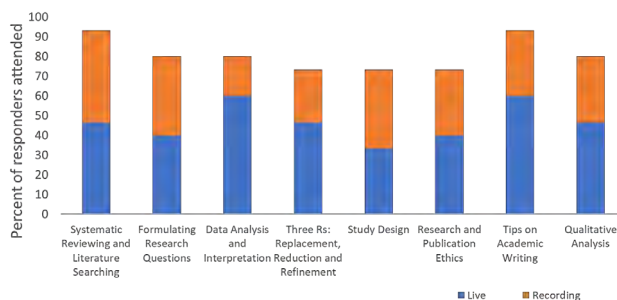
Figure 2. Percentage joining each session live or watching recordings from students responding to feedback questionnaire

Feedback

- Main reasons for attending: **general interest in research** and to **support current studies (**Figure 3.)
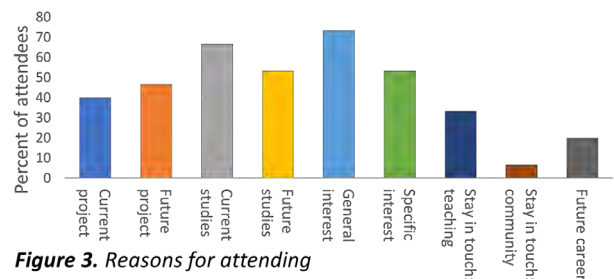
Figure 3. Reasons for attending

- Students found the seminars **useful, enjoyable, interesting**, helped them **learn something new**.

- Text responses highlighted **interesting** sessions and the usefulness of **recordings** (Figure 4)

Figure 4. Word cloud formed from free-text feedback

- Two additional topics (Qualitative Research and using R for Data Analysis) included after requests

- Recordings also used by staff as flexible teaching resource in UoA and NHS Grampian

Reflections on remote summer student placements
Jenny Gregory and Ian Fleming

UNIVERSITY OF ABERDEEN · 1495

H⦁tstart

Background

- COVID restrictions resulted in many organizations stopping funding for undergraduate summer placements.
- In March 2020, the SMMSN Hotstart scheme (supported by the Development Trust) requested projects that could be completed remotely to remain open for students.
- 11 students applied, seven were funded (two externally plus1 for a year-long placement) and all completed successfully (Figure 1). Applications and external funding were both reduced in 2020 2, though applications have now increased.

Figure 1 Hotstart student applications

- Each student wrote a blog, published on UoA social media which reflected on their achievements and experience (Figure 2 and quotes). This was new as previous years had written an unpublished report for the funder.

Reflections

- Less external funding was available during COVID restrictions and running the placements was highly valued by students
- Remote placements worked well and are being kept as an option to widen access
- Blogs are positive and accessible method for reporting placement experiences
- Applications in 2022 increased (~12% of eligible students, Figure 1), possibly from desire for increased practical experience

> The project has still been an incredibly valuable experience... I learned some new research skills, met some other researchers, and got a taste of what the life of a researcher is, as well as to deep dive into a topic I had not encountered a lot before.

> Undertaking this project has been an invaluable experience for me and I'm glad I was able to participate in this during the holidays despite COVID-19 restrictions.

> This project gave me the chance to work as an independent researcher for the first time. I loved having the freedom to explore what I find fascinating and important. I was also able to learn new skills at my own pace and to stretch my abilities as far as possible

PALs for Life (Sciences):

Building a Student-led Learning Community

1495 UNIVERSITY OF ABERDEEN

Alina Zorn & Flora Gröning (f.groening@abdn.ac.uk), School of Medicine, Medical Sciences and Nutrition

Introduction

Our PAL (Peer Assisted Learning) scheme is a student-led initiative to support Biomedical Sciences students on their compulsory 2nd year human anatomy courses. These courses are regarded as very challenging by many students (e.g., understanding complex spatial relationships and learning many new terms). The scheme was introduced in 2019/2020 following the success of a similar scheme for medical students.

How does it work?

The PAL scheme is organised by student volunteers and is open to all 3rd and 4th year Biomedical Sciences students. Following their induction, PAL tutors sign up for practical classes using a Google spreadsheet. We aim for 2-3 PAL tutors per class in addition to 2 staff members (class size ≈ 40 students). PAL tutors do not replace staff members, but provide additional assistance for students.
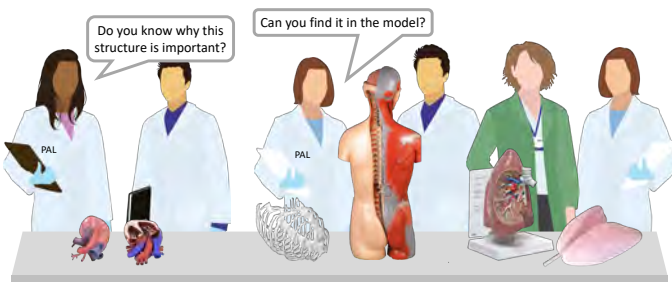
Our Covid-19 response

To facilitate online learning, PAL tutors provided additional online material for self-study. In addition, a 'buddy scheme' was introduced where each PAL tutor is looking after 2-3 students. The PAL tutors have informal meetings with their 'buddies' to share their experiences and give advice and support.

Online quizzes for self-assessment

Individual support via a 'buddy scheme'

Student feedback

In their course feedback, Students provided very positive responses on the support from PAL tutors and the resources created by the PAL tutors. They also appreciated the 'buddy scheme'.

SCEF 2022: How effective was each component for your learning? (in %)

Support from PAL tutors

| 68.8 | 12.5 | 12.5 | 6.3 |

Online quizzes

| 81.3 | 6.3 | 12.5 |

Totally ■ 4 ■ 3 ■ 2 ■ Not at all

> I really appreciated all the learning resources this course had to offer: workbook, practice questions and spotter quizzes and PAL tutors!

> I found the PAL tutor scheme really helpful, and my buddy was so motivating and encouraging throughout the whole term!

> It was great to know we could talk to someone who had already been through the course through the buddy scheme.

Benefits of the scheme

2nd year students:

- Can ask questions in a 'safe space' if they do not feel comfortable asking a member of staff
- Connect with more advanced students and receive study tips and advice from them and thus become part of a larger learning community including students from different levels, countries and cultures
- Receive continuous individual support and can build resilience via the 'buddy scheme'

PAL tutors:

- Reinforce their own learning and can continue with anatomy even if it is not their main degree programme
- Gain teaching experience
- Develop transferrable skills
- Receive a certificate at the end and enhance their CV

Teaching staff:

- Gain time as they do not have to create all online resources themselves
- Obtain an additional source of student feedback via the PAL tutors
- Can learn from PAL tutors what study techniques they have used to tackle difficult topics

17

Creating a Learning Estate that Meets our Staff and Students Needs

We aim to create an environment where students construct and co-create knowledge as well as consume it.

Claire Akparanta, Peter Fletcher, Paul Gormley, Kirsty Kiezebrink*, Richard Lynch, Russell Moffatt, Sara Preston and Kate Smith
*Presenting author

Context:

The physical and digital environment of our university should create a sense of being part of a community of learners. It encourages learning together through providing physical spaces for collaboration and opportunities for connecting digitally to a wider community.

Campus and technological design decisions are guided by our educational principles.

We aim to design for a diversity of pedagogic approaches with a focus on socio-constructivist approaches that emphasise participatory and collaborative activities wherever appropriate.

We need to think about the entire campus as a learning space and consider the opportunities for different types of learning throughout the physical and digital space.

We need to build in effective evaluation processes to every project so that we can continue to enhance our educational offering delivered on a world class campus.
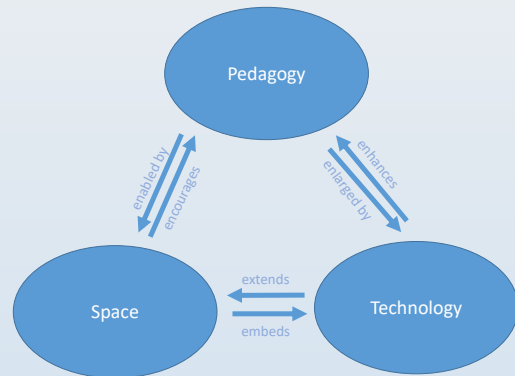
A Pedagogy-Space Technology (PST) Framework for Designing and Evaluating Learning Places (D. Radcliffe), University of Queensland.
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Constructing learning: the way in which a space is designed shapes the learning that takes place in that space.

Favours Transmission mode

Favours Co-creation

"Lecture Theatre"
Traditional - Pitched flooring, fixed seating, many rows, facing forward, paper based note taking, large front screen plus duplicate monitors

Modern – moderate pitched or flat floor, swivel seating, landscape orientation, cluster seating/ horseshoe, desk mics, power charging points for digital note taking devices, personal device display rather than room display

"Tutorial Room"
Traditional – pre specified set up (horse shoe/ grouped/ rows), lower capacity than lecture theatres, often has flip charts / white boards

Modern – moveable furniture for easy adaption of configuration, large flat floor, higher capacity (equivalent to lecture theatre),   traditional and digital collaborative tools (white boards etc.), write on walls / desks

Learning is not constrained in time and space, consider the whole campus as a place where a continuous flow of learning can take place.

Students need space to enable and encourage learning when not in a teaching setting.

This learning can take the form of many different activities including self study, group discussions, creation of materials, consumption of information etc.

Therefore these spaces need to cater to a range of different requirements.

Consider the benefits of disciplinary identity versus disciplinary neutral spaces.

Create a campus which encourages inquiry, critical thinking and creativity through the design of our spaces and is inclusive by design.

Learning doesn't only occur in teaching rooms and libraries

Or indoors

Or when sitting down!

Solutions:

A dedicated group focused on how we deliver transformative fit for purpose learning spaces through all capital projects and recurring capital investments to support the pedagogic goals of the University.

The group will enable and support the delivery of a sustainable, inclusive, international, interdisciplinary, and pedagogically robust based educational experience *across all areas of our campus.*

The group will include expertise in all 3 pillars, and will keep up to date with enhancements in the sector,

The group will be supported by stakeholder engagement panel to advise on designs and enhancements,

Providing a single point of contact for all space enhancements going forward.

Gateway2Medicine(G2M) Programme:
an analysis of students' progression and retention

UNIVERSITY OF ABERDEEN

Pietro Marini and Stephen Davies

Institute of Education in Healthcare and Medical Sciences, School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, Foresterhill Campus, Aberdeen, AB25 2ZD, Scotland, UK.

Aberdeen 2040

Learning Together: Continuing to Support an Inclusive, Accessible and Diverse Learning Culture
Commitment 2: "encourage widening access to study, by having fair and flexible entry routes, offering diverse qualifications, and providing a range of modes of delivery; our students will be able to succeed whatever their personal and social background"

Introduction:

G2M programme is now on its 5th year. Since the introduction in 2017-18, 117 students were enrolled to the programme, with 81 students currently attending the MBChB degree (from Y1 to Y4). This is the first retrospective analysis of the general G2M cohort within the MBChB programme, where level of retention and progression rates have been evaluated.
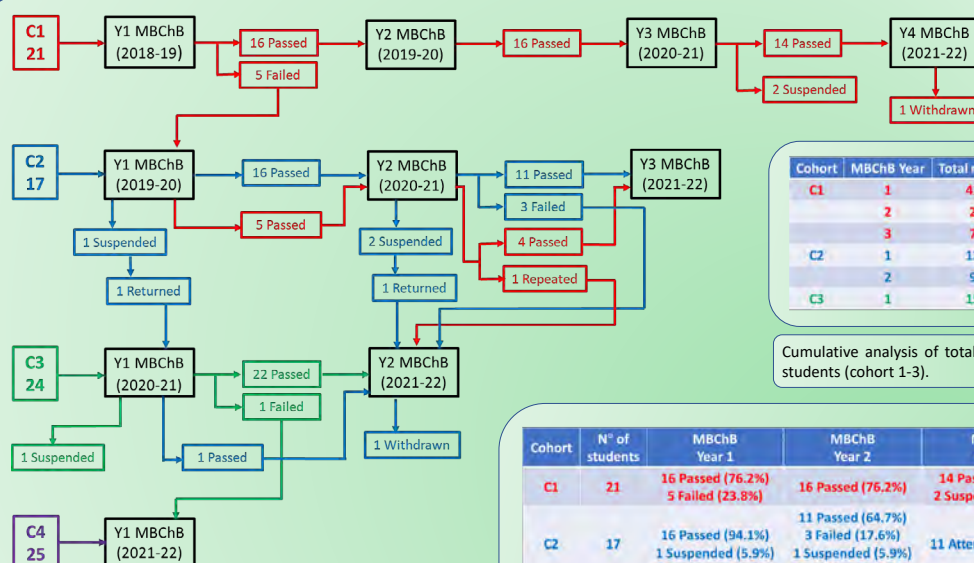
From G2M to MBChB: students progression

G2M cohorts:
C1 (2017-18): 21
C2 (2018-19): 19
C3 (2019-20): 25
C4 (2020-21): 27
C5 (2021-22): 25

Cohort	G2M	Failed G2M	To MBChB	Suspended	Withdrawn	Attending MBChB
C1	21	0	21	2	1	Y4 MBChB 13 (C1)
C2	19	2	17	1	1	Y3 MBChB 11 (C2), 4 (C1)
C3	25	1	24	1	-	Y2 MBChB 22 (C3), 1 (C1), 4 (C2)
C4	27	2	25	-	-	Y1 MBChB 25 (C4), 1 (C3)
C5	25	-	-	-	-	
Total	117	5	87	4	2	81

G2M cohorts: Progression rate.
Total or G2M students enrolled and attending the MBChB (cohorts C1 – C4). Cohort C5 currently attending the G2M programme.

G2M students' journey within the MBChB programme

C1 21 → Y1 MBChB (2018-19) → 16 Passed → Y2 MBChB (2019-20) → 16 Passed → Y3 MBChB (2020-21) → 14 Passed → Y4 MBChB (2021-22)
5 Failed
2 Suspended
1 Withdrawn

C2 17 → Y1 MBChB (2019-20) → 16 Passed → Y2 MBChB (2020-21) → 11 Passed → Y3 MBChB (2021-22)
5 Passed
3 Failed
4 Passed
1 Repeated
1 Suspended
1 Returned
2 Suspended
1 Returned

C3 24 → Y1 MBChB (2020-21) → 22 Passed → Y2 MBChB (2021-22)
1 Failed
1 Suspended
1 Passed
1 Withdrawn

C4 25 → Y1 MBChB (2021-22)

Cohort	MBChB Year	Total re-sits	Passed re-sits	Failed re-sits
C1	1	41	24 (58.5)	17 (41.5%)
	2	2	2 (100%)	-
	3	7	7 (100%)	-
C2	1	12	12 (100%)	
	2	9	6 (67%)	3 (33%)
C3	1	15	13 (87%)	2 (13%)

Cumulative analysis of total resits: pass and fail rate of G2M students (cohort 1-3).

A flowchart analysis of G2M students progression (cohorts 1-4) within the MBChB programme. Currently, 81 students are attending the MBChB at various levels, representing the 93% of the total students enrolled to G2M programme (cohorts 1-4= 87).

Cohort	N° of students	MBChB Year 1	MBChB Year 2	MBChB Year 3	MBChB Year 4
C1	21	16 Passed (76.2%) 5 Failed (23.8%)	16 Passed (76.2%)	14 Passed (66.7%) 2 Suspended (9.5%)	13 Attending (61.9%) 1 Withdrawn (4.8%)
C2	17	16 Passed (94.1%) 1 Suspended (5.9%)	11 Passed (64.7%) 3 Failed (17.6%) 1 Suspended (5.9%) 1 Withdrawn (5.9%)	11 Attending (64.7%)	-
C3	24	22 Passed (91.7%) 1 Suspended (4.1%) 1 Failed (4.1%)	22 Attending (91.7%)	-	-
C4	25	25 Attending (100%)	-	-	-

Head counts and relative percentage of progression rates (passed, failed, suspended and withdrawn) of G2M students (cohort 1-4) within the MBChB programme.

Conclusion

Gateway to Medicine Programme was established in 2017 with the aim of giving students from disadvantaged backgrounds, an access route via a foundation programme and since then a total of 117 students have been enrolled to the programme. In absolute terms, progression and retention rates are positive for G2M students, however a comparative analysis with students enrolled to MBChB programme coming from classical widening access pathways is required, in order to evaluate the absolute performance of this specific population of students.

Widening Access: a targeted, programme focused approach

Professor Rona Patey, Dr Christine Kay, Dr Ching-Wa Chung, Ms Sarah Miller
School of Medicine Medical Sciences and Nutrition

Background

UK medicine has traditionally been seen as a career for society's elite or privileged, although it is often stated that the profession should reflect the society it serves.

In 2016, Scottish Government (SG) stated its aim that 20% of Scottish Domiciled university entrants would come from the 20% most deprived communities[1]. Subsequently SG allocated specific widening access (WA) places to Scottish medical schools (see table 1). The SG definition of WA was an applicant from a SIMD20 postcode or who was care experienced. Places not filled appropriately could be re-allocated to a more successful medical school in this regard.

Developing a WA strategy

In 2016, using established contextual admissions approaches we failed to meet the minimum government target. Only three students meet the required criteria. This prompted a radical review of our approach which highlighted that on average, only ~2% of our admissions could be considered WA. For the first time we developed a focused widening access to medicine strategy (see table 2 for approaches to meet strategy aims).

Year	Entrant Targets
2016	10
2021	12
2022	17

Table 1: Required minimum target MBChB WA places (SG definition)

We aimed:
- To achieve a minimum of 20% WA students per intake within 3 years (including SG SIMD20 target places)
- To increase applications to medicine from WA students
- To evaluate and update the approach annually

Approaches to achieve widening access goals
Continue outreach activities in for pupils registered for the Reach program Scotland (UCAT & personal statement workshops, application support, mock interviews)
Additional outreach activity through Year 3 MBChB Medical Humanities Course 'Healthcare in Education' sending up to 24 students to 12 Reach Program Scotland schools for two weeks.
Continue guaranteed interview for WA applicants achieving the minimum academic requirements and UCAT in top 75% of al Aberdeen applicant scores
10% uplift on UCAT score for SIMD20 / care experienced applicants
Reduced minimum academic requirements from AAABB to AAAB in one year
Ring-fence five places for applicants from the 13 local Reach schools who had no successful applicants to medicine in the previous 5 years, reviewing every three years. Candidates still to meet minimum entry requirement.

Table 2: Approaches to achieve widening access strategy

Progress and next steps:

We have not consistently achieved our minimum goal but have made significant progress since developing our strategy:
- MBChB WA intake is regularly at least 15% and we consistently fill SG defined WA places.
- Two of our target Reach schools have had entrants to medicine over several years.
- Applications from WA backgrounds have not increased, and we are continually reviewing outreach approaches.
- In 2017, we successfully bid for a WA pre-med program (Gateway2Medicine). This was developed collaboratively with North East Scotland College and in partnership with NHS Grampian. Academic entry requirements are AABB over one or two years. Evaluation indicates the progression rate is 95%[2] and highlights students' perceptions of what helps them progress (see Figure 1).
- Recognising the need for tailored student support across the MBChB programme, we are reviewing processes.

Figure 1: What works in Gateway to Medicine?

References
1. First Minister Speech, 25/05/2016, https://www.gov.scot/publications/first-minister-speech-priorities-for-government/
2. Gibson Smith K, Alexander K, Cleland J. Opening up the black box of a Gateway to Medicine programme: a realist evaluation. BMJ Open 2021;11: e049993.doi: 10.1136/bmjopen-2021-049993

Contribution of physiology teaching to the UK economy

Derek Scott, *Tom Addison, *Andrew Mackenzie, #Brendan Cooper
University of Aberdeen, *The Physiological Society & #Academy for Healthcare Science
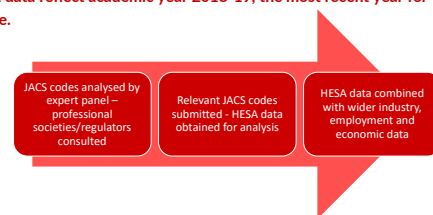
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The Physiological Society

AHCS
Academy for Healthcare Science

INTRODUCTION

- One of the issues facing higher education providers is how to provide evidence that education in a specific discipline has tangible benefits for society.
- The study focuses on the economic impact of courses with a core physiological component delivered by UK higher education institutions, in terms of added income to the UK economy and jobs supported.
- This economic analysis was undertaken by Emsi Burning Glass, an independent economic modelling company that provides economic impact studies and labour market data to universities and institutions. The work was carried out on behalf of The Physiological Society, the largest network of physiologists in Europe, and the Academy for Healthcare Science (AHCS).
- The aim of the work in this project was to independently and objectively assess the economic value of higher education provision to the UK that has physiology as a core component at its heart.
- It also served to build the first collaboration between two large physiology communities with global networks/memberships.
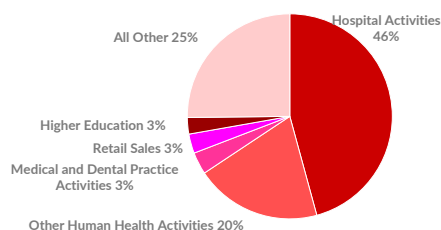
METHODOLOGY

- Data and assumptions used in the study are based on several sources, including student completions, earnings, and demographic data from the Higher Education Statistics Agency (HESA) provided by JISC; industry and employment data from Nomis official labour market statistics; and Emsi Burning Glass's input-output model.
- The study applies a conservative methodology and follows standard practice using only the most recognised indicators of economic impact.
- As such, it is likely that the total contribution of graduates that studied courses with a core physiological component could be greater than calculated in this report, so this should be considered an underestimate of the overall impact of the education included in the analysis.
- Student data reflect academic year 2018-19, the most recent year for which full data were available.

JACS codes analysed by expert panel – professional societies/regulators consulted

Relevant JACS codes submitted - HESA data obtained for analysis

HESA data combined with wider industry, employment and economic data

RESULTS

Top Employers of graduates who studied courses with a core physiology component by Total Added Income

Hospital Activities 46%
All Other 25%
Higher Education 3%
Retail Sales 3%
Medical and Dental Practice Activities 3%
Other Human Health Activities 20%

Present value benefits to society and the public purse

£35.6 billion
Total social & public purse benefits

£28.4 billion
Social benefits

£7.2 billion
Public purse benefits

£27.8 billion
Higher earnings

£286.2 million
Crime savings, society e.g. savings from theft

£311.5 million
Health savings, society e.g. private counselling

£6.9 billion
Added tax revenue

£69.3 million
Crime savings, public purse e.g. fewer police

£100.1 million
Health savings, public purse e.g. NHS savings

£58.8 million
Unemployment savings, public purse

Students gain for every £1 invested

£4.40

Rate of return

20.3%

Lifetime higher earnings, Level 6 graduate

£685,200

Net present value

£14.4 billion

Impact created by graduates who studied courses with a core physiology component in AY 2018-19

£22.6 billion Graduate impact per year

OR

777,200 Jobs supported

SUMMARY AND CONCLUSIONS

- The results of this study demonstrate that the provision of higher education underpinned by physiology found within universities and colleges large and small creates significant value from multiple perspectives.
- HE institutions and staff must communicate this value to policymakers, funders, employers and prospective students - Professional bodies/societies/regulators need to collaborate more effectively to develop this evidence base – We cannot assume that others automatically recognize the value of what we do.
- As part of our communications strategy, this report will be formally launched in Summer 2022 at the Houses of Parliament and the Scottish Parliament.
- As a result of this independent economic assessment, it is concluded that courses of which physiology is a core component, deliver significant value to students and society, in terms of research, teaching, and knowledge exchange across a wide range of disciplines. This should be recognised and supported by research, innovation, and teaching-related funding groups.

We Need To Talk About Death

The physiology of death is not included in textbooks and curricular documents for healthcare/medical science students – but it should be.

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UEA University of East Anglia

INTRODUCTION

- There is an expectation that healthcare students develop understanding of anatomy and physiology as part of their training, so they develop competence in relating theoretical/clinical knowledge to plan, organise and implement care across the lifespan.
- However, our experience of teaching physiology across the range of professions suggests that educators are rarely expected to explain or discuss the physiological processes leading to death and dying, even during teaching about palliative care and end of life.
- The aim of this investigation was to determine the extent to which physiology of death and dying was included in curricula and make recommendations for educators.
- This was a partnership between staff and students across two institutions.

METHODOLOGY

apoptosis
brain
death
brainstem
death
cell death
death
dying
end of life
mortality
necrosis
palliative

RESEARCH TERMS

150

Healthcare science textbooks reviewed*.

*Physiology, pathophysiology, medicine, nursing, paramedicine and biomedical science.
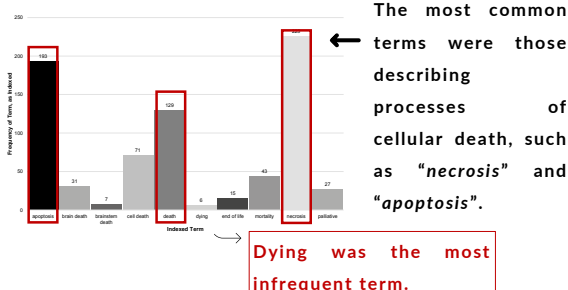
30

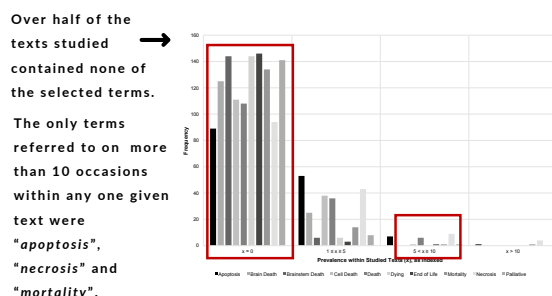Educational curricula guidance documents read.

Informal anecdotal conversation with professionals from palliative medicine and pathology.

## RESULTS – Cell death is acceptable, but 'dying' is not?

TEXTBOOK REVIEW DATA:

The most common terms were those describing processes of cellular death, such as "necrosis" and "apoptosis".

Dying was the most infrequent term.

TEXTBOOK REVIEW DATA:

Over half of the texts studied contained none of the selected terms.

The only terms referred to on more than 10 occasions within any one given text were "apoptosis", "necrosis" and "mortality".

CURRICULUM GUIDANCE REVIEW DATA:

Care-focused terms, such as "palliative" and "end of life" were the most prevalent, particularly across specialist palliative care texts.
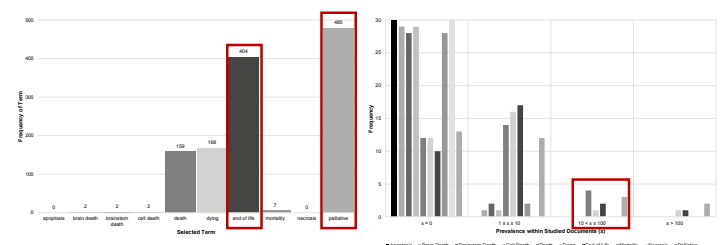
Informal discussion with teachers revealed the following reasons why death is not covered in standard physiology teaching: tutor discomfort, morality of investigation, ethical concerns, lack of realistic simulations, teaching constraints, lack of space in the curriculum.

DISCUSSION

- We **can** include this topic – by incorporating teaching about dying into that which is already delivered, without the need for a discrete course.
- We need to discuss "What is normal?" – What does a "normal" death look like? Which physiological mechanisms might give rise to these "normal" signs?
- Use of "trigger warnings" to encourage engagement with the material and to safeguard learner and facilitator welfare.
- Consideration of how other international educators/professional bodies handle this topic.
- We can and should talk about death if we want to build resilience in our learners and prepare them better for future life experiences.

Medical Humanities Anatomy Module:
An Interdisciplinary Approach to Learning

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AIM

This study aims to reflect on the benefit of interdisciplinary approaches to learning in a medical humanities module and evaluate the student experience at the University of Aberdeen.

BACKGROUND

Main objective of any medical curriculum is to achieve a reflective professionalism with a patient-centered care. Lack of empathy in health professionals could hinder the patient-doctor interaction and it is often challenging to address insufficient empathy with reflective professionalism in medical education.[1]
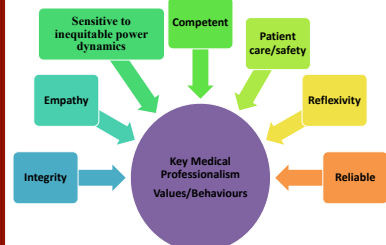
Figure 1. Flow chart illustrates the key values and behaviours of medical professionalism.

MEDICAL HUMANITIES

Medical Humanities education uses interdisciplinary approaches to learning, and enhances professional reflectivity which is vital for achieving patient-centred care.[1]
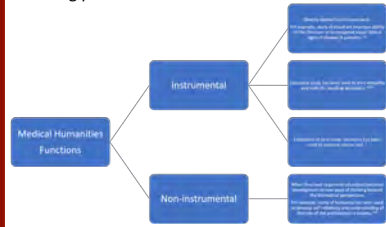
Figure 2. Flow chart demonstrating the function of the Medical Humanities on the health professionals

CONCLUSIONS

By multifaceted approach to medical humanities, students develop imagination, observation and abilities for interpretation of data[11] through:
- Analytical and synthetical reasoning
- Skills of close observation and careful interpretation of the patient language.
- Empathy for the patients
- Conceptualize and construct personal and professional values.

We want our medical students not only trained but also educated and medical humanities can provide that opportunity.

RESULTS

Medical Humanities (ME33HA) : Human Anatomy Dissection with Historical, Social and Cultural Dimensions

ME33HA is a 30 credits 3rd year UG MBChB course and part of the student selected component. This course runs for sic weeks. In this course, students learn history, archaeology, cultural and social perspective to enhance student learning in anatomy, and medicine which is different than conventional medicine curriculum.

Figure 3. Collaboration with humanities (history, art, archaeology and sociology) subjects to enhance knowledge and professionalism in anatomy/medicine.

Figure 4. Main course (ME33HA) elements. Historical lectures are delivered by the lecturers who are either specialist or have special interest in the area.

Benefits of interdisciplinary approaches to learning

- ME33HA into the UG medical curriculum regarded as an effective approach to enhance professionalism and knowledge by the students.
- It is a great strength of the course to expose students to learn anatomy/medicine from a different perspective and develop lateral vision which is important for patient-doctor interaction.
- Learning through visual art enhances empathy and reflectivity which ultimately enhances patient-centred care.
- Equal representation and interaction of different disciplines gives rise to a ''larger methodological picture'' with new ways of doing research and solving problems. [10]
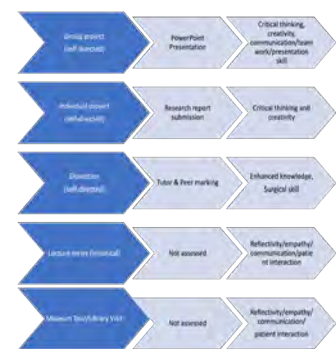
Figure 5. Flow chart demonstrates various learning activities, assessment methods which may associate with skills/graduate attributes in health professionals.

Evaluation of the student experience

- 100% Student enjoyed the course from 2016-2021 except in 2017-18 (87.5%) and during the pandemic in 2020-21 (90.91%)
- 87.5 to 100% students thought the course improved their graduate attributes from 2016-2019 as shown in the bar graph.
- 100% students thought the course increased their knowledge and understanding in the subject area (anatomy/medicine) from 2016-2019.
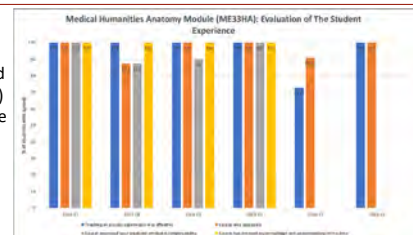
Figure 6. Bar graph demonstrating course evaluation data of ME33HA from 2016-2022.

Challenges to interdisciplinary approaches to learning

- Evaluation of the usefulness for interdisciplinary learning.
- Discussion of the power/financial differences that may arise during the collaboration process would help create more equal and successful collaboration for medical humanities courses. For, ME33HA we did not experience these issues as we invite discipline specific specialist lecturers to volunteer in our course.
- Finding collaborators.
- Funding.

REFERENCES
1) Stefani P, 2016. 2) Bleakly A, 2003.3) Bardes CL, 2001. 4) Ahlzen R, 2002 5) Shapiro J, 2004 6) Skelton JR, 2000. 7) Gupta D, 2003. 8) Friedman LD, 2002. 9) Nylenna M, 2000. 10) Evans HM, 2004. 11) Batistatou A, 2010.

Assessment of practical skills in strength and conditioning using an objective structured practical examination (OSPE)

Daniel Sutton, Christine Roberts, Gillian Kerr and Derek Ball

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Background

The development of the objective structured practical examinations is based on the objective structured clinical examination first described by Harden et al (1975, *Br J Med Ed*). Objective structured examinations are designed to assess a range of competencies that range from patient interaction through to data interpretation and are conducted within a single examination consisting of several test stations.

Aims

Our aim was to develop and apply a novel mode of assessment designed to assess practical knowledge and understanding related to strength and conditioning (S&C) in a "real-life" environment.

Methods

Forty three students, across a range of different degree programs, were registered on the course (SR2003). Students had 5-hours of timetabled practical S&C teaching (see Fig. 1). Prior to the assessment students were provided with access to a pre-OSPE recording that indicated common errors in exercise technique. The assessment was conducted with 5 members of staff and assistance from 3rd and 4th year students with S&C qualifications to support administration.

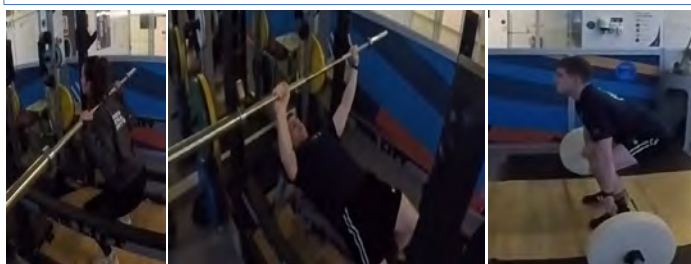Students performance was recorded using the criteria indicated in Figure 2.

Figure 1. Demonstration of typical exercises being performed during OSPE.

Results

The OSPE required 7 hours to assess the class cohort. From a maximum of 47 marks that could be attained the class average was 38 and this equates to an common assessment grade A4

Student feedback on the course was obtained using the SCEF form. The SCEF was completed by 35% (15 of 43) of the cohort and 65-70% strongly agreed the teaching as effective, and highly rated the practical element. Those that provided feedback, 50% strongly agreed that the course made them feel more confident for future assessments.

Covid mitigation

Students were assessed on whether they followed covid rules/guidance. Equipment cleaned before and after use and hands were sanitised prior to and after the OSPE. Social distance was maintained where appropriate.

Conclusions

The OSPE format is an appropriate and time efficient method to assess practical skills.

OSPE requires detailed prior planning to ensure smooth running on the assessment day.

The OSPE provided specific with marking criteria that were less subjective.

Future plans

The results of this OSPE will be presented at the Physiological Society annual conference.

The UK Strength and Conditioning Association (UKSCA) have indicated they will employ the OSPE for students studying to achieve a UKSCA qualification.

SR2003 OSPE		
Principles of Strength and Conditioning		
		Assessor
Student Name		Student ID number
Introduces self, identifies athlete and explains procedure		Yes/No
Introduces self	1	
Explains allocated lifts	2	
Sanitise Hands	1	Max Marks 4
Health and wellbeing		
Checks athletes overall heath (Illness)	1	
Checks for previous/current injuries	1	
Considerate and polite approach throughout		
Friendly and polite manor	2	
Inconsiderate to needs of athlete	-2	Max Marks 2
Able to engage athlete in conversation		
Talks to athlete (asks for feedback)	1	
Builds a rapport	1	
Positive body language	1	
Poor communication with athlete	-2	Max Marks 3
Gym Specific Warm Up		
Warm up focuses on outcome (upper body/lower body)	2	
Prepared (equipment ready)	1	
Warm up runs smoothly	1	
Warm up is catered to the athletes level	2	
Warm up can be progressed and regressed (Question)	1	
Warm up is engaging and fun	2	
Pulse raiser followed by muscle activation	1	
Gym specific movements incorporated	1	
Athlete is given feedback	1	
Warm up is unsafe/poorly structured	-6	Max Marks 12
Lift 1 (Squat/Bench/Deadlift)		
Equipment is set up correctly and safely	2	
Athlete is told how many sets and reps to complete	1	
Athlete is given feedback on performance	2	
Coach is aware of common errors (question)	2	
Weight is appropriate to athletes level	1	
What primary muscles are being worked (question)	1	
Lift was unsafe	-5	Max Marks 10
Lift 2 (Front Squat/Overhead Press/ Plyometrics)		
Equipment is set up correctly and safely	2	
Athlete is told how many sets and reps to complete	1	
Athlete is given feedback on performance	2	
Coach identifies mistakes in athletes technique	2	
Coach resolves mistakes in athletes technique	2	
Weight is appropriate to athletes level	1	
Front Squat/Overhead Press - What primary muscles are being worked (question)	1	
Plyometric - can you explain plyometrics (question)	1	Total Marks 10
Station specific skills		
Station cleaned before and after use	2	
Weights/Equipment correctly returned	2	
Platform clear of obstructions through out	2	
No attempt	-5	Max Marks 6
		Total out of 47

Figure 2. Assessment criteria adopted for OSPE of strength and conditioning principles

Self-determination and motivation in Chemistry during blended learning

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This undergraduate student led project looked at student motivations in undergraduate chemistry during blended and online learning due to Covid-19 during academic year 2020-21.

Survey was adapted from the Science Motivation Questionnaire II © 2011 Shawn M. Glynn[1].

22 statements with Likert-type scale from Strongly Disagree (1) – Strongly Agree (5).

Factor-based scale scores and total score calculated and nonparametric tests compared medians.

Free-text responses, "*Do you think online learning works well?*" and "*Do you have any suggestions for improvements to blended learning?*"
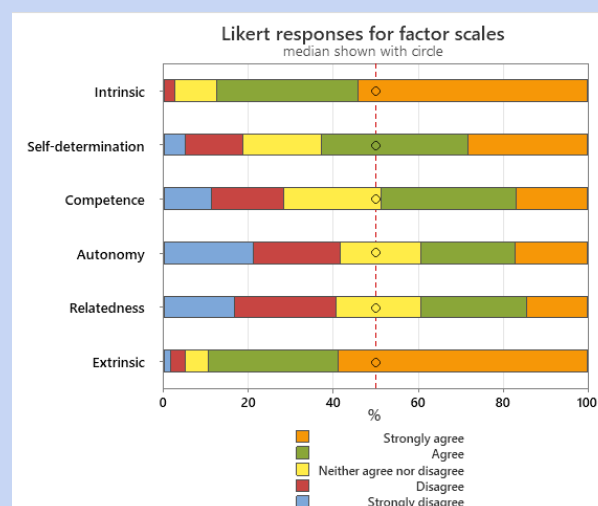
[1]Glynn, S.M., Brickman, P., Armstrong, N. and Taasoobshirazi, G. (2011), Science motivation questionnaire II: Validation with science majors and nonscience majors. *J. Res. Sci. Teach.*, 48: 1159-1176. https://doi.org/10.1002/tea.20442

Students possessed **high levels of intrinsic and extrinsic motivation**.

Where motivation of students is low, related to **low levels of autonomy, relatedness, and self-determination**.

Some variations between year groups.

Workload, **time-management**, and **clearer direction** & **structuring of online material** are areas where improvements could be made to support students.

Likert responses for factor scales
median shown with circle

Legend: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree

No clear overall difference between year groups.

Year 3 lower in Competence & Autonomy.

Years 1 & 4 higher in Relatedness.

Does online learning work well?

No difference in Intrinsic, Extrinsic, and Self-determination between *Yes, No, Not Sure* groups.

No < Not Sure < Yes in Competence & Autonomy.

No lower in Relatedness.

Lowest agreement

I feel my learning experience is personalised during online teaching. Autonomy, 22% agreement.

I feel I have been part of a community of learners during blended learning. Relatedness, 20% agreement.

Differences of opinion	
No motivation or structure	Can learn at own pace
Other distractions	Flexibility to fit with lifestyle
Why revise for open book exams?	Reduced pressure. More problem-solving which more fairly shows skills & knowledge
Inconsistent staff approaches	Good structure in VLE
Unable to interact with staff and peers	Easier to ask questions in chat. Saved on commuting costs
Staff have less time for email	Can ask in synchronous class

**Improve structure in VLE and guidance on how to use it.
Improve study and schedule information to allow better planning and autonomy.
Improve relevance & context for 'middle years' students.**

Adventures in Alternative Assessment

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A variety of assessment types were used to encourage **good study habits**, and engagement with **group work & collaboration**. Reflective journals and peer-marking were introduced to support a **learning community**. Improved instructions to enhance **autonomy & relatedness**.

Authentic alternative assessments promote **engagement with feedback** and **descriptive** and **problem solving skills**.

Videos to explain the **criteria** and **reason for assessment** and to support **academic integrity** and **student ownership**.

Link to case study with examples of different assessments
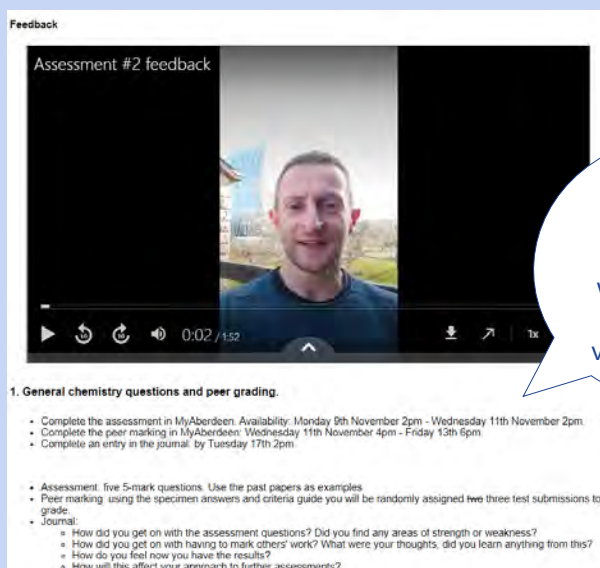
Example of a journal in MyAberdeen, with reflection points and video feedback

Feedback

Assessment #2 feedback

0:02 / 1:52   1x

1. General chemistry questions and peer grading.

- Complete the assessment in MyAberdeen. Availability: Monday 9th November 2pm - Wednesday 11th November 2pm.
- Complete the peer marking in MyAberdeen: Wednesday 11th November 4pm - Friday 13th 6pm.
- Complete an entry in the journal: by Tuesday 17th 2pm.

- Assessment: five 5-mark questions. Use the past papers as examples.
- Peer marking: using the specimen answers and criteria guide you will be randomly assigned ~~two~~ three test submissions to grade.
- Journal:
  - How did you get on with the assessment questions? Did you find any areas of strength or weakness?
  - How did you get on with having to mark others' work? What were your thoughts, did you learn anything from this?
  - How do you feel now you have the results?
  - How will this affect your approach to further assessments?

✓ Self- and peer-grading
- Engagement with marking criteria, feedback, exemplars. Learning from others.

✓ WebPA – peer assessment of group work
- Better allocation of grades to contribution.

✓ Reflective journals
- Questions on study skills, strengths & weaknesses.

✓ Video answers to questions
- Student explains reasoning.

✓ Video explanation of concept using Johnstone's triangle – chemistry pedagogy.

✓ Paired MCQ & typed answer
- Explaining understanding.

✓ Concept inventory
- Highlight misconceptions.

✓ Postcards from the lab
- Explain in simple & then scientific language.

✓ A Question of Chemistry
- Literature, reasoning, & arguments.

"I appreciated how the course encouraged me to better engage with my own learning and study habits. The journal element was unusual but something that I think provided a needed opportunity for self-evaluation."

"Journal entries assignment for self-evaluation really helpful."

"The materials presented in advance of assessments and the feedback given in response was very extensive and helped me better engage with the course and understand what I could get out of it."

Link to case study on reflective journals

The Global Classroom in American Politics

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The problem:
Only a small proportion of students get to undertake an 'international experience' (a semester or year on exchange) for a variety of reasons – prohibitive costs, environmental concerns, physically unable to travel.

The solution?
Collaborative Online International Learning (COIL) attempts to bring the international exchange to the student, using a virtual learning environment to share content, classes and assessments, and to build learning networks across institutions.

Course: PI3074 American Politics

Level 3: Honours Option in Politics and International Relations

Two 1-hour lectures and one 2-hour tutorial per week

Course: PSCI110 American Government

Level 1: Introductory course in Political Science

Two 2-hour lectures/ tutorial hybrid per week

Rationale
- Learned from experience as an International Exchange tutor the value of exchange experiences.
- Wanted to find ways to extend this opportunity to those who cannot participate in physical exchanges.
- Considered COIL a good fit for my American Politics course.

Plan
- Secured a prestigious Fulbright Scholarship in Philadelphia.
- Identified an enthusiastic COIL partner at Drexel University – Professor Richardson Dilworth.
- Discussed how to merge our individual courses (both were due to be revised).

Development
- 'Zoomed' several times to consider options on course content, textbooks and assignments.
- Re-organised our content and decided upon delivery sessions.
- Synchronised lecture times to allow for dual-delivery.

Execution
- Alternated lecture delivery between Aberdeen and Drexel, with opposite cohort joining via Zoom.
- Professor Dilworth provided more depth and detail on specific elements of American Politics.
- Included more comparative elements and an international perspective to my classes.

Evaluation
- Students called for *more* interaction between cohorts, both in class and in assessments.
- PIR has bid for 2040 funding to equip a lecture theatre to allow for more interactive classes.
- Planned a more significant shared assessment and a shared VLE for 2022 course.

Shared Formative Assessment:

Email exchange between students paired across cohorts debating the merits of the US Electoral College.

Mirrors *The Federalist Papers* and letters of Founding Fathers promoting the constitution.

Proposed Summative Assessment:

Cross-institution group work on a briefing document focusing on strengths and weaknesses of one of the US branches of government

Aberdeen cohort feedback:

"A unique experience – I've never had a class like it!"

"It was great to hear an American professor talk about these issues."

Drexel cohort feedback:

"Nice change to the dynamic in the classroom."

"Beneficial… gave me perspective on American politics from abroad."

The Centre for Academic Development supports staff and students from across the University in teaching, learning and professional development.

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