



Empowerment Through Research: Bridging Academia and Society

Emergency Management and Resilience Studies: Future within HEI: Opportunities and Challenges.

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Lord Toby Harris, Chair of the National Preparedness Commission, states *"The world has changed over the past twenty years & will change much more over the next twenty, in business, the economy, & wider society"* (Mann, Towler, and Settle. 2022).

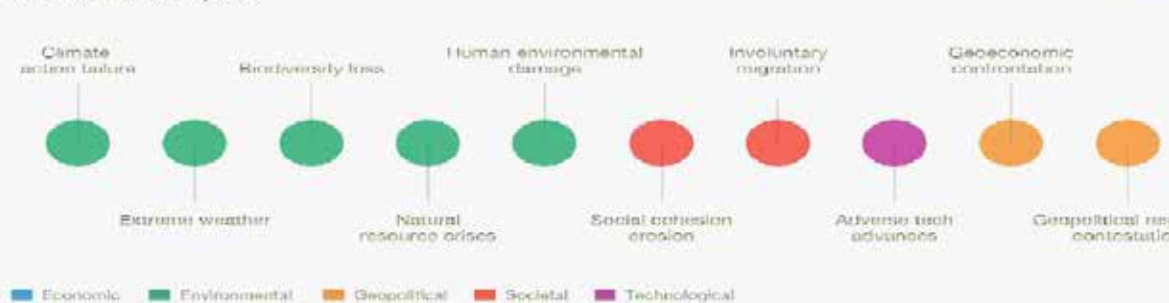
Introduction & Methodology

In a review of literature this poster seeks to explore the intertwined future global hyper-complex challenges, opportunities for Higher Education Institutes (HEI) & modest work-based programs like Emergency Management.

Key Words: Future HEI: Future Emergency Management; & Resilience; Skills; Workplace.

Top Long-Term Global Risks

Over the next 5-10 years



Key Findings

Horizon Scanning the Future of Emergency Management: Future global risks analysis identifies the complexities, interconnectedness, vulnerabilities, tensions challenges & opportunities (WEF. 2022). Most concerning is the increasing growth in migration, digital dependency, disasters, social cohesion erosion, giving rise to livelihood crises & mental health deterioration. Alongside exacerbating uncertainty, identifying the societal drivers & public expectations is important for future resilience building activity in HEI & EM. UK resilience has suffered strategic neglect, in sharp contrast to national security, cyber. Yet evidence suggests that essential development in EM & resilience is required to better manage the future challenges (Mann, Towler & Settle. 2022). Therefore, excellence is sought, compelling improvement from HEI, in their own future resilience & that of EM.

Future of HEI:

There is a critical need to prepare society & emerging jobs, like EM to meet these global challenges (EDUCAUSE, 2022. p. 4; Gast. 2022). Alongside the fourth Industrial revolution (4IR) brings immense changes in capabilities & skills, *with some* we cannot even imagine yet. HEI future is under question, needing increasing accessibility, needing the **'Secret Sauce'** of reform (El-Azar. 2022; WEF 2022). The **WEF 2022 future skills report** states the skills required moving forward, which are also seen as supporting crucial wider societal benefits against the global risks, such as civil engagement & strong institutional trust for greater well-being (Harrison-Graves. 2022).

Future skills required (WEF, 2022)

complex problem solving	people management	emotional intelligence	Negotiation
critical thinking	coordinating with others	judgment & decision making	cognitive flexibility
creativity	cognitive flexibility	service orientation	

Estimated improvements in lifelong learning skills in partnership with industry & government, will add \$2.54 trillion increase in productivity to the global economy.

- Disasters will compound pre-existing inequalities, increasing the urgency in developing interactive forms of pedagogy to encompass curriculum with multiple disciplinary viewpoints & cultural perspectives.
- Global recovery & prosperity need prepared leadership with technical proficiency & profound awareness of ethical responsibility.
- True reform, the **WEF 4.0 framework** demands with a re-imagining, investment in HEI to meet these skills for the future workforce (WEF. 2022).

Societal drivers and public expectations

Competence, confidence & trust

Joined up working

Accountability & democratic consent

A readiness to invest in resilience

The "secret sauce" of education reform

Enabling actions

Defining and aligning collective values
Using participatory design methodologies.

Cultivating local agency
Developing leadership capacity, empowering educators as classroom experts.

Demonstrating reform practicality
Building evidence, modeling practices, showing alignment.

Discussion

What is certain is that the world is heading into a period of great uncertainty, with interconnected complexities, widening inequalities, increasing disasters & vulnerabilities. Requiring greater knowledge & skills in resilience, throughout all industries & society. Society affected by disasters, will see increased migration, urbanisation (Megacities), decreasing access to resources. Whilst technology will advance at pace, potentially offering solutions, but also providing, over reliance, complexities & vulnerabilities to resilience. Every person, industry & government must keep a weather eye on the rapidly changing horizon (WEF. 2022).

Future for Emergency Management & Resilience

Although a comparatively young modest sized field, it is critical to societal resilience, survival & growth. (Mann, Towler & Settle. 2022; JESIP. 2022; Benavides Garcia. 2022; Bateman, Jin, & Zhang. 2022; Farrow. 2019).

~ The current knowledge & skills within EM are those identified as critical for HEI to develop for the future. ~ Future technology will support data management, scenario planning & decision making, formulating new knowledge & skills requirements.

Future of HEI

The urgent **calls for action & reform**, request supporting learners, workforce requirements, technological changes & challenging economies (Tate. 2022; KMPG. 2020; WEF. 2022; EDUCAUSE. 2022; Govindarajan & Srivastava. 2020; OU. 2022; Etemadi & Poonawala. 2022; Al Dhaierand & Ali Hamade. 2022).

- The skills needed for the future, need urgent consideration, along with pedagogy, constructive alignment in programme
- design, to support future societal challenges & inequalities.
- Technology will change HEI in every way, allowing global reach, with borderless challenges to competition & program design.
- Personalisation & professionalisation is increasingly being called for, to ensure supporting learners personal needs, requirements & industry development.

The liquid imperfect world will bring crisis after crisis, for industries & HEI alike, requiring better horizon scanning, adaptability, flexibility & resilience, needing to apply the **'secret sauce'** to enable reform, building programme to support global market economies & resilient society (Granados. 2018; WEF. 2022

"HEI have an important role to play, in the education of people who work, or wish to work, in the resilience field, & in the contribution, they can make from their research to the development of policy & operational practice."

Conclusion (Vision)

'One size fit's all' is a thing for the past, future global society is only set to become more complicated & interconnected (JISC. 2020; Østergaard & Nordlund. 2019; Hill, et al. 2022; McIntosh & Nutt. 2022).

- The **UKs resilience review** recognises & provides recommendations for the important role of HEI.
- EM needs to be recognised for the support to HEI & society for the challenges ahead.
- EM supports the important third space through integration between academia & professional activity.

Required for the transformation, reimagining to better fit the demands of industries workforces & societal resilience.

HEI need to prepare themselves, their students for the future of unprecedented societal shifts, increasing inequalities, critical to managing & leading future challenges, scrutinizing programmes required for the future (Myers. 2022; Cortez Marquez & Mendoza Carabeo.2022; The Times Higher Education. 2022).

Future of Technology in HEI:

4IR brings (OU. 2022; Benioff. 2016; Etemadi & Poonawala. 2022; Al Dhaierand & Ali Hamade. 2022)

- AI impacting on analytics & learning tools,
- Mainstreaming hybrid learning spaces,
- Enabling detailed future scenarios,
- Micro credentialing, growth in hybrid personal learning,
- Thought alone transferring knowledge,
- Improved data management, review,
- Influencing study behaviors,
- Full sensory virtual learning,
- Global sharing of ideas through collaboration giving rise to global solutions, with science & workplace linkages.

Nevertheless, this is also a growing threat. To global digital inequality & societal vulnerabilities (Yu & Hu. 2016)

WEF (2022) state *"a comprehensive approach to investment in high-quality, innovative, future-proof education systems must be a strategic priority"*

The World Economic Forum's Education 4.0 Framework

Content (pull-in mechanisms for skills adaptation)

Global citizenship skills
To include content that focuses on building awareness about the wider world, sustainability and playing an active role in the global community.

Innovation and creativity skills
To include content that fosters skills required for innovation, including complex problem-solving, analytical thinking, creativity and system analysis.

Technology skills
To include content that is based on developing digital skills, including programming, digital responsibility and the use of technology.

Interpersonal skills
To include content that focuses on interpersonal and/or intelligence (i.e. empathy, cooperation, negotiation, leadership and social awareness).

Experiences (leveraging innovative pedagogies)

Personalized and self-paced learning
To include content that focuses on building awareness about the wider world, sustainability and playing an active role in the global community.

Accessible and inclusive learning
From a system where learning is confined to those with access to school buildings to one in which everyone has access in learning and to transition inclusive.

Problem-based and collaborative learning
From process based to project and problem, based content delivery, requiring peer collaboration and more closely mirroring the future of work.

Lifelong and student-driven learning
From a system where learning and skills decrease over one's lifespan to one where everyone continuously improves on existing skills and acquires new ones based on their individual needs.

UK Resilience review: Recommendations related to HE from the sector review;

- The Resilience Competence Framework, once produced, should be made available to HEI to inform their course design & teaching.
- The Civil Contingencies Secretariat or any successor body should establish & promote a formal engagement mechanism for those HEI seeking advice on current resilience policy & operational practice, or who wish to pursue or promote research of benefit to UK resilience.
- Resilience Partnerships should be encouraged to engage with their local HEI, including in areas where they can offer analytical expertise in the development of risk assessments & emergency plans to more fully reflect local demographic, socioeconomic & other data & information.
- The Civil Contingencies Secretariat or any successor body should collate from across government departments & Resilience Partnerships a list of those UK resilience issues which would benefit from further research & pursue this with HEI & research funding bodies.

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Empowerment Through Research: Bridging Academia and Society

Why is this research important?

Use of strengths-based practice in UK Adult Social Care is a government policy objective¹ **Therefore, any potential for collaborative work that might enrich and improve strengths-based practice in this sector should be of interest to Government policy makers, Local Authority commissioners and social care service providers.** Positive Psychology practitioners may also appreciate an opportunity to widen the scope of current strengths-based thinking within the sector.

Research objectives

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Identify
Relevant findings and potential gaps in the literature. | 
Explore
Differences between the two approaches.
Can positive psychology interventions be used to facilitate strength-based practice? | 
Test findings
Interview professionals to establish appetite for and interest in developing a strengths-based Resource Pack for social care workers |
|---|--|---|

Method.

- Selective scoping study to compare differences between strengths-based practice in Adult Social Care (ASC) and Positive Psychology (PP) and identify any reference to PP strengths-based interventions in Adult Social Care literature.
- Semi-structured interviews with four professionals with experience of strengths-based work in Adult Social Care, or Positive Psychology, or both.

Recommendations.

- Test the assumptions and findings in the White Paper.
- Evaluate the barriers to successful implementation of strengths-based practice in Adult Social Care.
- Establish the effectiveness of the strengths-based approach in Positive Psychology on wider populations,
- Develop a resource pack for Adult Social Care practitioners that includes information and guidance on the use of strengths-based interventions developed by positive psychologists.

We would like to issue an invitation to any professionals with a strengths-based background in either Positive Psychology, Adult Social Care or related fields, interested in collaborative work to share positive practice between the sectors and develop a strengths-based Resource pack for Adult Social Care workers to contact the following:

- [Kate.mcallister@bnu.ac.uk](mailto:kate.mcallister@bnu.ac.uk)
- ceri.sims@bnu.ac.uk

Authors

Kate McAllister, (Associate Lecturer) & Dr Ceri Sims (Associate Professor).

QR Code for White Paper



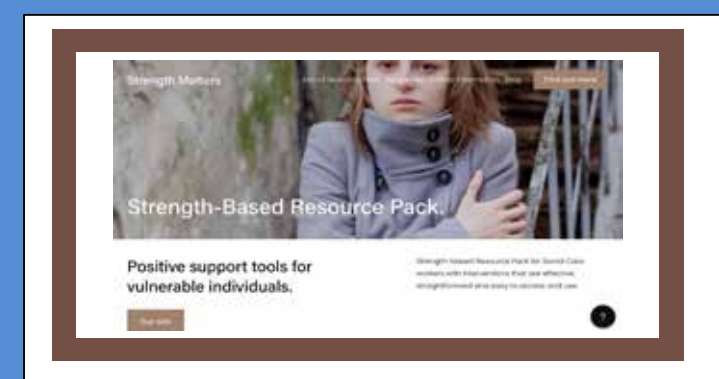
Research rationale

Resource constraints, exacerbated by the pandemic, make delivery of strengths-based practice in Adult Social Care increasingly challenging².

Access to some scientifically validated Positive Psychology strength-based interventions might facilitate service delivery and even improve outcomes for clients.

Findings. No evidence was found, either via the literature review or from interviews, of use of PP strengths-based interventions by ASC practitioners working with vulnerable people. **This is a missed opportunity, given the wealth of evidence³ about the benefits of PP strengths-related interventions.**

All interviewees showed enthusiasm for the idea of developing a strengths-based resource pack (possibly an App) for social care workers containing information and guidance on the use of PP strengths-based interventions.



QR Code for references

Scan me!



Empowerment Through Research: Bridging Academia and Society

Investigating a Minimum Effective Dose and Effect of Rebound Exercise in Community -Dwelling Adults with Neurological Disorders: A Pre -Post Interventional Study.

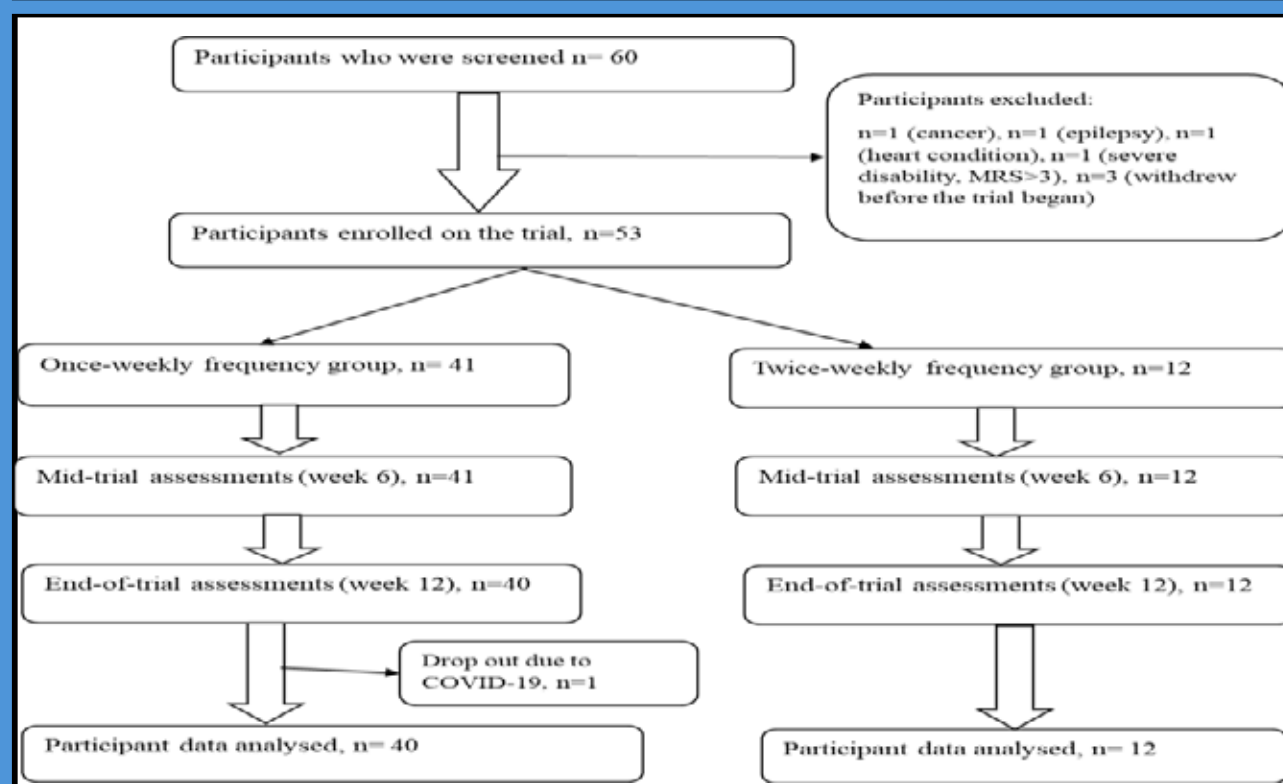
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Background and purpose

Studies show that performing rebound exercises (RE) thrice weekly can improve mobility for patients with neurological disorders (ND) in a hospital setting. However, it is unclear whether the same result can be achieved in the community with less frequent intervention. Therefore, this study aimed to identify a low effective frequency dose of RE and its impact on the physiological and physical functions of adults with ND living in the community.

Method

The study involved 52 individuals (17 men and 35 women) with ND who could walk independently for at least two minutes. The participants engaged in a 30-minute RE once or twice weekly, based on their preference. The study measured their blood pressure (BP), heart rate (HR), balance, walking speed (WS), physical activity level (PAL), and quality of life (QoL) at the baseline, six weeks, and 12 weeks. Statistical tests like Repeated measures ANOVA, Friedman, Independent t-test, and Mann-Whitney U tests were used to test for significant differences within and between groups for the normally distributed and skewed data. The analysis was conducted using SPSS software, version 28.

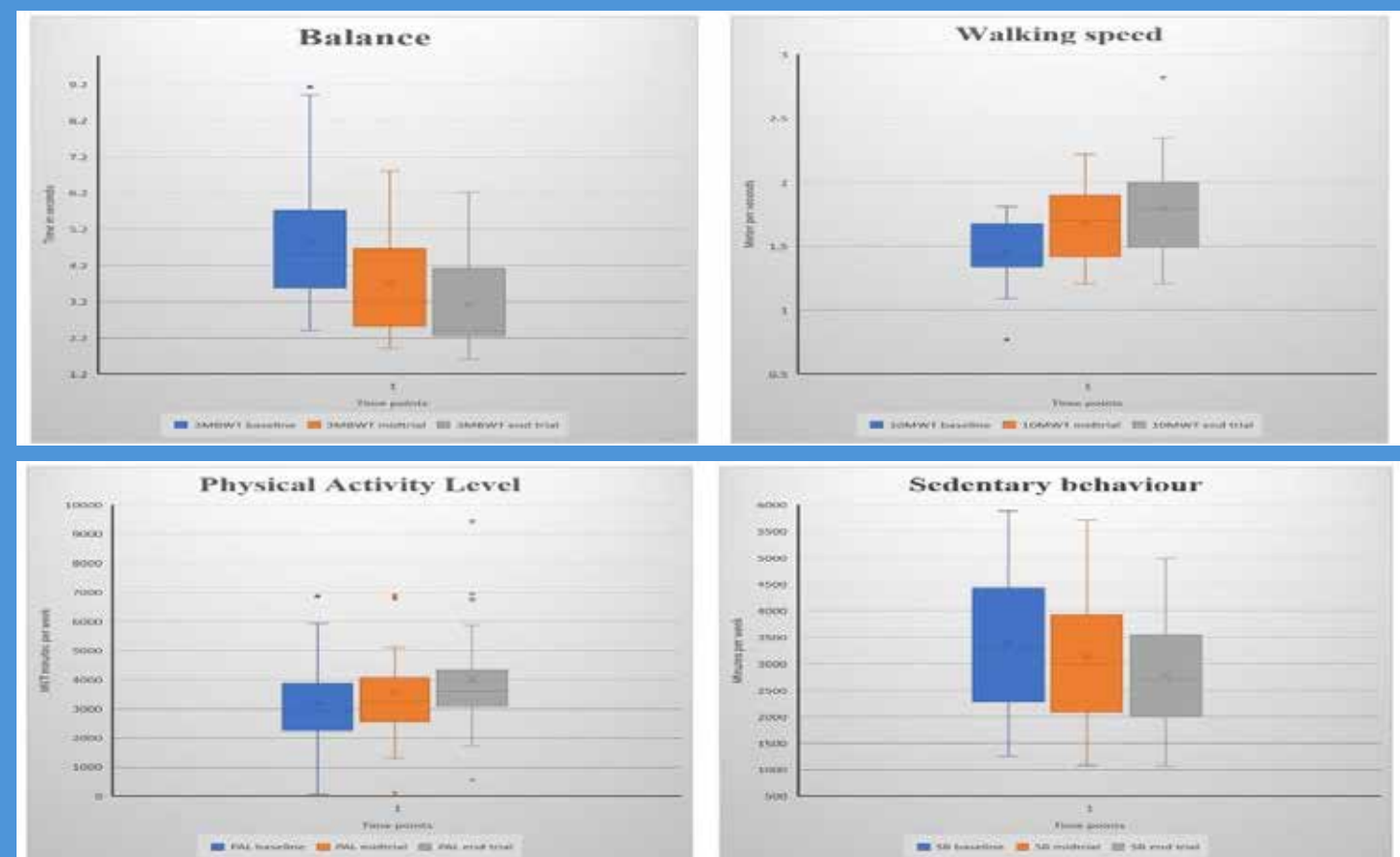


Acknowledgement

I want to express my gratitude to the participants who participated in this study and to Parkinson's Disease UK for their support in the recruitment process.

Result

The majority of the participants were female (67.3%), married (46.2%), retired (55.8%), non-smokers (90.4%) and were within the 65-74 years age range (50%). Most of them attended the rebound exercise once a week (76.9%), had Parkinson's disease (50%) and had been diagnosed within the previous 3-4 years (34.6%). The study found significant differences in the participants' BP ($p<0.05$), HR ($p=0.021$), balance ($p=0.000$), WS ($p<0.05$), PAL ($p=0.000$) and QoL ($p<0.05$) across all time points. However, no significant difference was found between participants who attended once-weekly ($n=40$) and those who attended twice-weekly ($n=12$) groups for all outcomes ($p>0.05$).



Conclusion

Rebound exercise has shown promising results in improving the physiological and physical function of community-dwelling adults with neurological disorders. The study found that a once-a-week frequency improves these outcomes in this population. Identifying a minimum effective frequency dose holds significant implications for enhancing the accessibility and feasibility of rebound exercise interventions in community-based rehabilitation programs.

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2024

Creative Collaboration

Developing a New Model for Play Centered Creative Collaboration.

Jon Place and
Messua Poulin-Wolff

Introduction

In spring 2024 the Course Leader for Fine Art, Messua Poulin-Wolff and the Course Leader for Graphic Design and Illustration Jon Place ran a pilot scheme with 4 student research assistants to develop and trial a new module for creative collaboration. Working with false colour imagery from satellite and drone map data provided by Dr Joseph Fennell from the Open University the team employed a cross-disciplinary approach to data visualisation. Incorporating Design Thinking techniques inspired by Jake Knapp (alongside John Zeratsky and Braden Kowitz) and bespoke interactive collaborative processes. The end goal; to create a framework that can facilitate future collaborative possibilities between the School of Art, Design and Performance and external clients to produce artistic outputs informed by meaningful connection between researchers/clients, student participants and creatives.

Working closely with the client the student research assistants and academics worked together in a responsive, reactive and playful manner in an intensive week-long workshop. The participants spent this week creating and answering questions inspired by their individual reactions to the research data. Exploring new uses, new users and expanding the reach of and application of the research. Constructing new ways to engage users with knowledge exchange through creative and conceptual thinking. Transforming the data into an experiential artistic output or product.



BUCKINGHAMSHIRE
NEW UNIVERSITY
EST. 1891

Radical Playgrounds

The idea for this new model mirrors Joanna Wasza and Benjamin Foerster-Baldenius concept of 'Radical Playgrounds' which they define as: ' an invitation to a free space of collective learning and unlearning, one that is open to trying things out, and safe to err, radically non-competitive and offers a variety of activities: a place to practice and reflect on the socialising and political potential of play.' In the pilot program this developed over the course of an intensive workshops was a studio environment led by phenomenological interactions with research output. Creating a space that was playful, experiential, and exploratory and above all collaborative rather than competitive. Each participant worked off of eachother to crowdsource a range of solutions and outcomes.

Through play and responsive active participation the students brought the human back into the data, removing it from its initial context and transforming its use. Through play we have brought the human element back into our research communication, and the act of creative play as deconstruction and analysis of complex ideas.

Wasza, J. Foerster-Baldenius, B. (2024) Radical Playgrounds: From Competition to Collaboration. [online] Available at: <https://www.berlinerfestspiele.de/en/programm/2024/radical-playgrounds/ueber-radical-playgrounds> [Accessed 26 Apr. 2024].

Methodology

In these dynamic settings, the original images undergo a process of digestion, filtered through the participant's body, broken down and transformed into unique creative output as embodied thought. This image of digestion should be understood through the scope of thinking through making and the notion of improvisation with materials. To think through the act of making, ask a short re-examination of the creative process, too often understood as a direct input of thought into matter. In art practices, artefacts are not produced by projecting pre-determined forms but developed through material improvisation. In this perspective, creative outcomes are generated on the one hand in the flows and transformations of materials and on the other hand in the movement of the imagination and the sensory awareness of the maker (Ingold, 2010) Thinking and making keep bouncing at each other; ideas are developed in response to the materials and reflected upon. This position of the non-hylomorphic nature of the creative act underlines the unique human capacity to process information through creative embodied experiences (with the prerequisite of a body, as highlighted by the image of digestion). As such, the participants become image-processing devices that generate playful interpretations of the initial data through creative improvisation.

Ingold, Tim. (2010) 'Textility of Making', Cambridge Journal of Economics, 34, 91–102. Available at: 10.1093/cje/bep042.

'To play is to be in the world. Playing is a form of understanding what surrounds us and who we are, and a way of engaging with others. Play is a mode of being human.' - Miguel Sicart

Results

To see examples of work created during the pilot program scan QR code for images.



Participant One:

Participant One's meaningful reaction took them away from the source materials into their own personal journey of discovery. The data acted as a jumping off point, but through their own engagement with the radical playground they entered a period of personal development and expression.

'This week was probably the most creative I have ever felt and been in my entire life. It felt good to have been productive, to have the creative freedom and be experimental. I think satellite imagery, being at the core of the project, was interesting. I never thought much of it before, and I didn't think the amount of work we produced, inspired by these images, would be possible. Half the time, I couldn't tell what was in the images and I didn't think they were very nice to look at, but it's amazing how something like this can inspire a whole project and what comes out of it.'

The intensive and experiential nature of the exercise allowed them to expand their own understanding of process.

Participant Two:

Participant Two focused on, amongst other things, the intangible qualities that existed within imagery itself, focusing on the unique colour palettes that define false colour imagery. Looking to understand the very nature of the process itself through their interaction with the properties they found most engaging within the source imagery.

'Energy and atmosphere makes a place what it is. I did capture some of the curves and circular shapes of the map imagery from the beginning in this piece but wanted to expand upon these shapes having them be the sort of spawn point for all the other strokes such as the ink and paint I used. By having them be the sort of growth point I like to imagine it would capture the energy of the landscape. I also started to consider layering. As seen in the false colour imagery, the colours do not replace the map they simply overlay to highlight an area. This layering and overlapping is what makes them feel radiant and jump out at the viewer in my eyes.'

Participant 2 had a much richer and deeper connection with the source imagery, whilst still parsing it through their own unique interactions.

Participant Three:

Participant Three's went in a different direction and began linking the research to something they could relate to. The connections that where made allowed them to parse and understand the alien information through their existing relationships. As a non-expert their week developed into understanding an outsider's perspective, and finding links between knowledge and understanding.

'Moving on from smaller scale work of Monday afternoon, we started working large scale on un-stretched canvas. By drawing some of the shapes we had created yesterday on a larger scale. The drawings became looser and more abstracted. It was also a challenge as working on a large scale, as the starting images were no bigger than A4. One of my favourite parts of my canvas drawing was the pink spots I created. This is because it looked like something you would find under a microscope. It was inspired by one of the drawings I did on the first day where I was trying to colour in all the white gaps in the map and the ink in the pen bled through paper to the other side. I thought this made an interesting result, almost like heatmap.'

Contact:

This is an ongoing research project. If you are interested in future collaboration or can see an application within your own research/outreach program please contact the project leads.

Jon.Place@bucks.ac.uk
Messua.Poulin-Wolff@bucks.ac.uk

Future Applications

Education

This framework based on the idea of play and 'Radical Playgrounds' can be used in classrooms to enhance learning as a form of Situated Learning (Jean Lave, Etienne Wenger, 1991) and Community of Practice. (Etienne Wenger. 1998)

Knowledge Exchange/Academic - Industry Collaboration

Used to develop creative outcomes that visualises and communicated research to new audiences. Within and outside the university community. For example, this initial pilot scheme is developing a touring exhibition and textile-based product as a knowledge sharing activity for the researcher at The Open University. Engaging a potential user-base outside of academia.

A creative interdisciplinary model might be used to bring awareness and distinct perspectives to data and technological field through a different form of engagement and larger outreach. Developing novel products and unconventional creative problem solving.



Scope the possibility and the need of developing an app that meets the needs of individuals with Cauda Equina Syndrome (CES)

Dr Rafid AlKhannak
CDI School / Computing -BNU

Mr Firas Sarhan
National Spinal Cord Injury Centre-NHS

Claire Thornber
Cauda Equina Champions Charity

The aim of the project is to scope the possibility and the need of developing an app that meets the needs of individuals with Cauda Equina Syndrome (CES). To enable future project of developing an app for the 9 million people living with back pain in UK, rolled out in Primary care during routine GP visits. Patients would be encouraged to plot their wellbeing and pain/symptoms.

Include education and advice about weight management, sensible exercise, health and safety advice and education for both healthcare professionals and patients about back pain management and cauda equina syndrome.

Designing and building a digital service becomes an essential solution for many patient, especially after the pandemic, where the need for online digital service has been increased and become a vital unique solution to provide help and support for millions of people in the UK.

The proposed app to run alongside/within the My GP/NHS apps and could be prescribed for self-management of back pain. Therefore, to build a reliable, economic and secure platform does need the collaboration between Computing and medical experts. Which is the aim of the project.

System's requirements and type of services can one of the main project outcomes that could be rolled out through a series of professionals CES Workshops and study days nationally with video production. To be developed in many languages and fully accessible to people with hearing, sight loss and learning difficulties.

A partnership between NSIC and Cauda Equina Champions Charity.

The long experience in designing and developing web and mobile applications is the skill and knowledge that we do have at BNU. We have the passion and admission to transfer this knowledge to our community and industry helping them to develop the quality of service and to strengthen the relationship between academia and industry. Aiming to develop more smart and intelligent systems that match with national and international goals and to help having more green and innovative life.

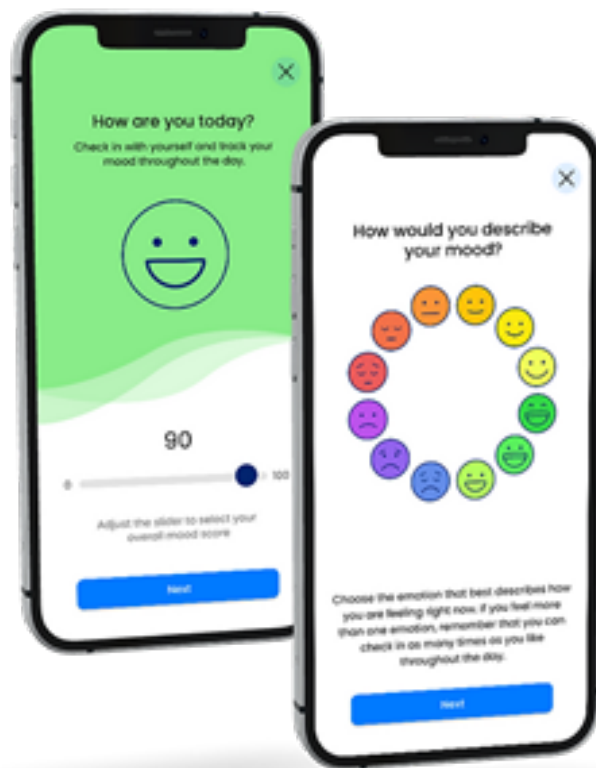
- Our main objectives are to help in providing the Innovation of developing a new concept and utilising the cutting-edge technologies. Scoping the potential need of the append how is this could be used and utilised to benefit professionals and patients to raise awareness re cauda equina syndrome
- To force onward urgent referral for further clinical assessment regarding the cauda equina syndrome (CES) that can help diagnosis. To achieve the prevention of disability through delayed and misdiagnosis of CES.
- To empower the public to self-manage back pain and reduce appointment burden and financial cost to NHS through litigation.
- To raise awareness the whole population (including all medical community) about CES, which is more prevalent than complete spinal cord injuries and meningitis, but little known. To reach every single member of the population who may be at risk of developing CES.
- To develop a gold standard learning resource on cauda equina syndrome and challenge bias around back pain patients.
- To improve outcomes for all CES patients including those with a slow onset CES, who may be more at risk of being missed through creeping symptoms.
- Create an awareness of/about new treatments, what to do, information and knowledge about the CES ... etc

2024



Empowerment Through Research: Bridging Academia and Society

Using technology to enhance senior leaders' insight into teachers' mental health



Create, Aspire and Excel
10 Clarendon Rd, Watlington, Oxford OX12 9JN

The project

Teachers have some of the highest rates of burnout of all professions. Mental health challenges impact negatively on the lives of educators, are costly to the school and can also have the potential to impact on student outcomes. Senior leadership teams are particularly challenged by the poor mental health of their teaching staff, especially in cases where long term sickness requires teaching cover.

As part of an Alliance funded project to promote knowledge exchange with businesses, BNU has been working with OK Positive, a wellbeing app and Chiltern Hills Academy (CHA), a local secondary school. The project provides teaching staff at the Academy with free use of the OK Positive app (<https://www.okpositive.org/>). The app anonymously captures reported moods, invites commentary on what is having the biggest influence on their feelings and uses AI to direct users to organisational or local support.

All of the CHA teaching staff have been invited to use the app over a period of five months with technology support provided free of charge by OK Positive. At the end of the five-month period, members of the senior leadership team (c.8) will be invited to a focus group to examine how they engaged with or actioned data provided by the app and what they felt could be learned from the data.

Project team

Rebecca Rochon: Buckinghamshire New University

Carly Maguire: Buckinghamshire New University

Elly Mellish: Chiltern Hills Academy

Anthony Griffiths: Chiltern Hills Academy

Shonagh McHugh: OK Positive

Impact on Teaching and Learning at BNU

- Incorporated into our Leadership and Management in Education module when discussing the importance of staff wellbeing.
- The underlying concept of Acceptance and Commitment Therapy has been threaded into our reflection modules.

2024



Empowerment Through Research: Bridging Academia and Society

A study on career perception of postgraduate students: Why is nursing my second choice?

-Nandini Das, Medha Verma, Euthan Newman

Introduction

- Nurses being one of the largest workforces in healthcare have carved their niche and made this amply clear that healthcare would go limp without their support.
- Although there is a recognition of the role that nurses play, there is evidence from the literature that there is a struggle to retain nurses.
- In 2023, burnout, exhaustion, and physical and mental health climbed up the list indicating that nurses continue to feel the pressure. Over half of the nurses left the register earlier than they planned (NMC, 2023a).

Background

- Between April 2022 and March 2023, there has been an 8.5% increase in the number of nurses joining the register (NMC, 2023b).
- To address the shortage, programs are being offered to allow non-nursing professionals to enter the profession at the postgraduate level.
- Professionals from a non-nursing background are open to pursuing nursing at the postgraduate level.
- In a US study, Factors for pursuing nursing as adult learners included family considerations, better financial considerations, better work schedule management, better image for their children and family members, higher social status for the future, and working as registered nurse positions as a long-term career (Santos, 2020).

Aim of the Study

- To explore the three interrelated aspects of career development of individuals who have opted for a nursing career at a post-graduate level.

The mentioned aspects include:

- Why did I think of a career change? (Self-Efficacy)
- What were the choices I had and why did I choose nursing? (Outcome expectations)
- What do I aim to achieve? (Personal goals)

Conclusion: The need to stem the tide of the well-documented scarcity in nursing requires a brave and inviting approach. Opening the MSc pathway up to individuals from previously different disciplines is a brave way of enticing mostly mature students into the profession. It can be

hypothesised that since these individuals have already tried out different careers, they are now more likely to settle into nursing based on their new-found motivations not the least of which is dissatisfaction with their previous roles.

The inherent nature to help people fuelled by the influence of family and friends paved the path into nursing albeit delayed due to lack of awareness and stereotypical beliefs about the profession.

P3: I wanted to get into nursing but was not sure of an entry point

P6: At the age of 18 or 19 I was possibly not mature enough to think about nursing as a profession.

P 2: People should choose nursing only if they have a passion for it.

P 7: Nurses working in the community resided with my family. I got my first glimpse of medical and healthcare terminologies by interacting with them.

P10: I want to maintain a work-life balance and I want to take it slowly. I do not want my job to kill me. interacting with them.

Methodology

- Research Approach:** Qualitative research: Case study Approach
- Sample:** First-year M.Sc. nursing students [whole cohort approached]
- Number of students who participated-** 11 (no response from one student and one student refused)
- Data collection method-** Semi-structured interview
- Data Analysis-** Miles and Huberman (1994)- 4-step Case Study Thematic Analysis

Themes

- Views on nursing**
 - Lack of information
 - Lack of emotional maturity
- Motivation to get into nursing**
 - Inherent nature to help people
 - Financial prospects
- The move and road ahead**
 - Dissatisfaction in previous role
 - Work-life Balance
 - Field of specialisation

Discussion

Non-interest in nursing stemmed from fear of contact with ill people combined with a lack of awareness about career opportunities (Dante et al., 2013).

Encouragement from other health professionals and exposure to healthcare significantly impacted the choices made by the participants (Guy et al, 2022).

Work life Balance was a significant reporting. Financial betterment being one of the largest determinants of choosing nursing as a second career choice. (Santos, 2022).

However, in the current study, financial betterment was not equivocally aired by all. It was more of a reason stated by the male participants who had migrated to the UK just before COVID-19.

A great influencer of career choice has been peer pressure (Mtemeri, 2020). Most of the participants undoubtedly were influenced by peer pressure but given the choices they had combined with an intrinsic desire to help people which led to this choice of nursing.

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2024



Empowerment Through Research: Bridging Academia and Society



The Women Eat Last

Traditions, Table Manners, and Gender Narratives
at the Romanian Dining Table

Alexandra Constantinescu
Missenden Abbey International Hotel and Hospitality School

Introduction

Rooted in a rich history, with decades of oppressive politics and patriarchal displays of power, Romanian culture is shaped by complex narratives of resistance, endurance, adaptation, and transformation. Traditionalist gender discourses in Romanian culture portray women as heroic mothers and outstanding housewives, expected to sacrifice their own personal aspirations and lifestyle for the higher cause of wellbeing of others (Anghel and Dobay, 2018; Chytкова, 2011). In contrast, in the westernised, post-communist Romanian culture, women are often represented as free from imposed patriarchal gender roles, and embracing a more individualistic, self-centered attitude (Bucur and Miroiu, 2018).

Despite home-cooked food being at the core of Romanian traditional eating practices, socio-cultural and anthropological research on women’s role in sourcing, preparation, and serving of food is scarce. While several studies investigate issues related to gender equality in post-communist Romania, these are mostly situated within broader political, religious, and economic contexts (Oprica, 2008) or within the binary stereotype of good (domestic, passive) / bad (evil, seductive) (Ursa, 2015).

Aim and Objectives

With this study I aim to uncover contemporary gender role narratives and family dynamics by investigating table manners, rules, rituals, and traditions at the Romanian dining table. I explore the evolution of eating practices in Romanian culture through the lens of migration, drawing from my own experiences as a Romanian immigrant in the United Kingdom (UK) as well as from the experiences of other Romanians living either in the native country or in the UK. By blending elements of migration and acculturation, this study provides a nuanced perspective on the development and evolution of gender role narratives both from migrant and non-migrant perspectives.

Study Design

- Semi-structured interviews (5 Romanian-born participants living either in Romania or in UK).
- Critical thematic analysis (Lawless and Chen, 2018), a two-stage coding process: (1) open coding to identify recurrent themes and (2) closed coding to identify recurring ideologies.
- Insider position (Charmaz, 2000)

Table 1: Recurrent themes and ideologies in Romanian dining practices

Coding phase	Open coding (repeated, recurrent themes)	Closed coding (repeated, recurrent ideologies, positions of power, status hierarchies)
	• Adaptation • Sacrifice • Pride • Identity • Traditional norms • Modern (Western) norms • Assimilation	• Gender-based hierarchies • Gender identity negotiation • Marital status hierarchies • Gendered power dynamics
Findings/interpretation		

source: developed by the author.

Findings & Further Research

Romanian society still maintains a rather conservative, traditional attitude, with clearly defined gender roles with regards to rules and rituals in the context of family dinners. Although less prominent than it was in the past, there is an expectation that women are more involved in food related household tasks and have a responsibility for organising mealtimes. This supports the hypothesis of gender identity being socially constructed and reinforced through societal norms and expectations (Freud 1994). It is important to acknowledge that these perceptions are changing, as societal attitudes toward gender roles continue to shift, with more individuals challenging traditional norms and engaging in cooking and domestic duties regardless of gender. Further research could investigate traditions, table manners and gender gender-related power dynamics within the context of transnational families. Studies could further explore the topic through the lens of culinary capital, considering dimensions of class and social status.



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Pictures:

Banner: Adobe Stock (2024) institutional licence.
Main body: traditional Romanian dishes (left: papanasi; right: stuffed peppers); author's personal archive.



Empowerment Through Research: Bridging Academia and Society

BNU Alliance Fund

Project Title: Development and Enhancement of Hospitality Employability Skills

Missenden Abbey International Hotel and Hospitality School

Lisa Wyld & Alexandra Constantinescu

Project Summary:

This project aims to develop a new, short, non-credit bearing course training programme for members and beneficiaries of “**Only a Pavement Away**” which is a charity founded by representatives from the hospitality industry. The charity organisation supports people from disadvantaged backgrounds who are struggling to go into work, to overcome hurdles by finding jobs within the hospitality industry.

Project Objectives:

- to deliver a short, non-credit bearing course focused on developing and enhancing employability skills.
- to create capabilities for further training that can be utilised by the external organisation.

Key Deliverables

- A set of 4 **training videos** used for asynchronous teaching and learning.
- A total of 4 in-person **training sessions** delivered on site.
- An in-person **‘train-the-trainer’ session** aimed at developing Only a Pavement Away internal trainers to deliver further training sessions.
- A **resource bank** comprising of case studies, examples of good practice, and learning materials aimed to inform and support the training programme.

External Partner:

ONLY A PAVEMENT AWAY
STABILITY THROUGH EMPLOYMENT

Project Impact:

Knowledge Exchange:

- gaining a better understanding of challenges faced by those looking to start or build a career in this industry.
- bridging the recruitment crisis by fostering new career pathways.
- developing and enhancing employability skills and work capabilities.

Social Engagement and Inclusivity:

- overcoming employability barriers faced by disadvantaged groups.
- building up on the collaboration between academia, industry, and community support networks - by facilitating training and development programmes for those in need.

2024



Empowerment Through Research: Bridging Academia and Society

Knowledge – Application – Employability: An Authentic Assessment Framework for Hospitality Management Education

Missenden Abbey International Hotel and Hospitality School
Alexandra Constantinescu & Lisa Wyld

Context and Rationale

Authentic assessment has gained increased scholarly attention, with scholarly research being centred around various dimensions and applications in academic practice, as well as benefits related to enhancing employability, industry-readiness, and graduate outcomes. The advancement of generative Artificial Intelligence tools is disrupting teaching, learning and assessment environments, challenging educators to re-evaluate and adapt their practices, ensuring that they are not only authentic and industry relevant, but also robust and compliant with academic integrity standards.

Few studies are specifically focused on authentic assessment in hospitality as a distinct subject area. Smith et al., (2015) re-iterates that authentic learning in hospitality education requires the application of theory to real-world circumstances. Nyanjom et al. (2020) investigate the integration of authentic assessment tasks in work-integrated learning in hospitality internship, recommending that authentic assessment tasks should become an integral part of hospitality internships. Steriopoulos et al. (2022) emphasise the vital importance of co-creation among students, educators, and industry. The authors acknowledge the significant role of involving students in authentic assessment design, showcasing how this enhances employability and has the potential to increase overall satisfaction and engagement with studies. What these studies have in common is an overarching theme of industry relevance, underlined by a three-fold co-creation process that is at the core of authentic assessment design for hospitality education.

Theoretical Underpinning

- Constructive Alignment theory (Biggs & Tang, 2011)
- Equity-Agency-Transparency principles (Evans, 2016, 2022)

Methodology

Case study - inductive approach – non-linear iteration of Design Thinking (Brown, 2008):

- Empathising
- Defining
- Ideating
- Prototyping
- Testing

Key Takeaways

Embracing authenticity in assessment elevates the quality of hospitality education and contributes to nurturing future professionals that thrive in the diverse and dynamic landscape of the hospitality industry. Creating assessments that align with industry expectations and best practices, empower students to develop the skills and knowledge necessary for success, whilst fostering a deeper appreciation for the real-world impact of their knowledge and expertise.

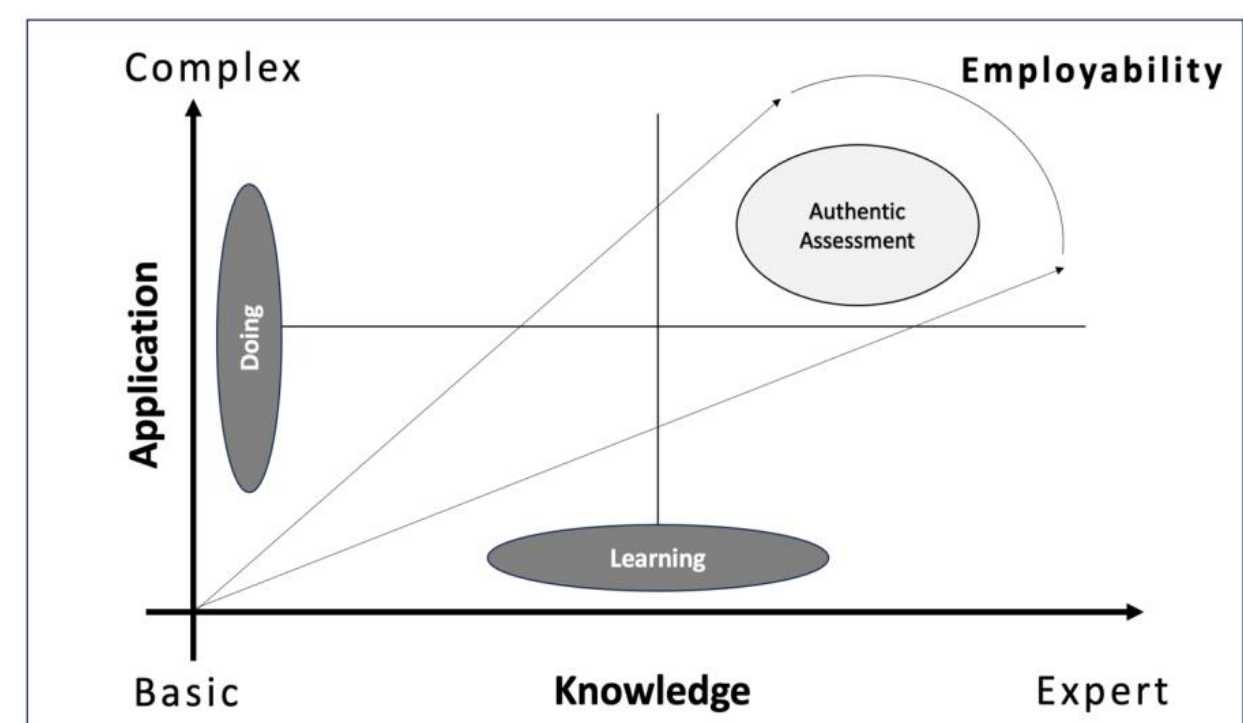
Application Axis

Supports the development of authentic, practical assessment tasks, that can similarly be scaffolded from basic applications and interpretations of concepts, up to complex integration of theory into everyday industry practice – where higher complexity levels build up towards increased employability outcomes.

- case studies.
- performance-based assessments (live events, simulations, podcasts, gamification, role play tasks).
- essays, presentations, reports: re-designed to reflect different types of writing for wider ranges of audiences.

The Knowledge – Application – Employability Framework

source: developed by the authors



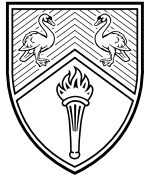
Knowledge Axis

Serves as a guide for scaffolding knowledge from basic understanding of constructs to complex, critical appraisal of theoretical frameworks that enable students to develop increasingly higher-order capabilities such as analysis, critical evaluation, problem-solving, and innovation, or original idea generation.

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Empowerment Through Research: Bridging Academia and Society

Music4DisplacedDyads: Dilemmas in Documentary Filmmaking within a sensitive environment Dr Tom McGorrian



Music Therapist, Ellie Matthews, with Ukrainian mums and their toddlers

Introduction

Any filmmaker who sets out to make documentaries faces multiple challenges, not least of which is a set of ethical issues inherent in the process. How to portray subjects of the film? What to shoot and what not to shoot? How to edit so that the film is true to its topic and subjects, yet also works as a compelling story for the audiences? Representing people with dignity and empathy are of vital importance too. When working in clinical settings, there are the added issues of client confidentiality that must also be navigated, as well as cross-disciplinary collaborations. This poster explores a produced film documenting a feasibility project (Music4DisplacedDyads, Principal Investigator: F. Franco and Co. Principal Investigator for SEMPRES: L. Slabu). The project implemented and tested a short music therapy intervention. The aim of the project was to reduce negative outcomes of traumatic migration in two generations: refugee Ukrainian caregivers and their young children (less than three years old). The film illustrates the process of organising and delivering the music therapy intervention, including psychological measures of mental health, wellbeing, parenting, and physiological stress regulation.

Methodological Decisions and Rationale:

The aim of this research film was to observe how a study of trauma participants who use music therapy might be used to develop documentary practices for sensitive contexts. The suitability of video ethnography was evident, particularly the specific benefits of undertaking it by means of capturing interviews and observations on camera (my core, video raw data) and analysing the footage to show how the music therapy is delivered by experienced practitioners and the potential contribution of dyad users to the design and delivery of services (my analysis of raw data). My research concurrently used both a reflective and empirical approach, using a practice-based enquiry methodology (Murray & Lawrence, 2000). As a result, a reflective journal documenting my research visits during the pre-production period, as well as the production artefacts, forms the reflective raw data, or data set, gathered across 12 weeks of production. Several completed films were created. The first was a 15-minute film using interviews with participants to highlight their music therapy experiences. Shorter, interview-based films were also created, with content overlap, as vignettes to be used for conference presentations. When characterising ethnographies participant observation can be either overt or covert and, while it generally involves immersion in the field for a long period of time, 'micro-ethnography adopts a more focused approach on, say, one aspect or element of a work or social setting, allowing for observation over a few weeks or months' (Gray, 2014: 164). It is this sub-set approach that I specifically intended to adopt for my research project. The driving force is specifically the insider perspective.

Findings:

I settled on the following tenets as practical principles for sensitive filming:

1. Firstly, is relinquishing a sense of control, aiming instead for utter fluidity, accepting whatever arises. In following a group of individuals suffering from trauma, the findings revealed that events do not always work out in an orderly fashion. Often, my scheduling was thrown into disarray by interviewees who did not physically appear for filming or chose to stay for a much shorter time than we had intended. Filming in a sensitive environment requires immense patience and flexibility, and filmmakers must always keep sensitivity at the forefront. It is recommended to deal with what is happening before one's eyes at any time rather than worry that your mission is to form some kind of story. Such concerns can be left to planning and post-production.
2. Secondly, it is recommended that one avoids chasing after soundbites and looking for interview segments that are representative of the overall findings. It is important to note that, when working in a sensitive environment, these do not correspond to the most emotionally compelling moments: they arise as they will, when they will.
3. Thirdly, it is prudent to produce a 'paper edit' (comprising sections from the interview transcripts) promptly for the editor to inform of segment sequence, text positioning and such matters. This level of storytelling is partly in response to the sensitivities experienced and the implicit, unspoken aspects of the experiences that so far may have escaped recording yet remain fresh enough in the director's recall. This may include specifying the music or voice-over and a video sequence to engage viewers and to end with an inspirational piece, for example.
4. Finally, appreciation is the first step in achieving exposure for the good of future stakeholders and paving the way for future projects. In addition to creating the Music4 Displaced Dyads video, I produced various iterations of the final film for all participants, making available further copies for other stakeholders. The anecdotal feedback was positive, including warm appreciation from all involved.

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Acknowledgements:

Dr Elizabeth Coombes, Researcher and Course Leader, MA Music Therapy at the University of South Wales.
Dr Fabia Franco former Associate Professor and Director of the Music Cognition and Communication Lab at Middlesex University, London.
Dr Letitia Slabu, Senior Lecturer in Psychology at Middlesex University, London.
Dr Tamara Fedotiuk, originally an academic in Kyiv and is now a Researcher at Risk Fellow (British Academy/Cara) at Middlesex University, London.
A special thank you also to the Ukrainian mothers and their children who for took part in the filming.



Pictured Left to Right: Dr Letitia Slabu, Ellie Matthews, Dr Fabia Franco and Dr Tamara Fedotiuk





This research has been kindly supported by the BNU Alliance Fund with external collaboration from London Heathrow and Luton Airports and Buckinghamshire Country Council (2023-24)



Locally driven sustainable airport surface access solutions for Buckinghamshire

Warnock-Smith, D* and Nweke, U

Introduction

In line with the 9th UN SDG related to Industry Innovation and Infrastructure, UK Airports have progressively focussed on improving their infrastructure and services available for sustainable surface access alternatives. According to Sustainable Aviation (2017) between the years 2006 and 2016 the number of passenger journeys using public transport modes increased from 37% to 44% in the South East of England, whilst outside the South East, it increased from just 13% to 18% over the same period. Although the South East is arguably in a better position than other regions in terms of moving towards more sustainable airport access solutions, there are sub-regions within the South East that do not benefit from the same level of infrastructure or choice of services as those that are typically offered within airport LA boundary areas (e.g. Heathrow and the Borough of Hillingdon or Luton airport and Luton Borough. Buckinghamshire is one such area. According to recent survey work from Heathrow Airport 52% of airport journeys to/from Buckinghamshire were made by more unsustainable private vehicles, compared with 47% for Bedfordshire and 39% for Berkshire.

Building on previous BNU airport surface access work (e.g. Risby et al., 2021), this study represents phase 1 of a wider project where more granular data at Middle-Layer Super Output Area (MSOA) level within Buckinghamshire (including MK) are obtained to pinpoint where private vehicle journeys and a lack of

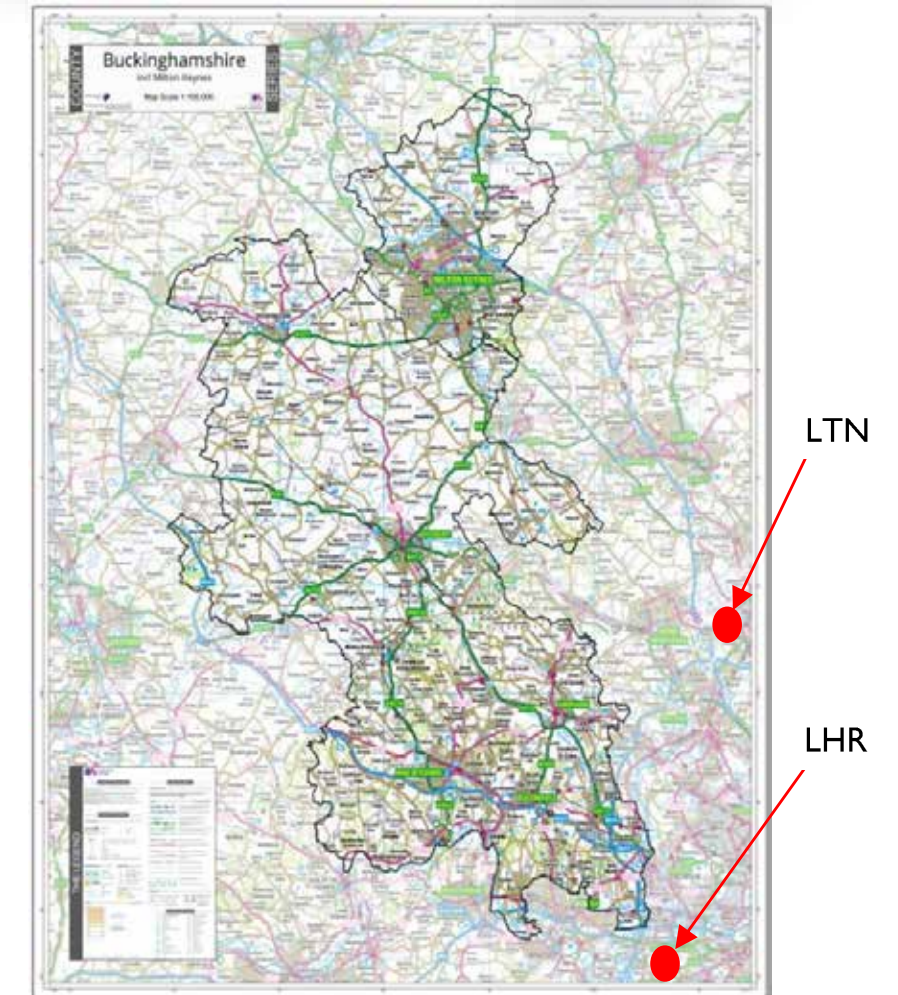


Fig 1: Buckinghamshire and participating airports

Methodology

For 67 MSOA areas in Buckinghamshire (including MK), a sample of recent local journey patterns to/from London Heathrow and Luton airports was obtained through BNU survey work and cross-checked against more aggregate results from the airport participants' survey data. This data was used to determine a ranking of single occupancy private vehicle journeys in terms of prevalence and volume by origin point in Buckinghamshire. A list of currently available access options was then derived for each MSOA in the county to include rail, bus/coach and road (private vehicles) with factors such as average trip durations, costs and reliability considered. The results were then superimposed onto detailed ONS supported maps at MSOA level to highlight areas of the county that are most in need of solutions in order to maximise the impact of any interventions on the sustainability of surface access journeys from Buckinghamshire to

Some Next Steps

- Complete BNU airport journey pattern survey and cross-check with aggregate airport survey data
- Complete heat maps and ranking of MSOAs in Buckinghamshire by volume and prevalence of Single Occupancy vehicle usage and alternative transport capacity
- Hold results workshop with the stakeholders (LTN.

Some Preliminary Findings

- Areas of Buckinghamshire with viable alternative connections to Heathrow and Luton are currently limited. There is no currently viable bus or rail option from any location in the county to Luton Airport and only a handful of locations in South Buckinghamshire that have connecting rail options to Heathrow along with one bus and one coach option that run from and through High Wycombe respectively.
- Due to typical journey purposes the distances involved from any part of the county to Luton and Heathrow, active travel (walking and cycling) is of negligible viability

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2024



Empowerment Through Research: Bridging Academia and Society

Evidence Based Policy on Quality Assurance in Business and Management in Ukraine

The research is financially supported by the Policy Support Fund 2023/2024

The aim of the project is to support the development of the National Policy for Quality Assurance in Business Higher Education in Ukraine.

Evidence is collected by conducting a study in Ukraine that provides the National Agency for Higher Education Quality Assurance in Ukraine with data on academics' opinions and expectations regarding QA. Ukrainian National Quality Assurance Agency of High Education (UNQAA-HE) and the Ukrainian Institute for Education and Research (UIER) are the external collaborators.

What triggered the development of the Project?

Policy makers have no reliable data to base their decisions on. This project is, on the one hand, providing data that reveals academics' opinions and expectations regarding a new, sustainable assessment QA framework for the Economics Study sector in Ukraine and, on the other hand, developing a framework for collecting data on a regular basis.

Methodology

A three stage Delphi study involving experts from 16 Ukrainian universities is used to collect data and develop the QA assessment framework that is subsequently provided to the UNQAA agency.

Conclusions

The Guiding Principles below are intended as a framework for Faculties to consider when establishing new or reviewing existing assessment.

The assessment process should be objective and repeatable over time. All assessment activities have clearly explained assessment criteria, weightings and level descriptors that are understood by students and lecturers.

Assessment should be approached holistically and designed 'top down' - beginning with the award, then going down into module level. Assessment design should consider multiple modes and try to include employers.

Assessment methods and criteria are aligned to teaching activities. Learning outcomes, assessment criteria and teaching activities are developed in accordance with the academic level of study, using clear descriptors.

Assessment should be inclusive and offer to every student an opportunity to demonstrate their achievement through the assessment, with no individual or group disadvantaged.

Assessment policies, regulations and processes are explicit and accessible to students and academics involved in the assessment process. Students are clearly informed of the purpose and requirements of each assessment task and the standards expected.

Assignments should be moderated or double-marked to ensure fairness and consistency.

Students should be provided with timely feedback to support the learning process.

Author: Dr Dorin Festeu, School of Business and Law

2024



Empowerment Through Research: Bridging Academia and Society

Jonathan Jackson

Senior Lecturer in Digital Apprenticeships
Creative and Digital Industries

Enhancing Social and Emotional Learning and Employability through Team-based Live Brief Projects

Live Briefs

Live brief projects can be described as a type of “experiential learning where students are supported through their university to work on a real world project involving a client or user” (Rochon, 2022) and can afford transformative experiential learning (Sara, 2011; Wink, 2005).

Boz et al. (2021) define Live Briefs as a type of work-integrated learning (WIL) and an approach to engaging and assessing students “by using current, real-world activities devised and presented by professional partners in collaboration with academic staff.”

The existing literature on Live Brief projects demonstrates the variability and flexibility of the approach (see Table 1).



Country	Students	Size of teams	Level	Mode	Subject context	Notes and references
Poland	296	4	P	F2F (?)	Informatics / Software	Included inter-university teams (Porubán and Bačíková, 2016)
USA	unknown	3-5	U + P	F2F	Human-Computer Interaction	Involved cross-disciplinary and inter-level teams (Bethel, 2017)
Germany	63	up to 17	U / P	O + F2F	Marketing	Included large inter-university teams (Baaken, Kiel and Kliewe, 2015)
USA, Canada, UK, Australia	6000+	~5	U / P	O	Various	Experiential learning software vendor perspective (James, Humez and Laufenberg, 2020)
Australia	100+	3-8	U / P	O + F2F	Business & Management	(Schonell and Macklin, 2019)
Ireland	48	6	P	F2F	Marketing	(Freeman et al., 2020)
USA	4+	4	U + P	F2F	Engineering / Manufacturing	(Perrin et al., 2008)
UK	~30	~5	U	F2F	Architecture / IT Consultancy	(Sara, 2011)

Table 1 - Published examples of live briefs being utilised in Higher Education Institutions.

U + P = individual teams included both undergraduate (U) and postgraduate (P) students

U / P = undergraduate (U) and postgraduate (P) students were not mixed

O + F2F = individual teams included both online (O) and face-to-face (F2F) students

Student-staff-stakeholder partnerships, authentic assessment, and employability

Harrington, et al. (2014) define a partnership as a relationship where “all participants are actively engaged in and stand to gain from the process of learning and working together”.

“Authentic assessment should be that which enables a student to find their place in society and be recognised for their contribution to that society” (McArthur, 2023)

Employability

Oliver (2015) refers to employability as “a process of learning for life” and builds on the definition presented by Yorke (2006) by proposing that:

“Employability means that students and graduates can discern, acquire, adapt and continually enhance the skills, understandings and personal attributes that make them more likely to find and create meaningful paid and unpaid work that benefits themselves, the workforce, the community and the economy.” (Oliver, 2015)

Live Briefs Projects at BNU

#	Project Title	Categories	Themes	Stakeholders	Student type
P1	Wycombe District Council World War I Heritage Trail Map	Social; Education	Local history; Community education	Local Authority	U
P2	Safe Places Administrative Portal	Social; Health	Community support; Mental health	Local Authority; Community Interest Company (CIC)	U
P3	360-degree Virtual Property Tours for Estate Agents	Commercial	Business optimisation; Property market	Module Tutor	U
P4	Property Data Mapping Tool	Commercial	Geographic Information Systems (GIS); Housing and planning	Local entrepreneur	U
P5	Signly Meet	Social; Commercial	British Sign Language (BSL); Accessibility	Startup founder	A
P6	Apprenticeship Learning Tracker	Commercial; Education	Vocational education	Module Tutor	U
P7	Embedded Trigger Warnings for a Media Streaming Service	Social; Commercial	Digital accessibility; Mental health	Digital Accessibility Manager	A
P8	MediLingo: Medical Terminology Learning App	Commercial; Education	Educational Technology; Healthcare education	Extra-departmental academic	U
P9	Reflecta: reflection for learning and wellbeing	Commercial; Education; Health	Wellbeing; Reflective learning; Privacy	Extra-departmental academic	A
P10	Digital Communication Solutions for Private Healthcare Providers	Commercial; Health	Digital healthcare	General Practitioner (GP)	U
P11	Food Poverty Mapping Project	Social; Health	Civic engagement; Food poverty	Head of Civic Engagement within university	A / U

Table 2 - Example Live Briefs deployed in final-year “Digital Innovation” module at BNU between 2016-2023 within a Computing subject context.

A = Apprentices (part-time)

U = Undergraduate (full-time)

Social and Emotional Learning

Social and Emotional Learning (SEL) enables students to acquire and apply the knowledge, skills, and attitudes needed to manage emotions, develop empathy, and build healthy identities (CASEL, n.d.). Emotionally engaging students can support wellbeing (Grové and Laletas, 2020; Edwards et al., 2019) and Live briefs with a significant social or civic focus can be of greater pedagogical value as underpinned by student feedback, enhancing their motivation and a deeper sense of commitment to the learning process.



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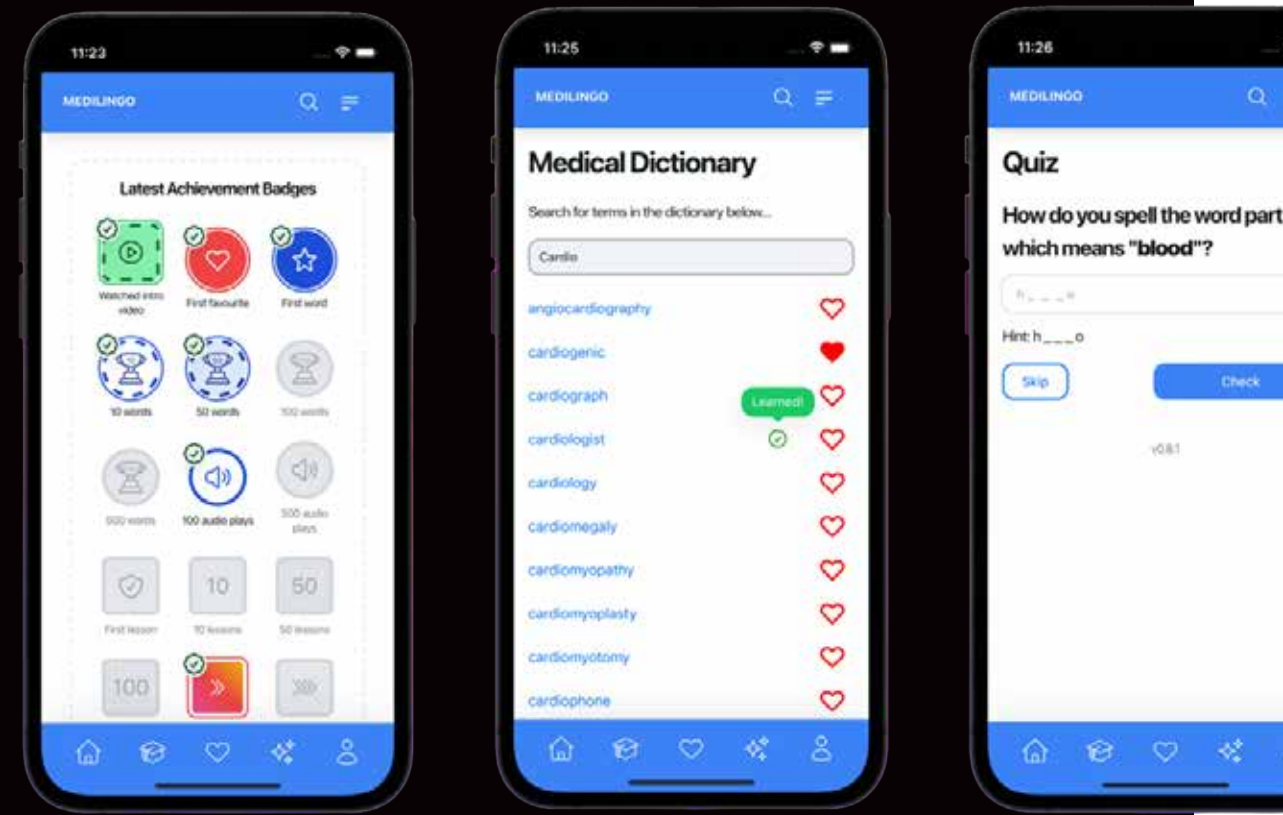
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Empowerment Through Research: Bridging Academia and Society



mLearning with MEDILINGO

Decoding medical terminology like a language for Nursing students

Medical terminology enables effective communication among healthcare professionals by offering precise meanings regarding patient health. Many students find learning medical terms challenging due to the complexity of these terms, which derive from Greek and Latin. Research suggests that students perceive value in receiving dedicated teaching on the linguistic rules of medical terminology.

The aim of this quantitative study was to measure the impact of an mLearning prototype, named MediLingo, on students' learning of medical terminology like a language by decoding complex terms into simpler prefixes, roots, and suffixes.

Methods

A non-experimental, pre-test and post-test design, alongside a cross-sectional survey was applied. Purposive sample comprised 44 pre-registration undergraduate first-year BSc (Hons) nursing students at BNU. SPSS Version 28.0 was used to conduct the quantitative data analysis.

Participants completed a base-line pre-assessment prior to using MediLingo for a 6-week duration to learn medical terms. Participants self-directed their app use, which was then followed by a post-assessment and survey.

MediLingo was developed as a cross-platform, mobile-optimised web application incorporating evidence-based language learning strategies, namely spaced repetition and linguistic morphology. MediLingo provided approximately 2500 categorised medical terms and definitions alongside 1300 word parts. Participants chose to learn terms using lessons, flashcards, quizzes, AI-enhanced audio pronunciation, dictionary searching, and favourite functionality.

Results

Of the 44 participants who used MediLingo, 29 completed the pre-assessment, 28 completed the post-assessment, and 21 completed both the pre and post-assessment. The mean pre-assessment result for these 21 participants was 16.57 out of 40 marks (41%). The mean result for the post-assessment was 22.43 marks (56%). On average, post-assessment results improved by 5.86 marks (15%) following use of MediLingo, which was shown to be statistically significant by a paired sample t-test; $t(20) = -2.499$, $p = 0.0215$.

A Spearman correlation determined a moderate positive correlation between engagement with MediLingo and post-assessment scores ($r(26) = 0.394$, $p = 0.038$), indicating that participants who engaged more with the tool achieved higher post-assessment scores.

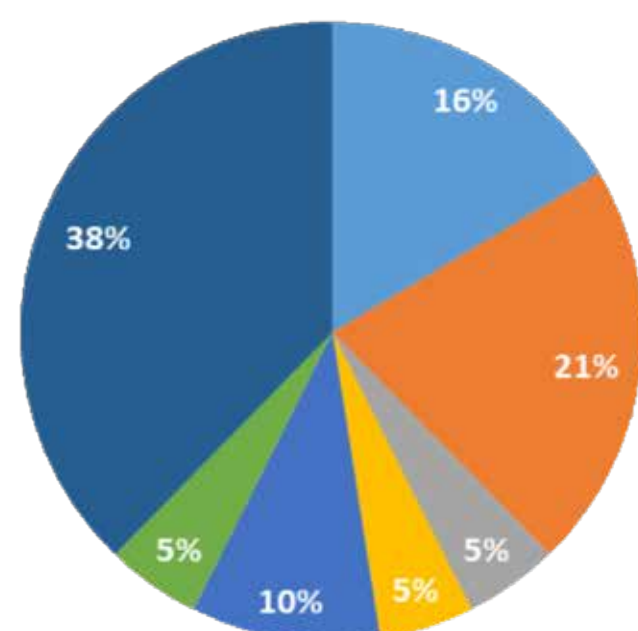


Figure 1. Most beneficial features of MediLingo

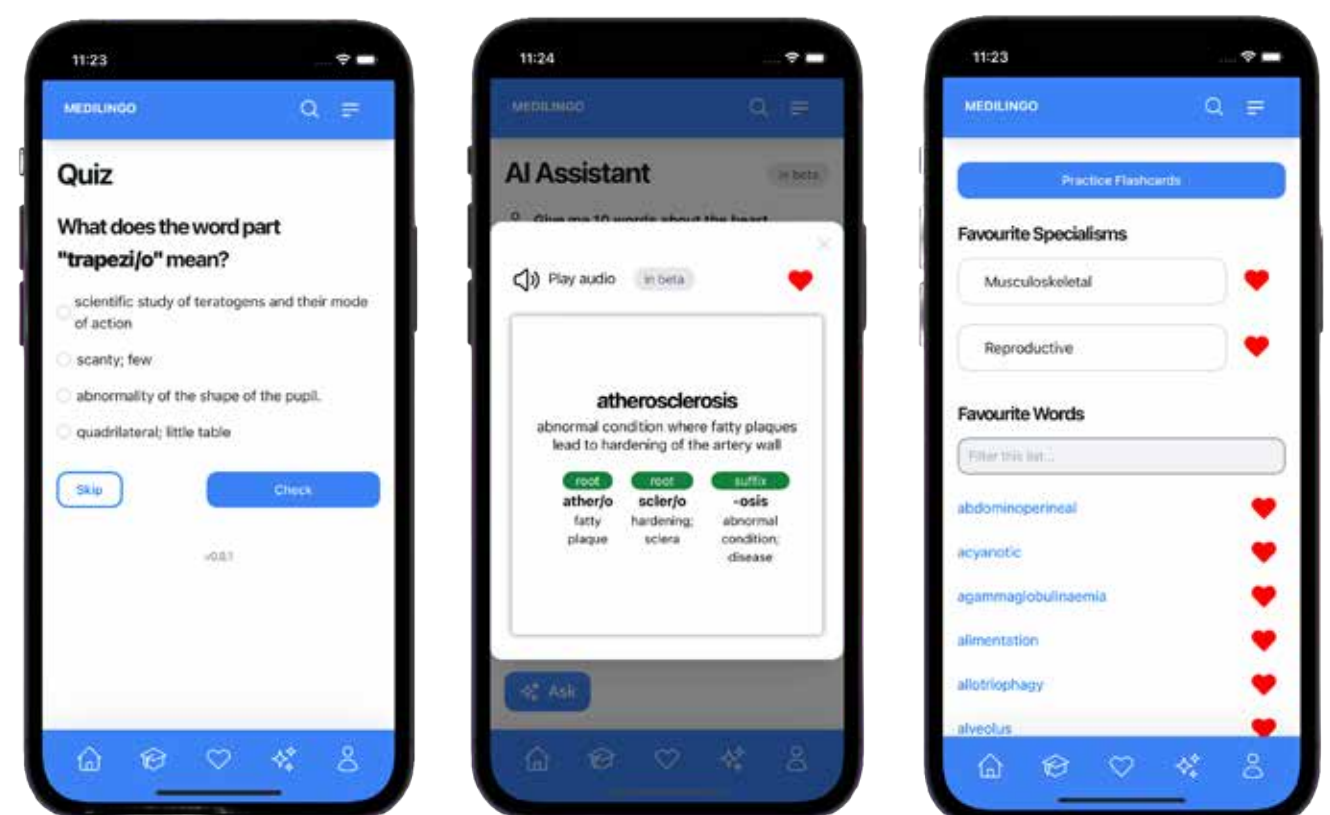
Nic McAllister, Taryn Tavener-Smith, and Jonathan Jackson
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Discussion

Teaching and learning medical terminology in highly prescribed nursing programmes in the UK remains challenging for students and educators. Complementary digital tools offer the opportunity for students to self-direct their learning according to their own personal needs, whilst offering educators a time efficient means of supporting students' acquisition of fundamental knowledge outside of the classroom.

The evidence-based language learning strategies incorporated into MediLingo were valued by the participants and proved to be an effective approach. This was evidenced by 95% of participants who agreed that using MediLingo was both helpful for academic study and increased knowledge of medical terminology. 93% agreed it would be helpful for clinical practice and 88% agreed that MediLingo was easy to use. Overall, participants valued learning to decode terms with 21% choosing this feature as the most beneficial (Figure 1).

In an increasingly digitised society, development and integration of mLearning tools offers a promising adjunct to traditional pedagogical approaches with the potential to enhance student learning both in the academic and clinical environment.



Limitations and recommendations

The limited sample size and purposive sampling method applied in this study limits the results' generalisability. Further research incorporating a larger sample, alongside additional development of the MediLingo tool to extend its vocabulary and refine its features, would prove advantageous.

- Learning checks
- Decoding
- Saving progress
- Spelling
- Lessons
- Pronunciation
- All features listed



Empowerment Through Research: Bridging Academia and Society

'It's overwhelming, looking at an assignment brief...': Promoting inclusive assessment practice through effective assignment brief design

John Knight
Academic Developer
Academic Practice and Curriculum Development

Poorly designed assignment briefs exacerbate students' anxiety and impede effective engagement with summative assessment (Walsh, 2021; Knight, 2022). Boud (1995) stressed that while students can circumvent poor teaching, they cannot (if they wish to graduate) 'escape the effects of poor assessment' (p.35). This statement can usefully be extended to include the inescapability of poorly designed and communicated assignment briefs, which must be 'models of clarity' (Sadler, 2015, p.12) if students are to understand how to approach and complete their assessed work to the best of their ability.

A small-scale interpretative phenomenological study conducted at Buckinghamshire New University into students experience of assignment briefs with 5 first year students from Social Work and Business confirmed high levels of student anxiety around summative assessment. The institutional assignment brief template was found to be helpful in providing a consistent, learnable means of engaging with sometimes complex assessment information. In addition, access to friendly, available and supportive staff helped mitigate anxieties and was valued highly. However, students also wanted to engage with their assessed work independently.

Findings suggest that confident, agentic engagement with assignment briefs and assessed work is afforded by:

- **Comprehensiveness** ('One brief to rule them all...')
- **Consistency** and **explicitness** of instructions and practicalities (E.g., identification of required referencing and presentational styles, etc.)
- **Clarity** and **conciseness** (Complexity impedes engagement and heightens anxiety)
- **Progressive scaffolding** of task and content (Brief indicative guidance that provides a way into the task, but does not over-specify and overwhelm)
- Tasks that allow students to engage from a position of strength, drawing on **existing knowledge and identities** as a basis for new learning (Aiken, 2021)

Students from non-traditional backgrounds may be particularly disadvantaged by poorly designed assignment briefs as they may locate problems in the communication of the assessed task in themselves, with subsequent impact upon their confidence, growing identities as learners and sense of belonging. There are also indications that overly proscriptive, monologic approaches to sharing assignment briefs involving unidirectional 'telling' of students about assessment expectations and requirements may serve to disempower and promote feelings of dependency.

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Empowerment Through Research: Bridging Academia and Society

The impact of aviation policies on pro-sustainable tourism: a case analysis of ten priority nations with a high reliance on incoming tourists arriving by air



Introduction

This study is the second phase of a research project that reviews 10 developing countries identified in phase one (Table 1) using an index ranking system to identify those states that relied on visitors arriving by air and how these balance with their sustainable regulations, legislation and plans for sustainable tourism growth.

Table 1: Top 10 countries by tourism and air transport reliance

Country	Development ranking	Indexed development ranking	Annual international tourist arrivals	Indexed annual tourist arrivals	Percentage of annual tourist arrivals by air	Total Indexed score
Thailand	3	75%	39,916,000	18%	83.90%	177%
Cuba	3	75%	4,276,000	2%	100%	177%
Philippines	3	75%	8,261,000	4%	98.00%	177%
Maldives	3	75%	1,703,000	1%	100%	176%
Turkey	3	75%	51,747,000	24%	77.00%	176%
Timor-Leste	3	75%	74,800	0%	100%	175%
Sri Lanka	3	75%	2,027,000	1%	94.50%	170%
Qatar	3	75%	2,136,500	1%	90.80%	167%
Lebanon	3	75%	1,936,000	1%	89.80%	166%
Spain	1	25%	126,170,000	58%	82.3%	165%

The research team compared aviation commercial policies, and environmental regulations and legislation for each country in Table 1 with a qualitative score being given for each area towards a final estimate of the extent to which aviation policy is helping or hindering pathways towards pro-sustainable tourism growth.

Initial findings

Not surprisingly the primarily developing countries listed in Table 1 have a great emphasis on economic growth and increasing tourism economic output rather than limiting the excesses of visitor volumes in line with pro sustainable growth. This is especially true of those countries who rely on visitors from aviation only such as Timor Leste and the Maldives

There is some evidence that some countries might be concentrating a bit more on pro sustainable tourism such as Thailand that has whole resorts dedicated to sustainability initiatives but in the main visitors arrive by kerosene-based air transport even if they also offset their footprint.

Balancing the two areas of pro-sustainable tourism policies and economic growth and development has never been more challenging.

Research Team

Gail Rowntree, David Warnock-Smith, Marco Chan, Dalia Kozik, Ahmed Mainatt

Finishing Date and Spin-off training

End of July for a short course in collaboration with ICAO/UNWTO starting in early 2025 that will be the first of its kind, underpinned by this research

2024



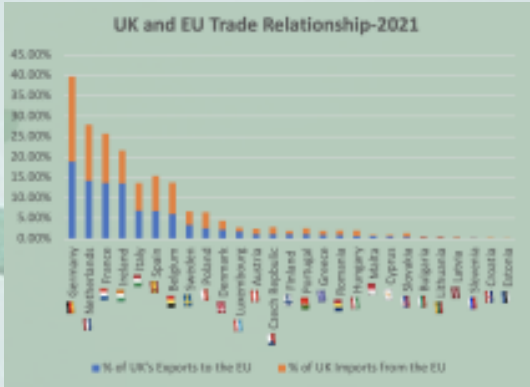
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UK BIOECONOMY STABLE WOOD PRODUCTION AND TENURE RIGHTS POST BREXIT

Introduction

Post-Brexit, the UK's bioeconomy, including forestry, struggles with a trade openness decline, partly due to Brexit. The OBR predicts a potential long-term productivity and trade intensity drop. The situation remains complex, with varying opinions on Brexit's actual impact, calling for detailed analyses of the forestry sector's economic and environmental changes.

- ❖ The trade openness in the UK, measured as the trade-to-GDP ratio, which fell by 8 percentage points between 2019 and 2021 due to Brexit-related factors among others.
- ❖ The OBR's assessment that Brexit might lead to a 15% reduction in trade intensity, although this is a projection and not yet confirmed by the available data.

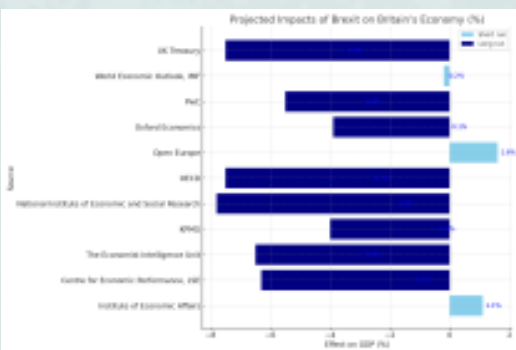


Opportunities for Innovation

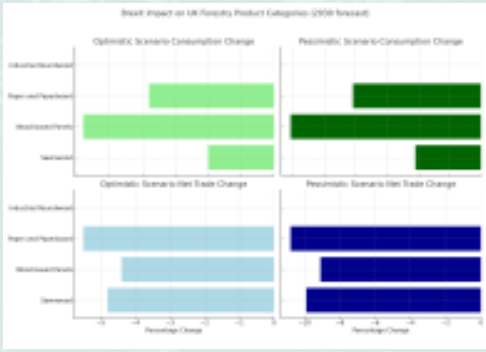
Agroforestry, which combines trees with crops or livestock, boosts agricultural efficiency, biodiversity, and well-being. It's cost-effective, offering diverse outputs and reducing dependency on single products. Emerging precision technologies in agroforestry improve resource use and sustainability. Policies now encourage its adoption, recognizing agroforestry's role in resilient, sustainable, and economically viable agriculture.



The projected impacts of Brexit on Britain's economy



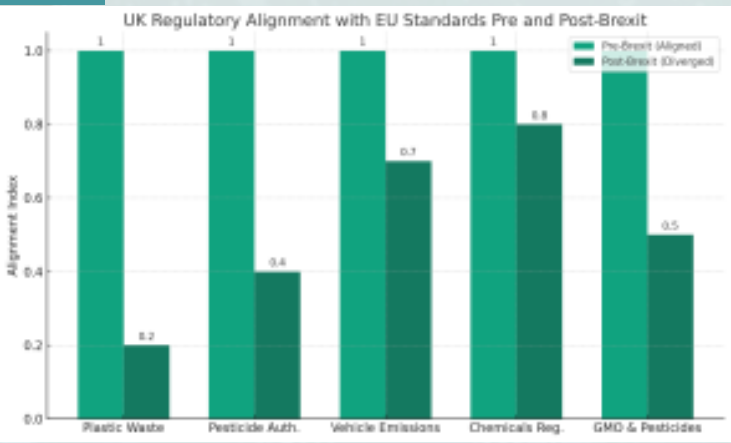
The projected impact of Brexit on various UK forestry product categories by 2030, according to both optimistic and pessimistic scenarios.



In 2021, post-Brexit UK imports reflected a mixed picture: pulp and paper imports fell by 3% to 5.2 million tonnes, whereas sawn wood and wood-based panel imports grew by 13% and 12% respectively, indicating a shift in trade dynamics and diversification within the forestry import sector after leaving the EU.

Key Challenges

Post-Brexit, the UK aligns closely with EU environmental rules but has diverged on issues like plastic waste and pesticides. Despite leaving EU REACH, UK firms must follow its regulations for EU market access, affecting businesses across the UK and EU. These changes broadly impact regulatory practices, likely influencing forestry management, trade, and investment.



Plastic Waste Management: Post-Brexit, the UK opted for a different approach from the EU's ban on exporting plastic waste to non-OECD countries.

Pesticide Authorization: The UK's emergency authorization for a product containing thiamethoxam marked a divergence from the EU's ban.

Vehicle Emissions: Adjustments in emissions targets for GB compared to the EU-wide fleet standards.

Chemicals Regulation (REACH): The UK continues to recognize EU substance registrations under UK REACH, indicating partial alignment.

GMO and Pesticides: Potential divergences in regulations, especially concerning gene-edited organisms and pesticide use.

Aligned

Diverged

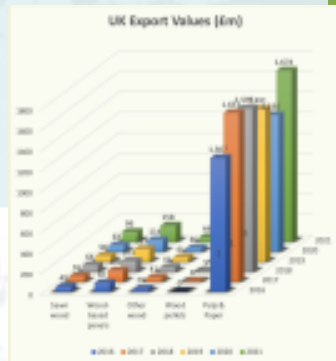
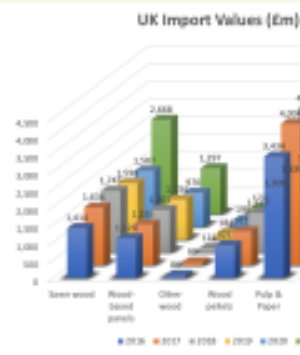
Pre-Brexit (Aligned): Before Brexit, the UK WAS fully aligned with EU regulations in all categories, indicated by a score of 1 across the board.

Post-Brexit (Diverged): After Brexit, the alignment scores vary, reflecting the degree of regulatory divergence in each category, such as significant divergence in plastic waste management and moderate alignment in chemicals regulation.

BUCKINGHAMSHIRE NEW
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Dr Indrachapa Bandara
Enterprise and Research
Department (RED)



In 2021, UK wood product exports rebounded post-Brexit, rising by 16% to 5.4 million tonnes and 27% in value to £2.0 billion. Pulp and paper dominated exports, comprising 85% of the value, followed by wood-based panels and sawn wood, highlighting a positive shift in the sector's export market.



2024



Empowerment Through Research: Bridging Academia and Society

Research in Progress

Jonathan Jackson Melanie Carter

Empowering Supporters of Vulnerable Households Experiencing Sudden Bereavement Through the Potential Applications of Digital Technology and AI

Household vulnerability

The complexities of vulnerability mean that it cannot be defined singularly. Major factors related to household vulnerability in the United Kingdom include economic, housing, energy, and food insecurity. “3.8 million people (1 million of them children) experienced destitution, the most severe form of hardship, at some point in 2022... unable to meet their most basic physical needs to stay warm, dry, clean and fed” (Joseph Rowntree Foundation, 2023).

Financial vulnerability

In 2023, 29% of adults reported being unable to meet the demand of an unplanned expenditure of more than eight hundred and fifty pounds (Office for National Statistics, 2023).

Food insecurity

In 2022, the Joseph Rowntree Foundation (JRF) showed that food was the essential item that destitute individuals most went without (61%), followed by heating (59%), clothes (57%), and toiletries (51%), light (35%), shelter (14%). Recent years have seen a significant increase in food banks and food parcel distribution (Boyle and Power, 2023).

Digital poverty

Direct interventions enabled by digital technology are potentially undermined due to digital poverty which is still widespread among the UK population. As of 2021, 1.7 million households had no broadband or mobile internet access. 2.4 million adults were unable to complete a single basic task to get online (House of Lords, 2023).

Bereavement

Life events such as bereavement can temporarily heighten individual and household vulnerability and exacerbate pre-existing vulnerabilities. Support is usually needed to help escape the fog of grief (Baglione et al., 2018) and recover to a state of sustainable wellbeing. There is limited literature that investigates the supportive potential that digital technology and Artificial Intelligence (AI) could provide at the intersection of household vulnerability and bereavement.

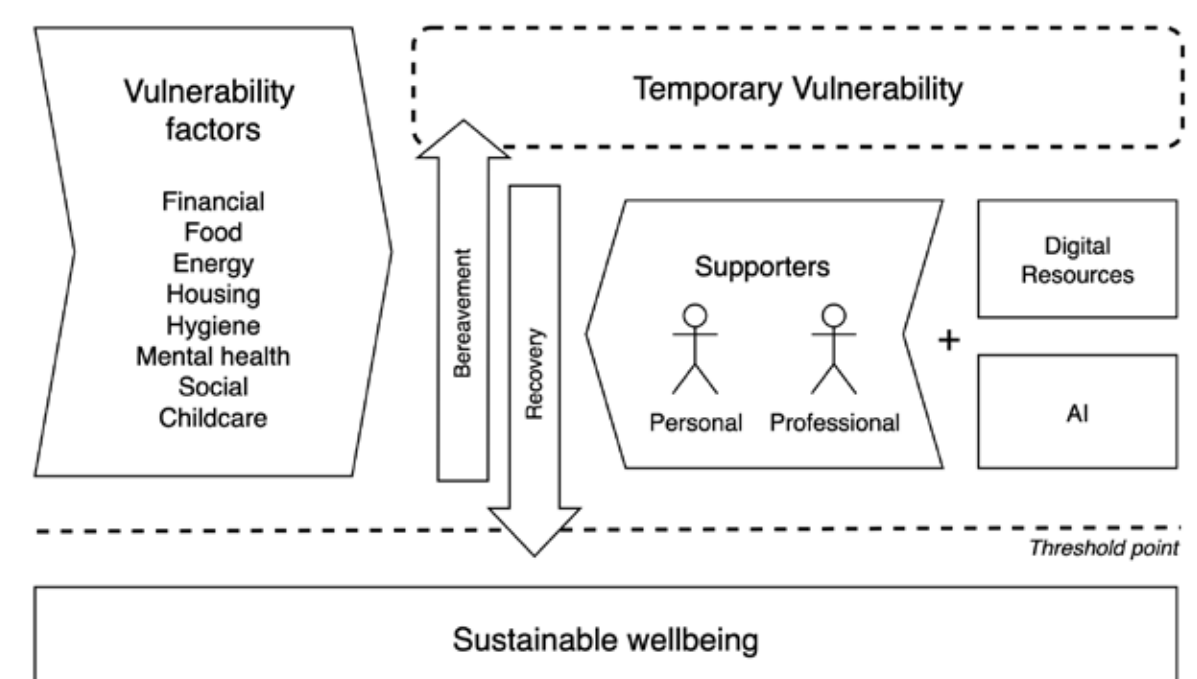
Empowering Supporting Parties

Taking widespread digital poverty into consideration, this research aims to lay the foundations for empowering those who support grieving households. Vulnerable individuals and households would therefore still be able to benefit from digital technologies (including AI) as indirect beneficiaries even if they are experiencing digital poverty. Within the context of this research, those who assist vulnerable ones through bereavement are referred to as Supporting Parties (SPs).

Research Questions

RQ1. What are the main challenges encountered by Supporting Parties working with households and individuals experiencing bereavement?

RQ2. How can digital technologies and AI be used to empower Supporting Parties in their work?



Method

Semi-structured interviewing will be used to understand the challenges SPs encounter in their work supporting households through bereavement, along with their perceptions and attitudes towards Digital Technology and AI within the context of their work. A Constructionist Grounded Theory approach (Charmaz, 2008) is proposed, utilising a combination of purposive and convenience sampling to recruit participants within the target population. Author reflexivity will support the integration of the authors' insider-outsider positionality into the research.

The following list of potential SPs has been constructed based on an initial literature review and authorial expertise, each with varying degrees of proximity to and interaction with vulnerable individuals and potentially with other SPs.

Family; Friends; Food Banks; Schools; Charities; Counsellors; Faith based groups; Funeral directors; Local authorities; Utility companies; Insurance companies; Solicitors; Banks.

To collaborate, please contact: Jonathan.Jackson@bnu.ac.uk



Empowerment Through Research: Bridging Academia and Society

An exploration of determinants of public trust in the police

Dr Tuncay Durna
Senior Lecturer
BNU School of Aviation and Security

INTRODUCTION

- Policing in the UK is rooted in the concept of policing by consent which relates to maintaining the approval, respect, and affection of the public.
- The police will be seriously limited in their ability to do their job without trust and confidence of the public.
- It is, therefore, important to improve our understanding on why people may grant trust to, or withdraw trust from, the police.

Research hypotheses

- H1: Perceiving a high overall anti-social behaviour (ASB) in the local area is associated with lack of trust in the police.
- H2: Being victim of a crime is associated with lack of trust in the police.
- H3: Being dissatisfied with the service provided by the police is associated with lack of trust in the police.

DATA AND METHODOLOGY

- Data from the Crime Survey of England and Wales (2019-2020) is used to explore the determinants of public trust to the police.
- Multiple logistic regression is used to analyse the data

Dependent Variable:

- Trust: ‘Police in this area can be trusted’. Nominal level. 1:Agree, 0:Neither/Disagree.

Independent Variables:

- Victimization: ‘Experience of any crime in the previous 12 months’ Nominal level. 1:Victim of a crime, 0:Not a victim of a crime.
- Contact with the police: ‘Whether had contact with police officers or Police Community Support Officers in the last 12 months? - Was stopped’. Nominal level. 1:Was stopped 0:Was not stopped.
- Perceived level of anti-social behaviour: Nominal level. 1:High overall ASB, 0:Not high overall ASB.
- Dissatisfaction with the police service: ‘Have you ever been dissatisfied with the service provided by the police?’ Nominal level. 1:Yes, 0:No.

Logistic regression results predicting trust in the local police

Variables	B	SE
Age	.003	.002
Gender/Male (Ref: Female)	.111	.065
Ethnic Group (Ref: White)		
Black/African/Caribbean/Black British	-.521	.171**
Asian/Asian British	.185	.153
Mixed/Multiple ethnic groups	-.575	.249*
Other ethnic group	.296	.373
Employment Status (Ref: employed)		
Unemployed	-.361	.231
Economically inactive (Student, retired etc)	-.001	.085
Urban area	-.009	.079
Education Level (Degree or diploma)	.073	.070
Personal and partner gross income	.041	.012***
Victim of any crime in past 12 months	.023	.095
Stopped by the police in past 12 months	1.073	.450*
Perceived level of ASB – High overall	-.518	.113***
Ever been dissatisfied with the police service	-1.263	.068***
Constant	1.345	.156***
N	33,734	

Notes: *p < 0.05, **p < 0.01, ***p < 0.001

RESULTS

- People perceiving a high overall ASB are significantly less likely to agree that the police can be trusted.
- Being victim of a crime in the previous year is not significantly associated with trust to the police.
- People who have been dissatisfied with the police are significantly less likely to agree that the police can be trusted.
- People with higher levels of income are significantly more likely to agree that the police can be trusted.
- Blacks and mixed ethnic groups are significantly less likely to agree that the police can be trusted compared to whites.
- Age, gender, employment status, and education level are not significant predictors of trust to the police.

2024



Building Energy Usage Predictions Using Machine Learning Methods

Dr Shahadate Rezvy, Ms Tasnim Akther, Dr Tahmina Zebin
Corresponding author email: shahadate.rezvy@bnu.ac.uk

1. Introduction and Research Objectives

Buildings are major global energy consumers, responsible for substantial electricity use and CO2 emissions. Enhancing their **energy efficiency is crucial for climate change mitigation and sustainable urban development**. Traditional energy prediction methods often inadequately address the dynamics of building energy use influenced by factors like type, occupancy, and local weather. Given the context and challenges outlined, this study aims to apply the potential of machine learning to advance the predictive accuracy of building energy consumption, specifically focusing on the Site Energy Usage Intensity (Site EUI) of buildings using publicly available energy consumption datasets. The objectives of this research are:

- Feature Analysis and Engineering:** Identify and engineer key features from building and weather data to boost prediction accuracy.
- Impact of Weather and Geographical Variability:** Analyze how weather and location differences across states influence energy usage.
- Model Development and Optimization:** Develop multiple machine learning models, comparing their effectiveness in predicting Site EUI.
- Predictive Performance Evaluation:** Use metrics such as RMSE and R^2 to assess model accuracy.
- Application and Policy Implications:** Discuss the potential applications of the study's findings in policy-making and energy management.

Dataset: In this research, we are utilising a unique and publicly available dataset [1]—comprising roughly 75,757 observations of building energy usage across various U.S. states collected over seven years. This dataset includes detailed building characteristics, weather data, and historical energy consumption metrics, presenting an optimal opportunity to refine and enhance predictive models using advanced ML techniques.

2. Preprocessing and Feature Engineering

As this real-world dataset came with missing values, outliers and a few other redundant information, we have applied a thorough cleaning and feature engineering stages outlined table. These stages transform the raw data into a refined dataset optimised for modelling purposes.

Table 1: Missing value handling and feature engineering stages

Method/Technique	Features Applied	Purpose
KNN Imputation for Missing Value Handling	All features with missing values	To estimate missing values using the nearest neighbours based on a similarity metric.
One-Hot Encoding and Target Encoding	State_Factor, facility_type, building_class	Convert categorical variables into a binary representation to facilitate model understanding, facility type is also converted to broader_facility_type
Seasonal Temperature Analysis	Seasonal subsets of temperature data (winter, spring, summer, autumn)	Extract season-specific temperature statistics to better model seasonal impacts on energy usage and to capture different aspects of temperature data.
Building-Based Features	building_area, floor_energy_star_rating	Create features to represent total area and efficiency per unit area, adding context for the model.
Lag Features	site_eui, energy_star_rating, ELEVATION, temp features	Introduce historical data points to capture trends and changes over time.
Delta Features	site_eui, energy_star_rating, ELEVATION, temp features	Calculate yearly changes to understand the rate and direction of feature changes.
Group-by Transformations	State_Factor, building_class, facility_type, energy_star_rating	Aggregate stats to summarise data based on categorical groups, enhancing the model's contextual understanding.

Exploratory Feature Analysis

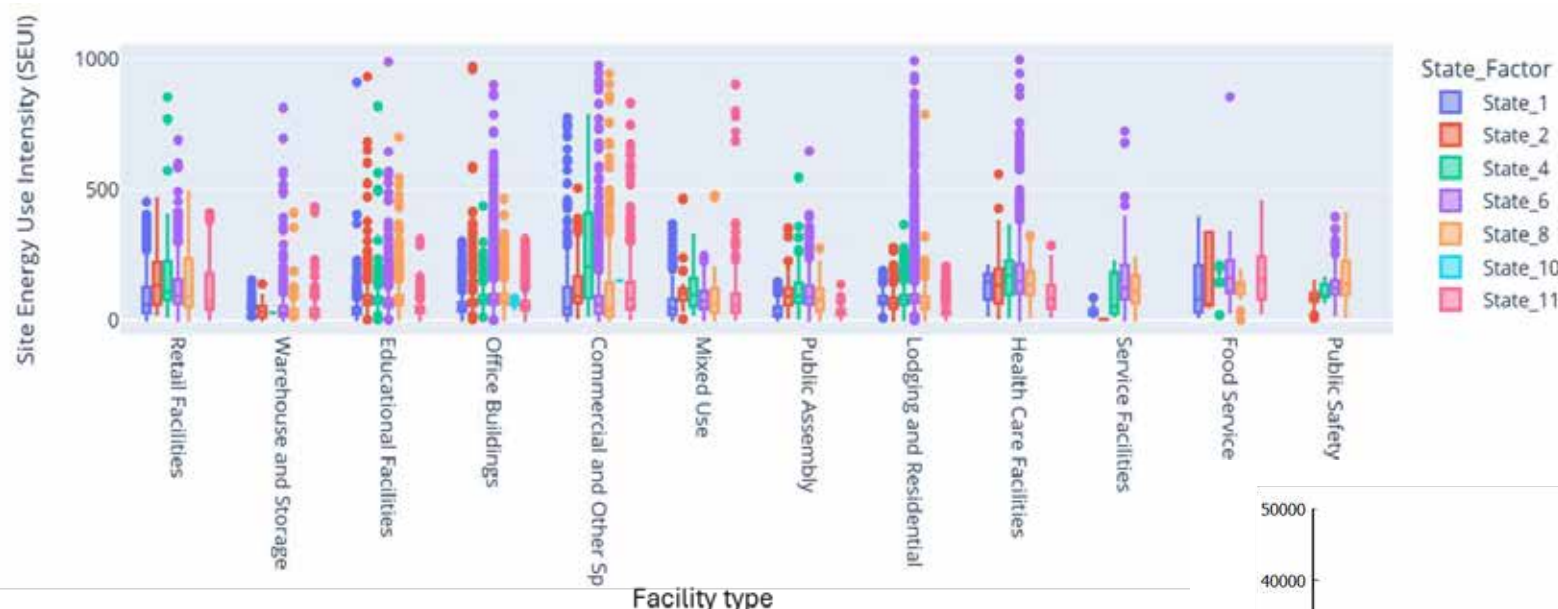
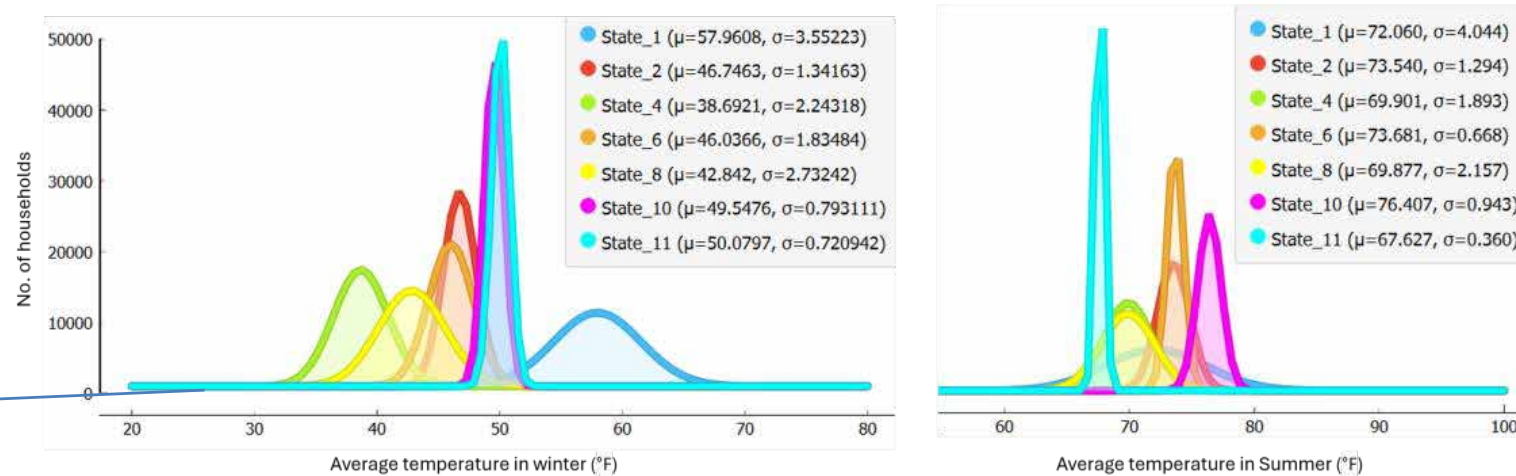


Figure 1: The plot illustrates the distribution of Site Energy Use Intensity (SEUI) across various types of facilities in different states.

The y-axis measures SEUI from 0 to 1000(kBtu/ft²/year) . Each facility type displays a distribution of SEUI values represented through a scatter of dots, where each colour corresponds to a different state as indicated by the legend. A wide range of SEUI values across all facility types, suggesting significant variability in energy use intensity dependent on both facility type and geographic location.

Figure 2: The distribution of average temperature in winter and summer (in °F) across different states. Both plots include labels showing the mean (μ) and standard deviation (σ) of the temperature distribution for each state. This plot also shows distinct peaks for different states, suggesting specific temperature distributions unique to each state. For instance, State_10 and State_11 show peaks around 90°F, indicating a



Model Development and Predictive Performance Evaluation

Implementation Details:
Train-Test Split: 90:10
Cross-validation: 5-fold

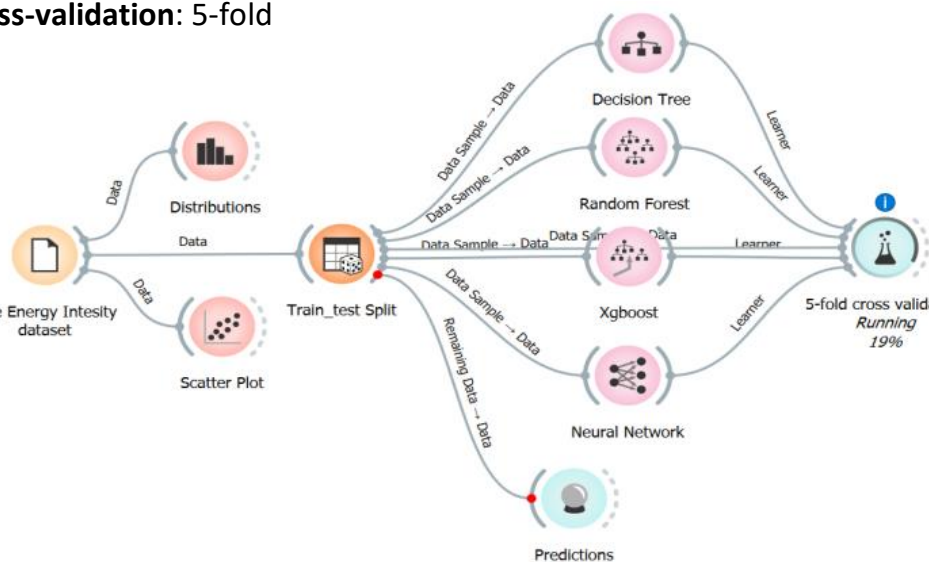


Figure 3: Workflow implemented in Orange 3, Python 3.12

Model Performance Comparison:

RMSE (Root Mean Square Error): Lower values are better. XGBoost has the lowest RMSE at 49.245, indicating that it has the smallest average error magnitude among the models.

MAE (Mean Absolute Error): Lower values are also better here. XGBoost again performs the best with the lowest MAE at 25.867, showing it generally makes smaller errors in predictions than the other models.

R^2 (Coefficient of Determination): Higher values are better, indicating a model explains more of the variance from the mean. XGBoost scores highest on R^2 as well, with a value of 0.286, suggesting it accounts for a larger portion of the variance in the dataset compared to the others.

Considering all these metrics together, **XGBoost** emerges as

RMSE (Root Mean Square Error), MAE (Mean Absolute Error), and R^2 (Coefficient of Determination)

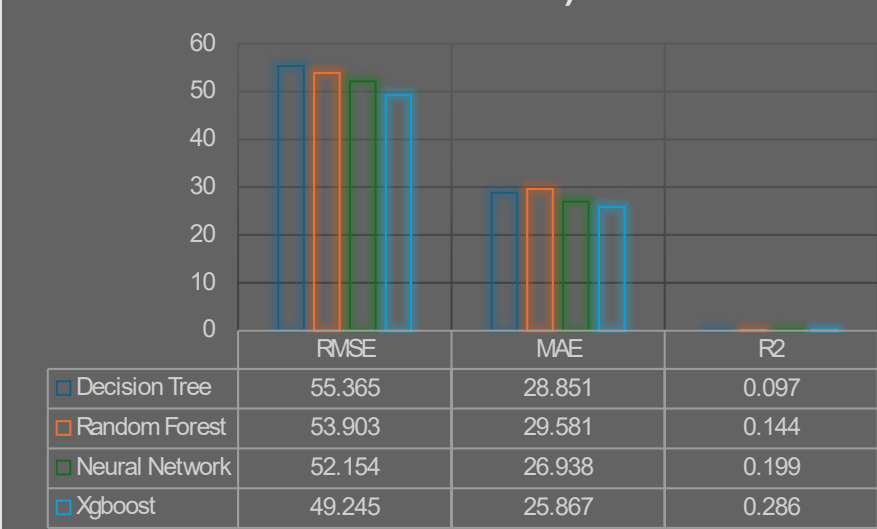


Figure 4: Comparison of the model performance

References:

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- Qiao, Q., Yunusa-Kaltungo, A., & Edwards, R. E. (2020). Towards developing a systematic knowledge trend for building energy consumption prediction. Journal of Building Engineering, 35, 101967. DOI: 10.1016/j.jobe.2020.101967
- Bourdeau, M., Zhai, X. Q., Nefzaoui, E., Guo, X., & Chatellier, P. (2019). Modeling and forecasting building energy consumption: A review of data-driven techniques. Sustainable Cities and Society, 48, 101533. DOI: 10.1016/j.scs.2019.101533



Automated 3D kidney blood vessel segmentation using deep learning techniques

Dr Shahadate Rezvy, Dr Shah Siddiqui and Dr Alexander Gegov

Contact: Shahadate.rezvy@bnu.ac.uk

Introduction

The human vascular system, with its complex network of blood vessels varying in size and intricate branching patterns, presents substantial challenges for accurate and effective segmentation. Recent advancements in computational models and imaging techniques are leading in a new era of possibilities in medical imaging. This research aims to use cutting-edge deep learning approaches and sophisticated segmentation frameworks to kidney imaging, to address these challenges.

Research Objectives:

- Develop Advanced Segmentation Models:** Aim to create and refine machine learning models capable of producing highly accurate vascular segmentation from high-resolution 3D kidney imaging data.
- Enhance Understanding of Vascular Structures:** Use the detailed images provided to deepen the understanding of kidney vascular architecture and its variations.
- Optimize Performance Across Varied Resolutions:** Ensure that the segmentation models perform consistently well across different resolutions and conditions as presented in the diverse dataset.
- Contribute to Medical Imaging Research:** Provide insights and methodologies that could potentially be applied to other areas of medical imaging, enhancing diagnostic and research capabilities in the field of radiology.

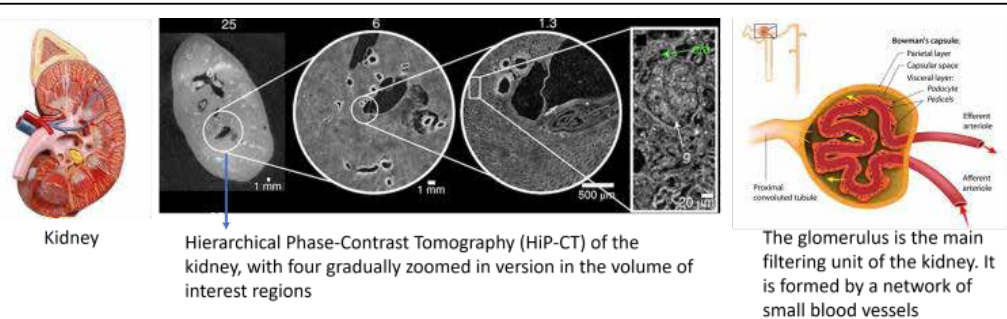


Fig 1: HPT-CT imaging of the kidney for blood vessel segmentation (adapted from [2])

Dataset Overview

The dataset[1] for this research consists of high-resolution 3D images and segmentation masks of human kidneys, obtained through Hierarchical Phase-Contrast Tomography (HiP-CT). HiP-CT captures detailed 3D data from ex vivo organs with resolutions ranging from 1.4 micrometers to 50 micrometers. The primary task involves creating accurate segmentation masks for the kidney datasets in the test set, which includes various resolutions and segmentation details.

Data Subsets /Resolution/no. of images	Purpose
Kidney_1_dense: Complete right kidney imaged at 50 μm , Densely segmented, covering the entire 3D arterial vascular tree down to two generations from the glomeruli. 2279 Slices	This subset will be used for capturing detailed internal structures due to high coherence and brightness.
Kidney_1_voi: A high-resolution subset of kidney_1 at 5.2 μm with specific volume of interest (voi). 1397 Slices	Showcases the capabilities of HiP-CT at higher resolutions and to assist in developing algorithms that can handle detailed microvascular structures.
Kidney_2: Entire kidney from another donor imaged at 50 μm , sparsely segmented at approximately 65%, focusing on major vascular structures without capturing all minute details, 2217 Slices	Offers a challenge in interpolating incomplete data and tests the model's ability to generalize from partial information.
Kidney_3_dense: A portion of Kidney 3 at 50.16 μm , 500 Slices, densely segmented	This subset provides a comprehensive data for a segment of the kidney which aids in detailed analysis and model training.
Kidney_3_sparse: Complements the dense dataset by providing the remaining segmentation masks for kidney 3. 1035	This subset challenges the ability to maintain continuity and accuracy in vascular mapping with less comprehensive data coverage

Methodology

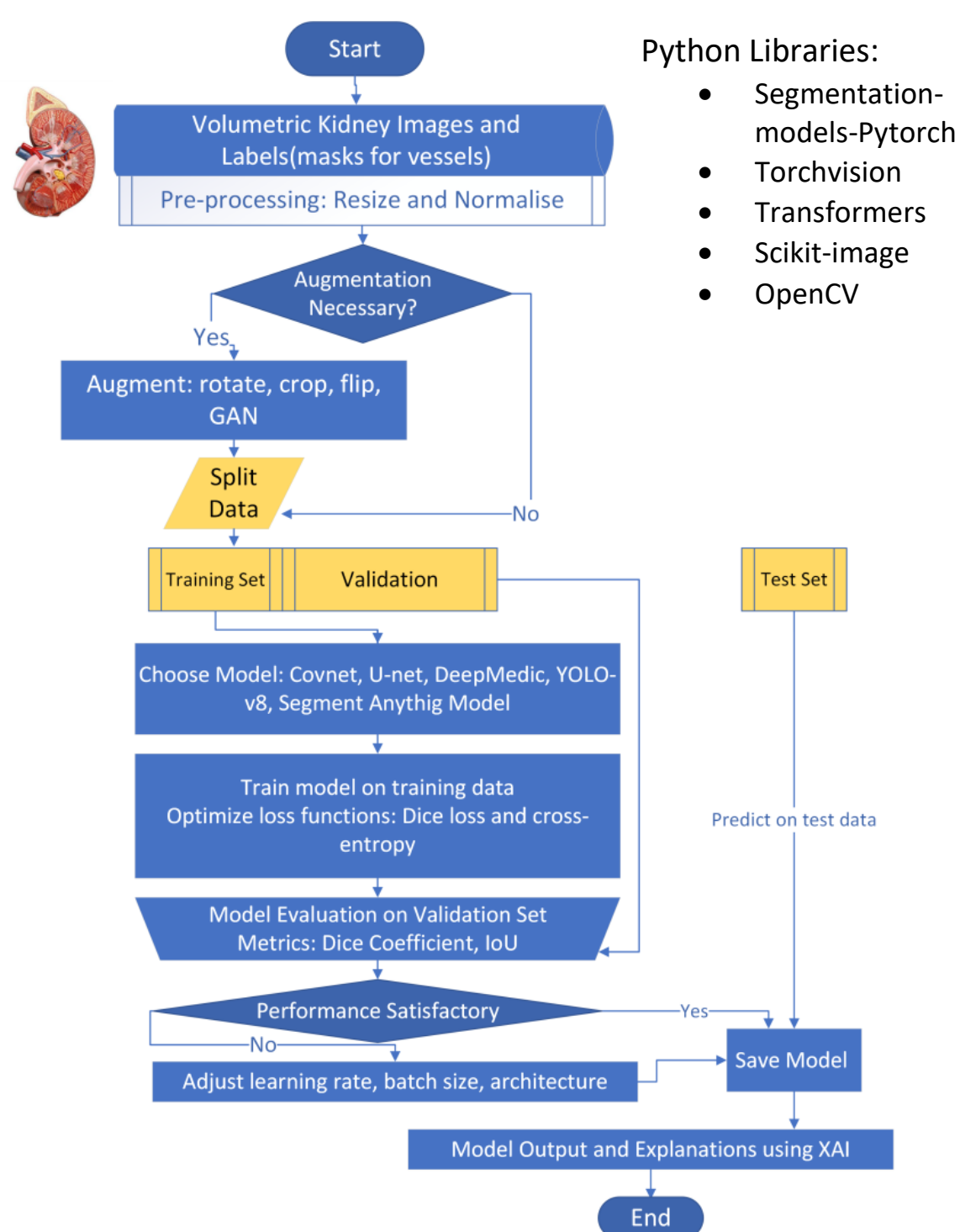


Figure 2: Implementation stages of the blood vessel segmentation model

Model Evaluation and Discussion

Model Evaluation Matrices:

To evaluate semantic segmentation several different metrics are used in the literature. In this research, we used the Dice score, Mean Intersection over Union (MIoU) to evaluate the model performance.

- Dice Score** measures the similarity between the predicted and ground truth segmentation, indicating the accuracy of segmentation for various images.

$$Dice = \frac{2 \times |A \cap B|}{|A| + |B|}$$

where A and B are the prediction and ground truth segmentations, respectively.

- Mean Intersection over Union (mIoU)** computes the average IoU across all images, measuring the overlap between the predicted and ground truth masks to assess overall segmentation accuracy.

$$IoU(A, B) = \frac{A \cap B}{A \cup B}$$

Discussion:

- This research is still in its developmental stage. However, our initial exploration is showing promising results with multiple models such as U-net and Covnet. These models showed high IOU (>70%) showing the models effectiveness in delineating precise boundaries, even in the dense and sparse subsets of the kidney data.
- We also noticed the segmentation of the human kidney's vascular structures poses significant challenges due to the complex and varying nature of blood vessels. We noticed discrepancies in segmentation performance across different resolutions. Hence, we are currently refining the algorithms and exploring further methodologies to better handle the challenges posed by sparse data and to enhance their applicability to real-world clinical settings.

References:

- Data Source: <https://www.kaggle.com/competitions/blood-vessel-segmentation/data>
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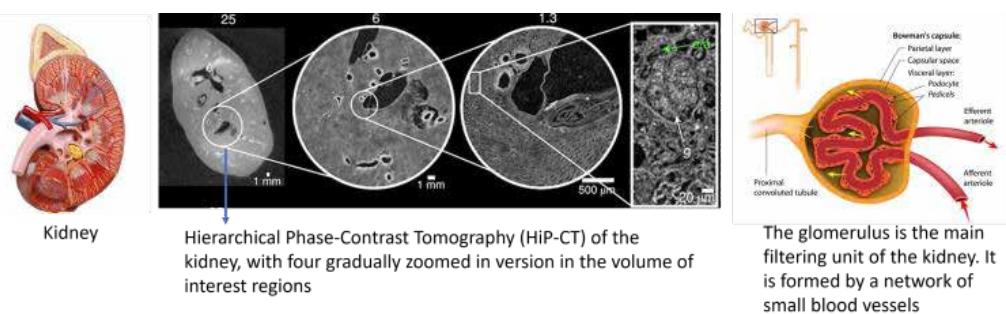


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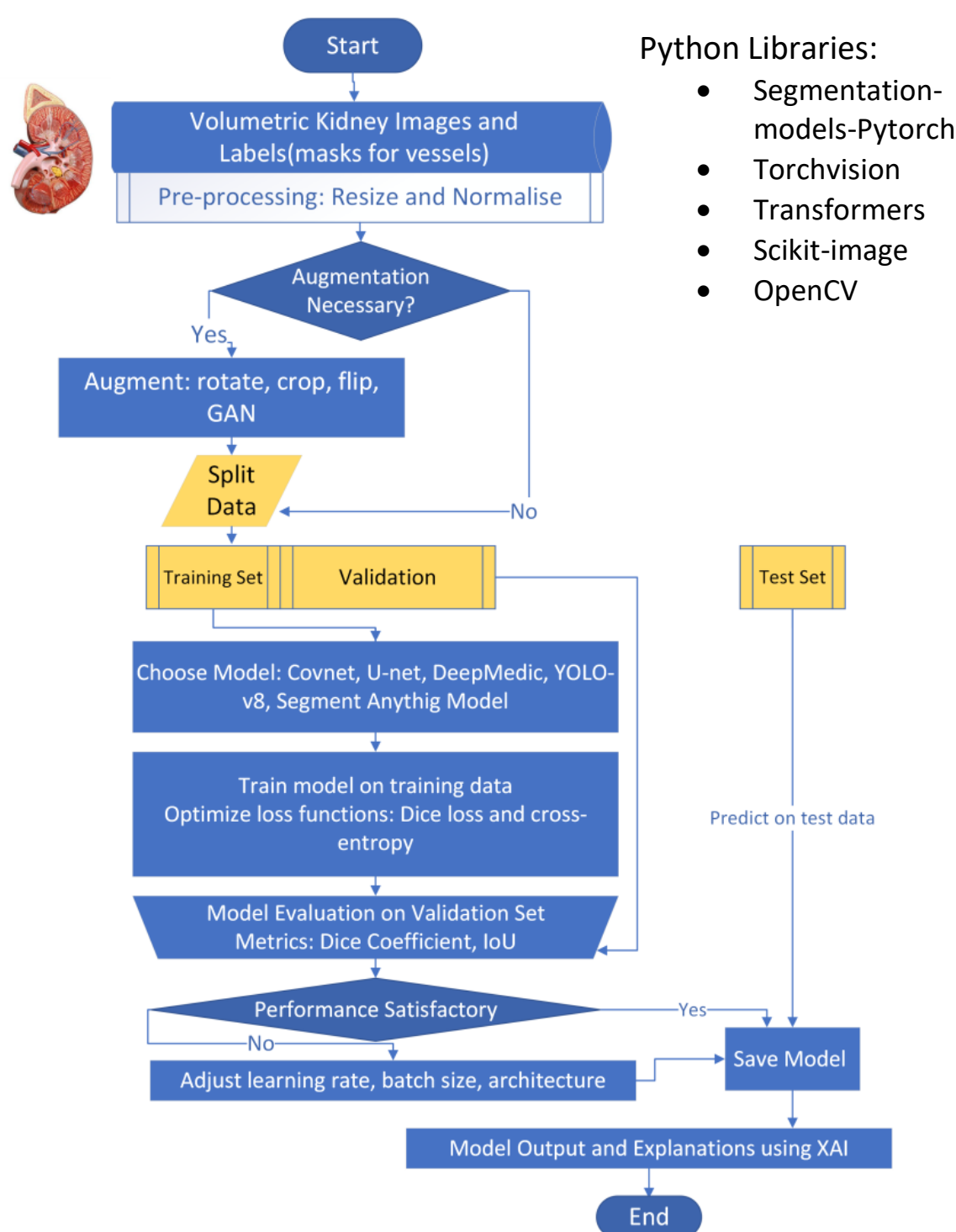


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Empowerment Through Research: Bridging Academia and Society

Captains & Poets:

A pilot project to deliver and evaluate a specifically designed program to enhance children’s emotional wellbeing and emotional regulation.



Research Lead: Borbala Kenez-Burns, Lecturer in Education and Childhood Studies, School of Human and Social Sciences

Background:

Captains & Poets is a unique primary and secondary curriculum that bridges Social Emotional Learning (SEL) with Inclusion & Belonging Programming by fostering deeper connection to self and others. The premise of the program is that there is a unique Captain and Poet in each of us that, in partnership, enable us to be our best selves. Self-awareness becomes the foundation of self-leadership which becomes the foundation of effective leadership in the world. Captains & Poets is on a mission to empower as many young people as possible with an inner compass for navigating the world around them. By inspiring connection to self and others, it encourages a healthier sense of well-being and identity, more positive relationships, and greater sense of agency and purpose in the world.

Context of Social and Emotional Learning (SEL):

Social and emotional learning (SEL) is concerned with fostering children’s social and emotional skills within educational settings, alongside their academic skills (Gedikoglu, 2021). This can include developing young people’s relationships, communication, decision-making, self-esteem, and behaviour. It can play a central role in helping children to develop the skills for educational success and lifelong wellbeing (Durlak et al., 2011; Durlak, 2016). Captains & Poets utilises the CASEL (Collaborative for Academic, Social and Emotional Learning) framework which fosters knowledge, skills and attitudes across 5 areas of social and emotional competence (casel.org).

Research structure:

The research design is the first phase of a small-scale action research project, training, delivery, and an evaluation of the pilot training program using a selection of materials. The aims of the research are to:

- Establish if the Captains and Poets program is compatible with the Personal, Social, Health and Economic (PHSE) element of the English National Curriculum.
- Evaluate the impact of the pilot program towards enhancing support for children’s emotional wellbeing and emotional regulation through a specifically designed training program.

Impact on teaching:

- The first phase of this project has highlighted the value of developing competences rather than just cascading knowledge in a curriculum
- Reaffirmed the desire to educate students to be skillful professionals who are self-aware, able to build effective relationships, contribute to a more inclusive society
- Sustainable practice – highlighted the need to build SEL into our courses so we model healthy behaviours to our students who in turn model them to the children in their care

Initial results:

- Captains & Poets program shares few similarities with PSHE curriculum
- Captains & Poets program places emphasis on developing competences and cultivating attitudes particularly in the area of ‘responsible decision-making’ whereas the learning objectives of the PSHE curriculum often focus on knowledge of topics such as Healthy Lifestyles and Physical Wellbeing
- Next steps: explore how the program might fit into UK education provision

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Co-creation Strategy



Co-creation refers to research or projects that involve stakeholders collaborating throughout the research or project process. These stakeholders may include students, members of the community, patients, health and social care practitioners, policymakers, and other relevant parties.

Purpose of the Co-Creation Strategy

Our co-creation strategy is designed to cultivate a collaborative and inclusive research and knowledge exchange environment within the School of Health and Social Care and across the University.

Through this initiative, we aim to establish a high-impact research community that genuinely represents and addresses the complexities of the issues we strive to understand and improve.

Key Areas

- Education Research
- Health and Social Care Research
- Evidence-Informed Policies

Impact

- Shape the future of research within our institution.
- Facilitate collaboration with students, clinicians, health and social professionals and academic colleagues.
- Establish advisory panels comprising representatives from diverse stakeholder groups.
- Create and nurture exciting opportunities for knowledge exchange.
- Excellence in health and social care research.

Author

Dr Yetunde Dairo
Associate Professor of Physiotherapy
Buckinghamshire New University



To view the
**Co-creation
strategy**

Please scan here





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Long distance transport access disparities and poverty: The case of the UK

Warnock-Smith, D* and Maleki, M

Introduction

Long distance transport continues to be an under-researched area due to its non-routine nature, its lower frequency of occurrence for many residents and its data collection complexities (Ullman and Aultman-Hall, 2020). Nevertheless, despite the personal inconveniences of undertaking long distance transport, with travel fatigue chiefly among them (see Reilly et al., 2008 for a full discussion), it is often considered to be an essential or at least highly desirable aspect of today's global society. According to Dowds et al., (2018), access to long distance travel and to more distant destinations is increasingly important for maintaining social networks and accessing economic opportunities and specialised services.

This research aims to build on recent work in this area by Warnock-Smith et al, (2023) by testing an initial working definition of Long-Distance Transport Poverty (LDTP) on a UK case-study using a bottom-up approach, to detect if there are any regions and/or urban areas across the UK where there could be



Fig 1: ITL1 regions of the UK

Methodology

The UK is split into 12 International Territorial Level 1 (ITL1) regions (see map) with the UK nations of Scotland, Northern Ireland and Wales counting as stand-alone regions and England being split into the remaining 9 areas. For each statistical region, two urban areas were selection with populations of between 50,000 and 100,000 (with the exception of London where two Boroughs were selected) and centre to centre long-distance (>100kms) transport links were analysed to four other urban areas, one lying inside the same statistical region, one in a neighbouring statistical region, one to the UK capital London and the final one to an large urban area in a neighbouring country. This made for a sampling frame of 96 separate Origin and Destination (O&D) routes. For each O&D route, air (where applicable), road and rail links were assessed for the months of March and April 2024 for average trip durations, frequencies and standard fares/costs (planning two weeks ahead).

Using average household budget data from ONS and a minimum long-distance trip duration convenience threshold (400 minutes), a working definition of Long-Distance Transport Poverty was developed.

Some Next Steps

- Stakeholder workshop and feedback session with the Department for Transport (July 2024)
- Review National Travel Survey and other data documenting traveler experiences from each region/town to corroborate supply related findings (May-June 2024)
- 56th UTSG Conference presentation, Huddersfield, UK (1-3 July 2024)

Some Key findings

- Locations in Wales (Wrexham and Barry) and Northern Ireland (Derry and Newtonabbey) returned the lowest relative affordability and convenience ratings across the UK.
- None of the observed routes from the selected urban areas fitted into the working definition of LDTP as there was always at least one mode (rail, air or road) that met the minimum thresholds. It should be noted, however, that rail and air fares, when booking two weeks in advance, were at a point where a high level of strain on household budgets were observed when on average more than a few long distance trips per annum are needed (using an average household family size of 2.4 – ONS),

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Empowerment Through Research: Bridging Academia and Society

Disproportionality in youth justice; service users views.

Dr Maria Ansbro and Brenda
Brown, Social Work
Department

Research question: a Home
Office Inspection in 2021
concluded that criminal justice
agencies were not addressing
racial disproportionality in
youth justice well enough.



Buckinghamshire Youth
Justice commissioned a
project to examine their
work with this group - what
could they do better?

Methodology: interviews with
a sample of children and young
people aged 12-19 who were
either black or mixed heritage
from the youth justice
caseload.

Limitations: recruiting a workable
sample size was a challenge as the
potential pool was only 37. To get
the consent of potential participants
and their parents (most were under
18) was a challenge. We learned
that a £15 Justeat voucher did not
generate enough interest, but a £40
voucher just about did.

Findings: young people rated their youth justice workers highly - they felt
supported and thought their workers understood them as people of black or
of mixed heritage. **BUT** they did not believe they had any influence over their
experiences with the police.

Recommendations: strategies to maximise practical change for the young
people on their caseload included using local data on stop and search and
making opportunities to discuss decisions around prosecution and court
disposals.



Infrastructure Automation in AWS utilising Terraform and GitHub Actions (CI/CD) pipeline Integration

Rafid Al-Khannak
CDI School / Computing -BNU

Thejaswi Bezawada
Buckinghamshire New University

Abstract:

The demand of the reliable cloud-based systems has been rapidly increased, and the development and deployment of solid system architecture are becoming an essential of any business continuity and the quality of the services. This research explores the utilisation of Terraform, an Infrastructure-as-Code tool, to automate architecting the system infrastructure on the AWS cloud platform. It describes the technical process of configuring and provisioning the AWS resources including networking, computing, and storage through Terraform's highly declarative language, HashiCorp Configuration Language (HCL). It proves how infrastructure-as-code (IaC) can turn traditionally manual and time-consuming processes into an efficient, reliable, automated one in a repeatable way which helps reduce costs by optimizing the efficiency of the infrastructure. This paper also discusses the integration of Terraform with the Continuous Integration/Continuous Deployment (CI/CD) pipeline, specifically utilising the GitHub Actions to demonstrate the seamless deployment processes and reduced application downtime within DevOps Practice by emphasizing more consistent and error-free deployments with minimal manual intervention. A successful automated implementation has been achieved to build a cloud-based system architecture.

Results:

The research findings emphasize the use of terraform in AWS to automate the infrastructure by practically implementing the deployment process, reducing manual intervention and human errors, hence achieving scalability. With the integration of GitHub Actions CI/CD pipeline in Terraform infrastructure automation to enhance the software development life cycle, deployment time has been reduced, and the reliability of the system has been increased. The critical analysis of the security best practices in this study identified effective security practices such as using DynamoDB for state file locking to prevent concurrent deployments by practically implementing the security practices in the real-time system, and identifying, and mitigating the security risks involved in managing the state file. This paper demonstrated the real-world implementation of an application on AWS using Terraform with the automated pipeline integration that achieves seamless changes and rollbacks, increasing the application's agility.

Conclusions:

The research concludes that Terraform is a powerful tool for DevOps automation as it provides simplicity and scalability of the system, HashiCorp declarative language makes complex deployments manageable and reusable of the modules. It also enhanced the software development reliability as the integration of the CI/CD pipeline reduced the deployment time, allowing the teams to focus more on development rather than operational issues. It concludes that the integration of advanced security measures is crucial for minimizing the security risks and vulnerabilities such as misconfigurations and drift in Terraform.

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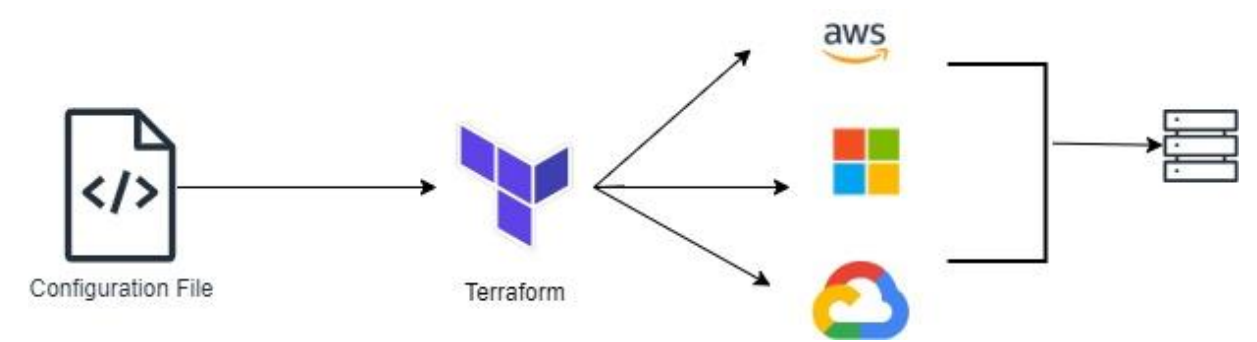


Figure 1: Terraform Architecture

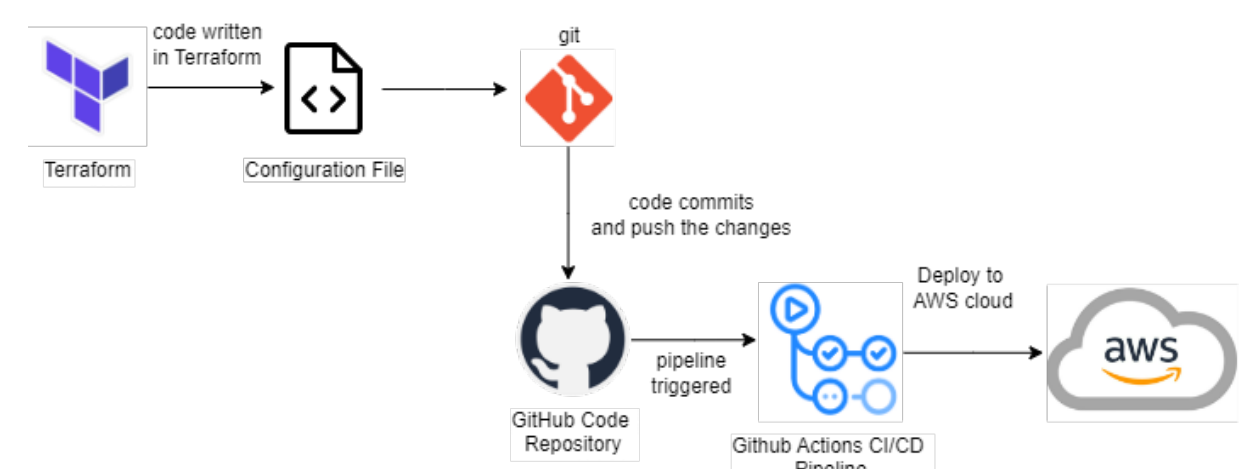


Figure 2: Workflow of CI/CD pipeline with terraform to deploy on AWS cloud

2024



Empowerment Through Research: Bridging Academia and Society

The Effect of Aerobic Exercise Training on The Physical Activity Level, Cardio-Respiratory Fitness Parameters and Quality of Life of Long Covid-19 Patients: A Systematic Review and Meta-analysis.

Olusola Oni, Yetunde Marion Dairo, Leo Soundararajan, Mark Homer

Background

Aerobic exercise has been one of the non-pharmacological management of symptoms associated with critical conditions. To date, there is no published systematic review to determine its effectiveness in physical activity, cardiorespiratory fitness, and quality of life of individuals with long COVID-19.

METHODS

A systematic review was conducted between August 2023 and December 2023 to determine the effectiveness of aerobic exercise on physical activity, cardiorespiratory fitness, and quality of life in Long Covid patients. Various databases were searched, including PubMed, Google Scholar, Web of Science, PsycINFO, Sport Discus, and ProQuest. Studies were included if written in English, peer-reviewed, had original research data and assessed the effect of aerobic exercise in adults aged ≥ 18 years with long COVID-19 sequelae. The outcomes measured were physical activity, cardiorespiratory fitness, and quality of life. Independent appraisal of study quality was done using a Down and Brown checklist as adapted by Dairo et al 2016. Finally, a subgroup meta-analysis of the included studies was done using Rev-Man software version 5.3 to determine the effectiveness of aerobic exercise, and aerobic combined with resistance exercise intervention on the cardiorespiratory fitness of long Covid participants.

RESULT

From the 1309 articles searched, eleven studies (5 RCTs, 3 Interventional studies, and 3 quasi-experimental studies) were included for the systematic review comprising 471 participants, aged 38.0 ± 10.3 to 60.8 ± 7.1 years, 49.16% male and 50.84% female. Five of the included studies use aerobic exercise as intervention and while six studies combine aerobic exercise with resistance training. Participants symptoms of long covid ranged from three to six months. The included studies have moderate to high methodological quality. Pooled results of the meta-analysis of the Cardiorespiratory fitness in the 5 studies that used aerobic exercise showed a standard mean difference (SMD) of 0.76 [95% CI: 0.31 to 1.21], $p = 0.001$, $I^2 = 42\%$, while the pooled result of the cardiorespiratory fitness in the 6 studies that combine aerobic with resistance training showed the standard mean difference (SMD) of 0.48 [95% CI: 0.26 to 0.70], $p = 0.0001$, $I^2 = 0\%$. However, there was no sufficient data to determine the effect of aerobic exercise for physical activity and Cardiorespiratory fitness in a Long Covid.

Conclusion

- Aerobic exercise, aerobic with resistance training were effective in increasing cardiorespiratory fitness of individual with long covid.
- However, aerobic combined with resistance exercise training were more effective in improving CRF of Long Covid.
- There is a need for future studies that will provide primary data and determine the effectiveness of Aerobic with resistance exercise on PA, QoL and CRF in a Long Covid individual.

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2024



Empowerment Through Research: Bridging Academia and Society

Numeracy to drug calculation: A study to measure the effectiveness of using different modes of learning for formative and summative assessment for drug calculation

Dr. Nandini Das, Debbie Kate Salvo-Canlas

Introduction

The delivery of numeracy skills for nurses may not always reflect real-life scenarios accurately. First year nursing students tend to struggle to connect theoretical knowledge with the practical application of drug calculations in clinical settings. Nurses considered knowledge of drug calculation relevant to decrease medication errors (Di Muzio, Tartaglino, De Vito, La Torre, 2016; McMullan, Jones, & Lea, 2012). The results show that using learning platforms such as safeMedicate can reduce nursing students' medication errors, however, this may also have limited impacts in developing their numeracy skills (Stake-Nilsson et al., 2022). In addition to pedagogy, integrating online platforms such as safeMedicate can enhance maths performance with better retention, increased confidence, and enhanced student satisfaction for active engagement (Revell and McCurry, 2013).

Rationale

Drug calculations require a strong foundation of basic mathematical concepts such as fractions, decimals, basic operations, and conversion, some students may develop Maths anxieties whilst some may have learning difficulties (Jordan, McGladdery and Dyer, 2014). Most learners may vary between two extremes of learning styles known as 'inchworm' and 'grasshopper' which requires flexibility in teaching (Weeks, Clochesy, Hutton and Moseley, 2013). Understanding the learning styles of students and evaluating the effectiveness of teaching materials and how these reflect on their assessment results are critical to all educators. Therefore, it is essential to assess a spectrum of cognitive styles by testing the students. To address these challenges, nursing programmes usually provide practice opportunities and numeracy support to help them build confidence and improve their drug calculation abilities over time.

Aims of the study

- (a) to evaluate the effectiveness of both traditional and online learning modes as tools to learning and assessment,
- (b) to identify learning difficulties emerging from both types of assessment, and
- (c) to propose solutions in addressing students' needs in developing confidence in solving drug calculation problems.

Research design

A mixed-method approach has been adopted for this study. The rationale for using a mixed approach is to ensure that we are in a better position to capture data on students' performance as well as on their perceptions. We aim to capture students' experiences of undertaking their assessments using two different formats (namely, online SafeMedicate and paper-based assessments). These findings will help the researchers to deduce the causal relationship of using different formats while teaching on students' learning outcomes. The study will use a non-experimental design. Participants: Undergraduate nursing students enrolled through the UCAS route from the Uxbridge and Aylesbury: September 2023 and February 2024 cohorts in the School of Nursing and Midwifery. Participants from all the 3 fields of nursing have been invited (Adult, Child, and Mental Health).

First round of data collection

The study involves a combination of 2 sampling techniques. In stage 1 Purposive sampling has been used to select participants who have completed their mock, both on the SafeMedicate platform and on paper. In stage 2 a simple random sampling technique had been proposed to draw 20% of participants from the sampled participants in stage 1. Although students provided consent to using their safeMedicate scores and mock scores for the study, only 2 students agreed to being interviewed. Since the students are not being assessed using the online platform, they seemed to be discouraged to use for practice based on the engagement report generated from safeMedicate.

Preliminary Results of round 1

Correlation co-efficient is 0.22 indicating a weak correlation between the test scores from SafeMedicate and Paper based mock.

z-Test: Two Sample for Means

	100	89
Mean	70.625	52.84101
Known Variance	545.44	619.49
Observations	48	48
Hypothesized Mean Difference	0	
z	3.60994	
P(Z<=z) one-tail	0.000153	
z Critical one-tail	1.644854	
P(Z<=z) two-tail	0.000306	
z Critical two-tail	1.959964	

We can reject the null hypothesis if $Z < -Z_{\text{Critical Two-Tailed}}$ or $Z > Z_{\text{Critical Two Tail}}$. In this case the null hypothesis cannot be rejected so means from the 2 methods of assessment do not differ significantly. We have run this for a sample size of 49 in round 1. We are yet to assess the results from round 2 from the next cohort.

Next course of action

The tests scores from the mock assessment on SafeMedicate will be compared to the test scores from the paper-based mock for the next cohort. We can then determine whether a digital platform like SafeMedicate is effective or not to learn drug calculation.

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P1: SafeMedicate is quite straight forward and you can keep practising. Since I have practised on SafeMedicate, Blackboard becomes easier.

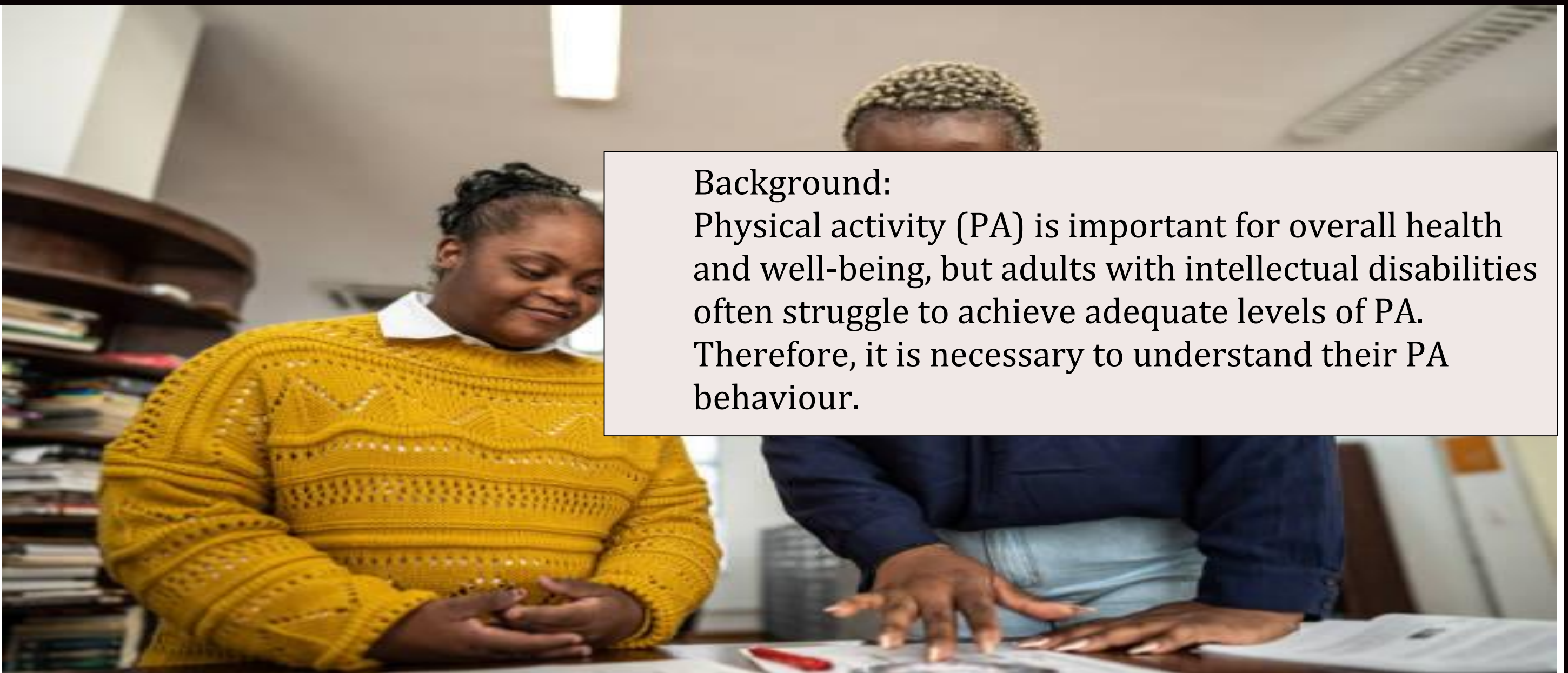
P2: I did not like using SafeMedicate because you had to do it on your own. I enjoyed Blackboard because it was taught in class



Empowerment Through Research: Bridging Academia and Society

Title: Development of a Single-Item Physical Activity Intention Measure for Adults with Intellectual Disabilities: Evidence of Validity and Reliability

Yetunde M. Dairo¹, Johnny Collett² and Helen Dawes³



Background:

Physical activity (PA) is important for overall health and well-being, but adults with intellectual disabilities often struggle to achieve adequate levels of PA. Therefore, it is necessary to understand their PA behaviour.



Aims: To develop a Single-Item Physical Activity Intention Measure (SPAIM) to assess PA intentions of adults with intellectual disabilities and preliminarily analyse its psychometric properties in terms of validity and reliability.



Methods: The study had three phases: developing the SPAIM, assessing its validity and reliability evidence, and conducting a cross-sectional survey to analyse the relationship between PA intentions (measured by SPAIM) and PA levels.



Results: There were 82 participants aged 20-68 years who had mild-profound intellectual disabilities. The study provided evidence of content- and response processes-related validity. Additionally, test-criterion evidence was provided, showing a predictive correlation between PA intention and sedentary hours (12% of the explained variability). The study also provided adequate test-retest evidence ($r = .78$).



Conclusions: SPAIM may be a valuable tool for measuring PA intention in adults with intellectual disabilities. Modifying PA intentions could prove crucial in reducing sedentary behaviour and improving the health outcomes of this population.

Scan on the left-hand side below for references



Authors: 1. Dr Yetunde Dairo PhD, Associate Professor of Physiotherapy, Buckinghamshire New University. 2. Dr Johnny Collett, PhD, Reader in Clinical Exercise and Rehabilitation, Oxford Brookes University. 3. Professor Helen Dawes, PhD, Professor of Clinical Rehabilitation, University of Exeter.



Empowerment Through Research: Bridging Academia and Society

Sustainability Intelligence (SI):

Guiding Decisions and Policies for a Transformative Design of the Denim Industrial System

Authors: Gurpreet Singh, Dr. Sri-Kartini Leet and Brigitte Stockton

01 INTRODUCTION

Context and Importance:

- The fashion industry, particularly the denim sector, faces urgent needs for sustainable practices due to its extensive environmental impact.

Research Focus:

- Introduces Sustainability Intelligence (SI), a new framework tailored to enhance systemic sustainability within the denim industry.

Key Aspects:

- Sustainability Intelligence Navigator (SIN):** Guides industry professionals through comprehensive sustainability challenges.
- Sustainability Intelligence Synthesis (SIS):** Integrates decision-making and policy formulation to drive transformative changes.

Objective:

- Explores decision-making interplay, regulations, and sustainability policies, aiming to establish a more sustainable and ethically responsible denim industry.

02 IMPACT VISION

Catalyze transformative changes that promote long-term sustainability and ethical practices in the denim industry, setting a benchmark for broader fashion industry applications.

03 METHODOLOGY

The research employs semi-structured interviews (Saunders et al., 2019) with eight industry luminaries, focus groups (Morgan, 1997) with twenty professionals, and multi-case studies (Yin, 1994) in the EU and Asia, concluding with a thematic analysis (Braun & Clarke, 2021) using a constant comparative method (Glaser and Strauss, 1967).

04 MAIN COMPONENTS

SI Conceptual framework	Elements of SIN	SIS Relationships
Mindset	- Systemic thinking - Consciousness cultivation	Capacity and Capability
Competence	- Tradecast - Enterprise development	Measure and Verify
Adaptation	- Design innovation - Solutions implementation	Flexibility and Balance
Transformation	Fostering Systemic Change	Vision and Action

Sustainability Intelligence (SI) is crucial for navigating critical gaps and synthesizing strategies in the global denim industry



05 FINDINGS

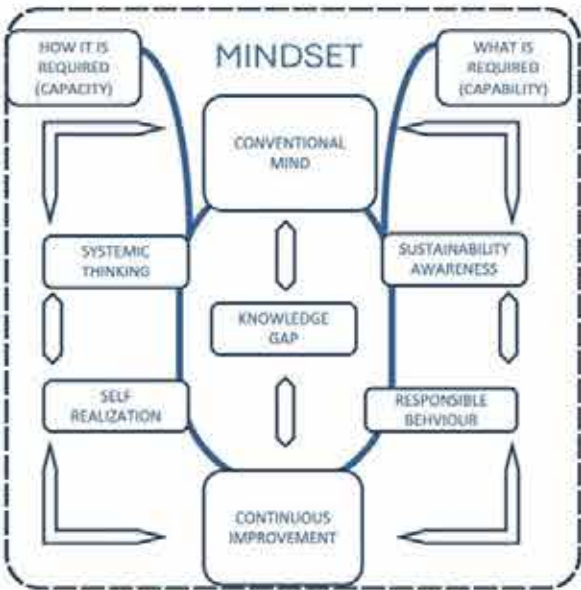
SI Navigator (SIN) Elements:

- Systemic thinking** promotes unconventional mindset, explores decision-making complexities, and fosters solutions that instill sustainability across organizational, national, and generational boundaries.
- Consciousness cultivation**, is the awareness fostered through education and systemic thinking, promotes responsible behavior and sustainable practices continuously.

- Conscious business cycles** integrates Tradecast's analysis of commercial trends with Enterprise development's focus on sustainable production and consumption, driving comprehensive sustainability practices.

- Design innovation** leverages systemic thinking and conscious cultivation to transcend traditional aesthetics, incorporating true cost analysis to drive systemic change at an industrial level.

- Solution implementation**, incorporating informed distance, strategically assesses gaps and risks across the denim product lifecycle to optimize decision-making and minimize true costs in conscious business cycles.



SIS Underlying patterns:

- Create capacity for capability and be capable of creating capacity
- Measure the verification, and verify the measurement
- Be flexible to balance and be balanced in flexibility
- Envision actions and act for the vision

06 CONCLUSION

The study contributes to the discourse on denim fashion sustainability, offering actionable insights for policymakers. It envisions a future where SI is ingrained in the global system of the denim industry, fostering conscious creativity and enduring sustainability.



07 LET'S CONNECT

RELATED LITERATURE

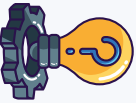
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2024



From Child to Adult with Lockdown In-Between – Learning Lessons from the Lived Experiences of Adolescents during Lockdown: A Qualitative Interview Study

Diana Downer - Senior Lecturer in Social Work at Buckinghamshire New University



Rationale

- Lockdowns of 2020-21 prompted behaviours and policies not previously seen on national and global scales.
- Caused significant disruption to the experiences of all children and adolescents.
- Study motivated by a range of international literature evidencing negative impact lockdowns had and continue to have on the mental health and wellbeing of young people.

“the effects of lockdown on my generation were deliberate. They were not an accident and it should be researched deeply...”



Methodology

- Qualitative phenomenological approach to facilitate in-depth exploration of participants' experiences (Creswell, 2013).
- Indirect recruitment via online platforms (Jenner & Myers, 2019).
- No incentives offered/provided to participants.
- Interviews conducted online (Nov 2023 – March 2024), promoting recruitment reach and inclusivity.
- Typical small sample size, prioritising depth over breadth in data collection (Smith et al., 2009).
- Qualitative Research Distress Protocol (QRDP) followed to support identification & minimisation of research-related distress (Whitney & Evered, 2022).
- Interviews transcribed by researcher to promote data familiarity.
- Data transcribed verbatim to ensure accuracy in data analysis (Yin, 2014).
- Member checking to allow participants to confirm accuracy of data (Lincoln & Guba, 1985).
- Iterative process of data collection & analysis, until data saturation achieved (Fusch & Ness, 2015).
- Reflexive thematic analysis applied (Braun & Clarke, 2006).
- Four major themes identified.
- Researcher reflexivity maintained via journal, supervision & peer debriefing to acknowledge and mitigate potential biases & ensure integrity of data analysis (Berger, 2015).



Demographic Data

- n = 13; female = 9, male = 4
- Age: 18yrs (4), 19yrs (4), 20yrs (4), 21yrs (1)
- Ethnicity: White British (7), Black African (2), Asian (1), Asian/European (1), Middle Eastern/European (1), White European (1)
- Religion: None (8), Christian (3), Catholic (1), Muslim (1)
- Residing during lockdown: England (9), Australia (1), Germany (1), Nepal (1), South Africa (1)



Mental Health (n=13)

All reported experiencing poor mental health, with “anxiety” and “depression” the most recurring. Description of panic attacks, fear of the unknown, suicidal thoughts and an alarming increase in suicide rates. Reduction or complete cessation of social contact had a profound negative impact:

- “a lot of people were affected mentally...things like **depression** and **anxiety**”
- “**decline** in my mental health because being like in that **isolation** was not good for anyone”
- “as a generation, I think we’ve become **more fragile** when it comes to like mental health”
- “**panic attacks** and **social anxiety** or anxieties in general that were **triggers**, or depression as well, of **being cooped up** at home”
- “I’m **praying** for **no more lockdowns**”, “I saw my world **crumbling** around me”
- “a path is being laid out to me of **pessimism** and **nihilism**...there is a mental health **crisis**”



Economy (n=11)

Concerns of current and future adverse effects on the economy. Rising costs of living, inflation and employment instability feel like there is a constant struggle for survival. Socio-economic gap between the advantaged and disadvantaged continues to widen:

- “we’re all young adults and we can **barely afford** to buy anything”
- “people were **losing** their **jobs**, breadwinners were losing their jobs, they couldn’t go to work, **businesses** were **closing down**”
- “everything today is so pricey...to live today is **extremely hard**”
- “I think we’ll be **surviving**, not living. Our parents used to live their life...now we will be...surviving through it”
- “people are going to **struggle** to survive”
- “it had quite a big **impact** on me, but I know a lot of people who had it a lot **worse** than I did”
- “economically as a generation, **we’re screwed**”



Education (n=12)

Adverse impact of online learning highlighted. Shift to virtual classrooms resulted in significant disruptions, leading to substantial deficits in learning. Further opportunities lost due to cancellation of activities, trips and work experience. Existing educational inequalities exacerbated and envisioned career paths altered:

- “**online** lessons...the absolute **worst**”
- “[people say] covid happened three years ago, you should be fine now. We’re **not fine** because we didn’t have the learning”
- “we just **lost** the **opportunities** to have those experiences”
- “I think a lot of people have **struggled** with education”
- “my **education** was **ruined**”
- “my generation are so **poorly educated**; they even struggle to articulate what they’re thinking”
- “I **hate** thinking about, like I can never let myself think about **what I would have been** if [lockdown] had never happened”



Government Response (n=13)

Government policies lacked coherence and were disregarded by politicians themselves. The government projected fear and failed to fulfil promises they made, resulting in ongoing mistrust of government and their policies:

- “a lot of people...my age...**didn’t trust** the government or anything they were saying”
- “definitely **weakened** the **trust** that people have in the government...government should have followed their own rules because there was always something coming out”
- “the government use **nudge theory** to morph people’s minds, especially young minds, into **submitting** to different sorts of policies later on...approach was purely around psychology and how they can **manipulate** the **population**”
- “The government made so many **promises** to the majority of the country, and they **didn’t follow through** with any of them...they made all these rules for covid and they didn’t even follow them themselves”

Recommendations:

- Government to honestly acknowledge impact of lockdowns on children and young people.
- Develop transparent, collaborative policies based on reliable, unbiased evidence.
- Reduce the socio-economic disparities further exacerbated by lockdowns.
- Prioritise mental health services and resources for young people.
- Holistically assess ongoing consequences of disrupted education, including equitable access for all.
- Invest in facilities and resources specifically designed for young people, including community centres, recreational spaces and educational programmes.



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BACKGROUND	COURSE DEVELOPMENT
- There are increasing numbers of patients with long term neurological conditions (Neurological Alliance, 2014). These are complex conditions requiring complex knowledge & skill sets. - For a variety of reasons the Birmingham City University Neuroscience Degree Course no longer sustainable. - Contact was made with RT/BNU through British Association of Neuroscience Nurses links BNU positives: - History of 'in house courses' with local hospitals - Experienced Neuroscience lecturer - More affordable options - Appropriate and even split allocation of workload between university and trust	- Modules co-designed by RT and CL 30 academic credits at level 6 or level 7 - Sessions taught at QEHB by Consultants & Clinician Nurse Specialists - Clinical educator (PGCE) to co-ordinate - Students are full members of BNU - Campus access if wanted - Online services: library, SLAT, BlackBoard - Lecturer input throughout module with availability throughout the working week for queries, tutorial and general academic support

THE AUDIT	THE AUDIT: METHOD
- In 2023 the course had been running for 7 years and had educated over 100 students. AIM: - To gain an insight into how students practice and role has changed since completing the Neuroscience Course in Birmingham. - To evaluate the impact of the course on students practice - To use the data to inform the review and ongoing delivery of the Neuroscience Course in Birmingham	- Audit Tool - Questionnaire - Piloted pre sending for clarity & understanding - Questionnaire sent to all previous students – Sample Size 100 - Change in role or institution meant email addresses may have changed - Participation Voluntary - Students may chose not to take part - Consent Gained and ethical considerations met - Data collection Anonymous to allow freedom of speech - The questionnaire had three elements: Your Practice, Your role, The programme - Open ended question: 'Is there anything else you would like to add about the course or your opportunities after completing the course?'
	THE AUDIT: RESPONSE RATES
	- Approx 9% (8 respondents / 1 unopenable) - Professions: Nurses 7, Dietician 1

FINDINGS

YOUR PRACTICE:	YOUR ROLE:	THE PROGRAMME:
Practice and confidence changed for all: - Confidence in recognising deterioration & escalating - Supporting junior members of staff - Deeper theoretical understanding & use of evidence based decision making - Greater understanding of MDT/holistic care Implementation of improvement projects for 50% of respondents: - Unit now cares for patients with nasogastric tubes - Nursing care of ICP - Sleep improvement strategies for TBI patients - Teaching sessions for junior staff - Projects to support higher dependency patient policies	Strong correlation between course completion and promotion 100% more confident in applying for promotions 87% received promotion since completion Of this: 60% into leadership roles 40% into education or research roles 87% now able to teach junior members of staff:	Strengths - Mix of staff backgrounds & specialities supported peer learning - Mix of teaching & learning strategies - Interactivity - Specialist knowledge of staff - Clear and well structured curriculum Weaknesses - Balance between surgery & medicine - No practical element - Volume of content - Workload balance
Analysis of Impact: 100% worth the time 87% more likely to stay in work place (retention) 100% more effective practioners 87% increased morale 87% more efficient	"I feel that this course is invaluable for nurses working within a neurosurgical setting" "Please continue this course...I feel strongly that this had a positive impact on my practice" "it has been great to see junior members of staff attend the course themselves and seeing their confidence grow as a result, which ultimately benefits the patients and the care they receive, but also the positive effect it has had on the ward team"	

STRENGTHS AND WEAKNESSES		Reference
STRENGTHS - Piloted data collection tool - Post completion of course so no risk of positive bias - Quantitative and qualitative data	WEAKNESSES - Convenience sample - Low response rate - Recollection issues/bias	Neurological Alliance (2014) Neuro Numbers London